



School of Computing and Informatics
University of Nairobi

Project Title:

***eProjectTracker: A Web Based Project Tracking
system for the Constituency Development Fund
Board.***

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DECLARATION

This research project is my original work and has not been presented in any university.

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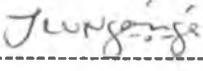
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Date: 6th May 2011

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This project has been submitted in partial fulfillment of the requirement for the Master of Science in Information Systems of the University of Nairobi with my approval as the University supervisor.

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ABSTRACT

In many development projects, reporting implementation progress has become of great importance. Project implementation reporting should be done right and in a timely manner for decision making. Reporting on project progress and data consolidation can be challenging if several projects are undertaken simultaneously across several regions. To this end, this research describes why project monitoring is necessary.

Due to advancement in technology, many organizations have noticed the increasing benefits of using Information Communication Technologies to the function of project monitoring.

This paper describes and reports on an effective system for monitoring of Constituency Funded projects using best practice project monitoring framework.

Besides the research, the project also involved the design and development of a system that would help to monitor several projects across several regions. To this end, a web based project monitoring solution is desirable. The web solution has been used to specify and implement the framework to represent all the processes in project monitoring. The use of web technology has been motivated by an increased demand for information sharing, transparency and efficiency in project implementation.

Structured Systems Analysis and Design Methodology (SSADM) was used as a research methodology to create the system. PHP and MySQL were used to develop the web application and the database.

The system consists of a main function including User Management System, Project Monitoring System, and Report Projects Progress System. The System users are divided into four levels depending on user's authorization –system administrators, project directors, project coordinators, and senior officials of the Constituency Development Fund Board– to manage, track, monitor, update information, handle real-time projects progress, and analyze the projects efficiently.

The outcome of this research is a web-based project monitoring system which monitors, updates progress in projects, and tracks the progress and status of the projects.

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List of Abbreviations

NARC-	National Alliance Rainbow Coalition
CDF-	Constituency Development Fund
CDFB-	Constituency Development Fund Board
CFC-	Constituency Fund Committee
CDC-	Constituency development Committee
PMBOK-	Project Management Body of Knowledge
UNPAN-	United Nations Public Administration Network
USAID-	United States Agency for International Development
ADB-	Africa Development Bank
ESP-	Economic Stimulus Package

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Over the recent past, the use of Internet and more significantly the World Wide Web has revolutionized operational procedures for all types of organizations. It has permeated every aspect of human activities. What of email, electronic banking, electronic marketing, electronic publishing, electronic government and many more people have had to move in. The Internet has become an effective technology in today's world. It has made work possible without the confines of brick and mortar. Field workers are able to submit reports real time.

Connolly and Begg (2005) say that the growth of internet will continue at a rapid pace through the next few years, leading to a global interconnectedness on a scale unprecedented in the history of computing. Organizations therefore need to develop new database applications or reengineer existing ones to take advantage of the Web as a strategic platform for implementing innovative business solutions.

The Constituency Development Fund Board Secretariat has to track the progress of all its funded development projects using this technology. This will ensure needed data is available for decision making in real time. This will go along way in identifying and taking corrective actions before project costs and schedule go beyond plans. It is in view of these that that this project has been considered. This system would help improve accountability and transparency in the management of Constituency Development Fund Projects.

1.1 Background

When NARC government came into power in 2003, they pledged to improve the lives of people through provision of services and improving overall development of communities from the grassroots and villages. To help in coordinating the development projects, Constituency Development Funds (CDF) was initiated. A CDF Board with a Secretariat was also formed to manage these funds.

Up to now, over 40,000 projects have been initiated throughout the country in different sectors of the economy. All of these have the aim of improving the livelihood of the people especially the rural dwellers.

The CDF Board grants money to constituency level CDF committees who nominate projects to be funded. These committees are responsible for managing projects at the constituency level.

1.2 Statement of Problem

Each year over 4000 projects are managed, monitored and evaluated under the oversight of the CDF board secretariat. The number of projects is on the rise. Number of officials to supervise has remained relatively

constant. Thus, the officials tasked with the duty of monitoring projects are overwhelmed. These facts increase the burden of project monitoring and management by officials of the board.

Accurate, timely, and relevant information is essential to the decision-making process during the life of a project implementation. This information is a valuable resource for project managers and project owners. Therefore, relying on an inadequate information system puts a project at risk.

The CDF project implementation environment in Kenya is faced with the following challenges:

1. Lack of a system that captures implementation progress and to deliver the result of all development projects and programmes across the country.
2. Senior government officials cannot find online and real-time information regarding project progress.
3. Lack of a system that give warnings about project overruns in terms of cost and time.
4. Inability of projects heads/managers to report accurately the project status in terms of time, cost and remaining work.

It is equally important to note that the CDF project has been marred with a lot of misuse of the funds. An audit of the Constituency Development Fund has exposed massive wastage, unaccountability, poor workmanship and outright theft according to Wanja (2011). According to this report, Kshs 425 millions had been misused mainly in wasteful spending and misappropriation while some have been spent on non-existent projects. Despite this knowledge, the government has not put in place an information system that would deliver the types of information needed to ensure project success.

It is with this background of a gloomy picture that I set out to come up with a system that can be used to monitor the implementation and use of the CDF resources which are meant to support development of infrastructure at the grassroots.

1.3 Hypotheses and Assumptions

1. The current monitoring system is ineffective and inefficient in providing adequate and reliable information to users.
2. The design of this web based project monitoring system will help the Constituency Development Fund Board to improve their efficiency and to provide accurate data to users in real time.

1.4 Objectives

1. To find out the inadequacies, if any, in the current project monitoring systems.
2. To ascertain to which extent a web based solution can be used to solve the inadequacies in the current project monitoring systems.
3. To support the operation of the CDFB to be more efficient regarding project management.

1.5 Scope of Study

The proposed project tracking system will be for the Constituency Development Fund Board. The system will be used to automate the process of project tracking and monitoring implementation progress.

Among the items to be monitored by the system for all projects in all constituencies in the country include:

1. Project inputs
2. Project activities and implementation progress
3. Project outputs
4. Project Goals and Purpose

The system will be developed using PHP and MySQL as development tools.

1.6 Result and Contribution

The outcome of this research project is a web based project tracking system which will enable the CDFB to:

1. Manage, monitor, update data and track projects progress across the country
2. Provide a paperless working environment and help eliminate project assessment overhead involved in paper based progress reporting
3. It will help the board officials work efficiently and effectively.

This research is aimed at finding ways and developing an efficient system to help improve project monitoring in Kenya.

1.7 Conclusion

This chapter has given an introduction to the study, the statement of the problem and the research questions that this research seeks to answer. It also gives the assumptions that will be made during this study, the aim and objectives of the research project. The chapter has concluded with an indication of the result of the research and the intended contribution that it will make.

The subsequent chapter gives a preview of literature on what others have done/written on project monitoring and related internet technologies upon which web based project tracking is dependent.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

Mugenda and Mugenda (1999) state that literature review involves the systematic identification, location and analysis of documents containing information related to the research problem being investigated.

Literature review is therefore aimed at looking at works done by others in the same field of study in a bid to find a solution to the problem in question. The eProjectTracker is meant to tackle the project monitoring problem faced by the CDFB. The project will revolve around using Internet technologies in its quest to solve the problem.

In this section, related literature is reviewed to help in the analysis, design and development of a prototype web based project tracking system for the CDFB secretariat.

In particular, this chapter reviews literature on the provisions of the CDF Act (2003) and the CDF Amendment Act (2007), project management, project monitoring, the Internet, the World Wide Web and Database management.

2.1 Constituency Development Fund Act

2.1.1 Constituency Development Fund

The Constituency Development Fund (CDF) was established in 2003 through the CDF Act in The Kenya Gazette Supplement No. 107 (Act No. 11) of 9th January 2004. The fund aims to control imbalances in regional development brought about by partisan politics. It targets all constituency-level development projects, particularly those aiming to combat poverty at the grassroots. Essentially the fund helps to create sustainable community development and ensuring wealth creation at the constituency level.

The fund comprises an annual budgetary allocation equivalent to 2.5% of the government's ordinary revenue. A motion seeking to increase this allocation to 7.5% of government's revenue was recently passed in parliament.

75% of the fund allocated to CDF is allocated equally amongst all 210 constituencies. The remaining 25% is allocated as per constituency poverty levels. A maximum 10% of each constituency's annual allocation may be used for an education bursary scheme.

According to the CDF Act, expenses for running constituency project offices should not exceed 3% of annual constituency allocations. Each constituency is required to keep aside 5% as an emergency reserve.

To help manage the CDF, a CDF board was formed. Further, CDF is managed through 4 committees 2 of which are at the national level and 2 at the grassroots level.

2.1.1 The CDF Board.

The CDF Board is at the national level and is charged with the following responsibilities.

1. Ensuring allocation and disbursement of funds to every constituency.
2. Ensuring prudent management of the fund.
3. Receiving and discussing annual reports and returns from the constituencies.
4. Ensuring the compilation of proper records, returns and reports from the constituencies.
5. Receiving and addressing complaints and disputes and taking any appropriate action.
6. Ensuring timely submission of various returns, reports and information to parliament as required.
7. Performing such other duties as the Minister with concurrence of CFC may deem necessary from time to time for the proper management of the fund.
8. Reviewing, scrutinizing and approving project proposals from the constituencies that are consistent with the act.
9. Referring disapproved project proposals or any other policy issue, from the constituencies with adequate reasons, to the CFC for direction and consideration.

To help smooth operation of this board, it has further subcommittees each charged with the functions outlined.

2.1.1.1 Publicity Committee

1. Creates CDF awareness to the public.
2. Responds to issues raised by the public.
3. Provides training and capacity building for all CDF stakeholders.
4. Carries out documentation of CDF programs e.g. project reports, success stories, constraints using various mediums including visits, calendars and diaries.
5. Draws the program of work/visit for the Board/Committees and carry out such other duties as may be assigned by the Board.

2.1.1.2 Projects Committee

1. Provides policy guidance on technical aspects relating to CDF projects.
2. Advises the Board on the choice of projects by CDFCs.
3. Advises the Board and CDFCs on actual execution of projects (implementation) in regard to technical and related requirements.
4. Advices on supervision of projects and the indicators to look for during supervision.
5. Undertakes technical audit services on projects as directed by the Board.
6. Provides guidance on projects co-funded by several donors.
7. Any other technical matter referred to the Technical Projects Committee by the Board.

2.1.1.3 Complaints Committee

1. Arbitrates on complaints raised by the public, media and other CDF stakeholders.
2. Ensures that Constituency Development Fund Act and its regulations are adhered to.
3. Resolves emerging disputes from the constituencies.
4. Advises members of the public, and other stakeholders on the best practices while implementing the CDF program

2.1.2 Constituency Fund Committees

This is a select Committee of the National Assembly that draws its membership from sitting members of parliament charged with the responsibility of:

1. Considering and recommending any matter requiring action by the National Assembly
2. Considering referenced project proposals submitted from various Constituencies through the Board
3. Considering and reporting to Parliament, names of persons required to be approved under the Act.
4. Acting as a link between the CDF Board and National Assembly
5. Overseeing the implementation of the CDF Act, 2003 and its subsequent amendments (CDF Amendment Act 2007)
6. Overseeing the policy frame work and legislative matters that may arise in relation to the fund
7. Continuously reviewing the frame work set out for the efficient delivery of development programmes financed through the Fund
8. Carrying out any other functions relevant to the work of the fund

2.1.3 Constituency Development Committees (CDC)

This is a committee at the constituency level and is constituted and convened by an elected member of parliament within sixty (60) days after an election or a by-election and has a maximum of fifteen (15) members drawn from representative groups of the constituency.

The Member of Parliament (MP) convenes locational, constituency and district meetings to deliberate development matters at least once every two years. In these meetings, a list of priority development projects are identified for submission to the CDC.

The CDC mandates include:

- a) To deliberate project proposals from the locations and those done jointly with other constituencies.
- b) To develop a priority project list both immediate and long term for submission to parliament.
- c) To come up with project cost estimates in consultation with relevant government departments to ensure costs are realistic.

2.1.4 Districts Projects Committee

These exist in every district and their role is to coordinate implementation of projects financed through the fund. Membership to this committee is explicit in the CDF Amendment Act (2007).

They ensure that no duplication of projects occur particularly where it is necessary to combine efforts on projects designed to benefit a large section of the community traversing several constituencies in a district.

2.2 CDF Projects

In order to ensure sustainable community development, the CDF Amendment Act (2007) requires that all projects be community based to ensure that the prospective benefits are available to a widespread cross-section of the inhabitants of a particular area. In this regard therefore, All projects shall be development projects and may include costs related to studies, planning and design or other technical input for the project but shall not include recurrent costs of a facility.

The CDF Amendment Act (2007) spells that projects can be identified by;

- a) The members of the locations within a constituency or
- b) They could be those deemed important for the constituency by members of the CDC.
- c) Additionally projects can be jointly undertaken by two constituencies and which case the implementation will be overseen by the District Projects Committee.

2.2.1 Categories of CDF Projects

The CDF Amendment Act (2007) provides that projects financed by the CDF can be categorized according to the economy and may fall under:

- Agriculture
- Public health
- Education
- Environment
- Water Resources
- Sports
- Public Welfare
- Communication
- Others

Whichever category the project may be classified, they should contribute to the well being of the people of Kenya.

2.2.2 The CDF Projects Life Cycle

The CDF Amendment Act 2007 identifies the cycle below for all projects under this Act.

Project identification: This is the phase in which projects are identified at the location level in each constituency. This is an annual meeting chaired by the member of parliament in which the members of a given location identify projects to be funded in that year. This meeting identifies and raises the expected benefits of a given project.

Project drafting: this is done by the CDC. Members of the CDC deliberate the projects proposed from each location within the constituency and those done jointly with other constituencies. They then come up with a priority list of all projects and the cost for each project in conjunction with government departments in which the projects fall.

Project approval: All projects from all given constituencies are then forwarded to the CDFB on a standard form for deliberations. The Board scrutinizes and approves for funding those projects proposals that are consistent with the Act. In certain instances where the Board does not approve a proposal submitted to it, it refers the matter to the Constituencies Fund Committee giving reasons why it has declined the proposal.

The Constituencies Fund Committee then makes a decision on whether the proposal should be recommended for funding or not and the decision of the Constituencies Fund Committee is usually final.

Project implementation: upon project approval, the Constituency Development Fund Committee allocates funds to all projects from a constituency. The allocation of funds for projects is dependent on the funding ceiling for each constituency. Thus in allocating funds, the projects priority list from each constituency is taken as a guide.

Upon funding, the projects are then implemented, with the assistance of the relevant department of Government. In certain instances where a particular project involves several sectors and therefore several Government departments, then one government department takes lead in the implementation of the project.

The departmental head of the relevant Ministry in each district will then oversee projects under his docket and shall keep and maintain records of the disbursements of funds and progress of the projects funded under this Act.

The Act has equally provided for the establishment of a committee to be known as the District Projects Committee whose main function is to coordinate the implementation of projects financed through the fund.

Project monitoring and evaluation: After the project implementation, the Constituency Development Committee is then responsible for monitoring the implementation of projects and may designate a sub-committee, a locational committee or a project committee, the functions of monitoring an on-going project.

The District Projects Committee may, in the discharge of its functions make official or impromptu visits to projects at such times as it may deem appropriate.

The officer of the Board in every constituency is responsible for compiling and maintaining a record showing all receipts and disbursements on a monthly basis in respect of every project.

These records should then be tabled to the CDF Committee in their monthly meeting and a summary of the projects record in the yearly meeting.

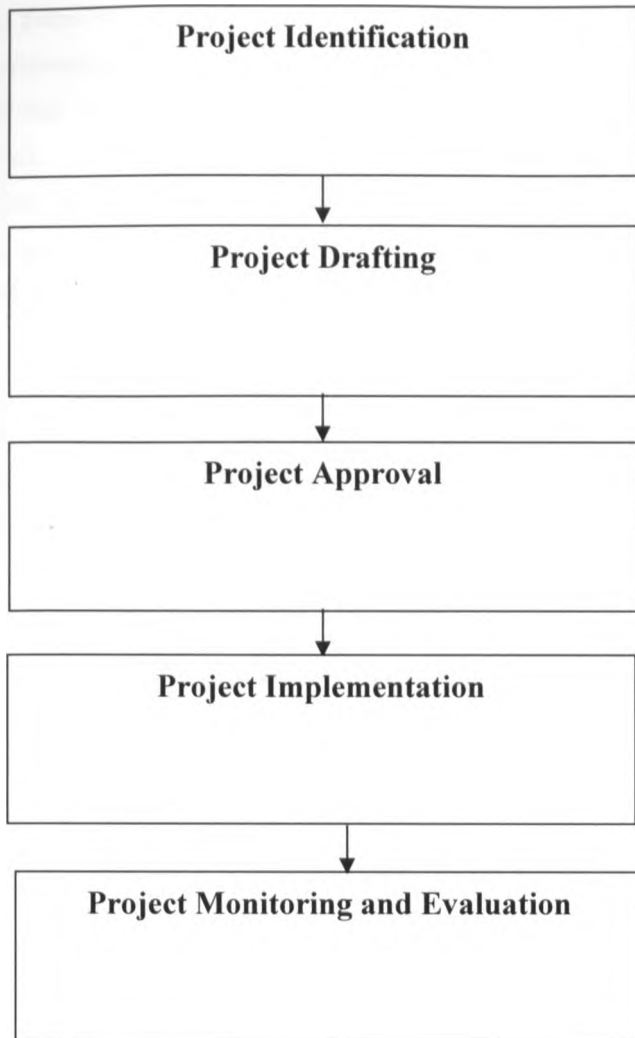


Figure 1: CDF Project life cycle

2.3 Project Management

Lock (2007) defines a project as a temporary endeavor undertaken to create a unique product, service, or result. Basically, it is planned to achieve a particular aim. The aim of a project is to attain its objective and then terminate. It therefore implies that once the objective is achieved, the project team is dissolved and moves to another project.

Every project has three basic parts: *tasks, resources and time*. Tasks are the specific actions to be performed, while the resources are anything to be used to achieve the goals and objectives including people, machinery and money. These elements must be coordinated since a change in one will definitely affect the other.

Lock (2007) further says that project management is a professional discipline combining systems, techniques and people to achieve a business objective within defined parameters of time, budget and quality. It employs creative problem solving processes designed to recognize and solve problems as they arise, and also to proactively anticipate and avert potentially detrimental situations. It is based on ethical and honest behavior using best practice techniques. Lock (2007) adds that the purpose of project management is to foresee or predict as many of the dangers and problems as possible and to plan, organize and control activities so that projects are completed successfully in spite of all the risks. He says it is the responsibility of project manager to ensure that project is finished within timescale and without using more money and other resources than those that were originally set aside or budgeted.

Robson (1997) says effective working requires not only knowledge and skills but also the use of project management. Project management is the discipline of defining goals and objectives while optimizing the use of resources.

The Project Management Body of Knowledge (PMBOK), identifies 4 stages that every project cycle passes through:

- 1) **Project initiation:** In this first stage, the scope of the project is defined along with the approach to be taken to deliver the desired output. The project manager is appointed and he/she selects the team members based on their skills and experience
- 2) **Project planning:** The second phase should include a detailed identification and assignment of each task until the end of the project. It should also include a risk analysis and a definition of criteria for the successful completion of each deliverable. The governance process is defined, stakeholders identified and reporting frequency and channels agreed upon.
- 3) **Project implementation (execution and controlling):** The most important issue in this phase is to ensure project activities are properly executed and controlled. During the execution phase, the planned solution is implemented to solve the problem specified in the project's requirements.
- 4) **Project closure:** In this last stage, the project manager must ensure that the project is brought to its proper completion. The closure phase is characterized by a written formal project review report

containing the following components: a formal acceptance of the final product by the client, Weighted Critical Measurements (matching the initial requirements specified by the client with the final delivered product), rewarding the team, a list of lessons learned, releasing project resources, and a formal project closure notification to higher management.

Why Manage Projects?

Lock (2007) identifies 4 major reasons as to why projects need to be managed.

- 1) **Better efficiency in delivering services:** Project management provides a “roadmap” that is easily followed and leads to project completion. Once you know where to avoid the bumps and potholes it follows that you are going to be working smarter and not harder and longer.
- 2) **Improved/increased/enhanced customer satisfaction:** Whenever you get a project done on time and under budget, the client walks away happy. And a happy client is one you will see again. Smart project management provides the tools that enable the client/manager relationship to continue.
- 3) **Enhanced effectiveness in delivering services:** The same project management strategies that allowed you to successfully complete one project will serve you many times over.
- 4) **Improved growth and development within your team:** Positive results not only command respect but more often than not inspire your team to continue to look for ways to perform more efficiently.

Generally speaking, a good project management practice will ensure that:

- 1) Projects are delivered successfully
- 2) Agreed objectives are achieved
- 3) Goals are clear and can be measured
- 4) resources will be coordinated
- 5) Risks will be identified and managed
- 6) there is time savings
- 7) there is cost savings
- 8) Agreed outcomes are achieved.

2.3.1 Frameworks for Project Management

The Project Management Body of Knowledge (PMBOK), is an internationally recognized standard (IEE, ANSI) that deals with the application of knowledge, skills, tools and techniques to meet project requirements. According to the PMBOK, a project is accomplished through the integration of the project management processes. This is a 5 step cycle which forms the framework for project management. For each of the processes, the PMBOK defines the necessary inputs, tools and techniques and outputs (deliverables).

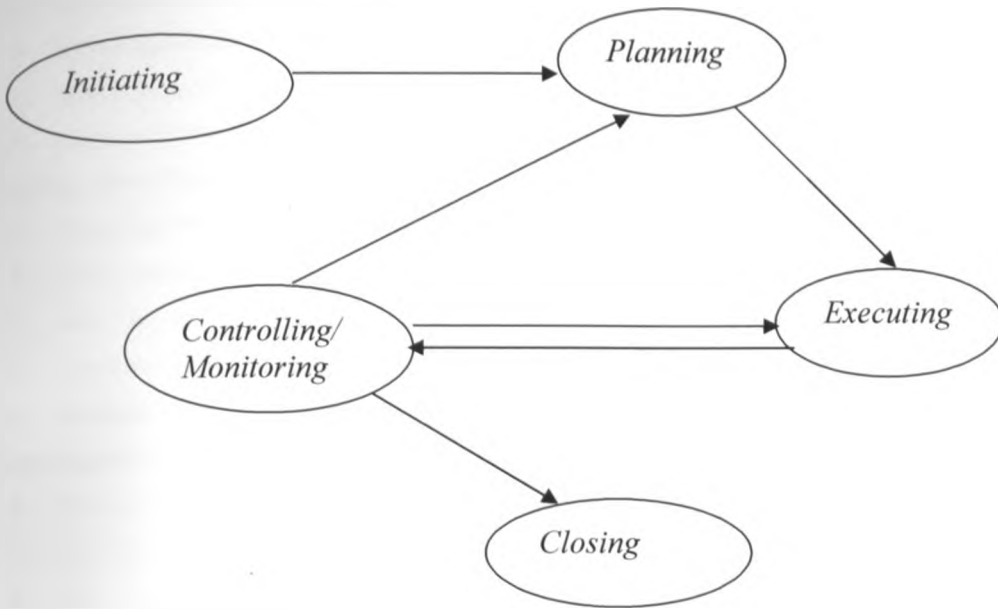


Figure 2: Project management Framework

Initiating: Main elements

- Authorize the project
- Commit the organization to a project or phase
- Set the overall direction
- Define top level project objectives
- Secure necessary approvals and resources
- Validate alignment with overall business objectives
- Assign project manager
- Integrate management

Planning: Main elements

- Define project scope
- Refine project objectives
- Define all required deliverables
- Create framework for project schedule
- Provide forum for information sharing among team members and stakeholders
- Define all required activities
- Sequence all activities
- Identify required skills and resources
- Estimate work effort

- Risk analysis and avoidance
- Define and estimate all required costs
- Obtain project funding approval
- Communication plan

Executing: Main Elements

- Coordinate the resources, team development
- Quality assurance
- Select and approach sub-contractors
- Distribute the information
- Work the plan

Monitoring and controlling: Main elements

- Manage teams, stakeholders and sub-contractors
- Measuring progress and monitoring performance (overall, cost, schedule, scope, quality)
- Take corrective actions if and where needed. Issue resolution and escalation.
- Change request management
- Risk management (technical, quality, performance, project management, organizational, external)
- Performance reports. Communication

Closing: Main Elements

- Finalize activities
- Administrative closeout (gather, distribute, archive information to formalize project completion, acceptance/signoff, evaluation, member appraisals, lessons learned)
- Contract close out (completion of project contract including resolution of open items and final formal acceptance)

The PMBOK further states that the project manager is responsible for the project objectives to deliver the final product that has been defined within the constraints of project scope, time, cost and required quality.

2.4 Project Monitoring

According to the UNPAN, monitoring is a procedure for checking the effectiveness and efficiency in implementation of a project by identifying strengths and shortcomings and recommending corrective measures to optimize the intended outcomes.

The UNPANS furthers says that monitoring is therefore the continuous assessment of project implementation in relation to agreed schedules, and of the use of inputs, infrastructure, and services by project beneficiaries. It is an integral part of good management by a project implementing agency. Its main objectives are to provide continuous feedback on implementation, and to identify actual or potential successes and problems as early as possible to facilitate timely adjustments to project operation.

Cadle and Yeates (2008) assert that Project Monitoring is an essential stipulation to allow a project to move forward. The Project monitor provides ultimate reassurance to the relevant funding body that monies drawn down at any time against the project facility are being used correctly to ensure a successful business venture for all interested parties.

Lock (2007) says monitoring should be done throughout the lifetime of the project and should be organised so that it can alert project teams regarding the problems developing and changes needed.

According to Cadle and Yeates (2008), the project needs to be monitored from three perspectives, the triple constraint of *time, cost and quality*. Sometimes the decision will involve some trade off between these three elements. They further add that it is important for the project manager to check the quality of deliverables as they are produced.

Cadle and Yeates (2008) say that finding out how things are is useless unless you are prepared to apply corrective action. In exercising control, the project manager needs to continually look at these four elements:

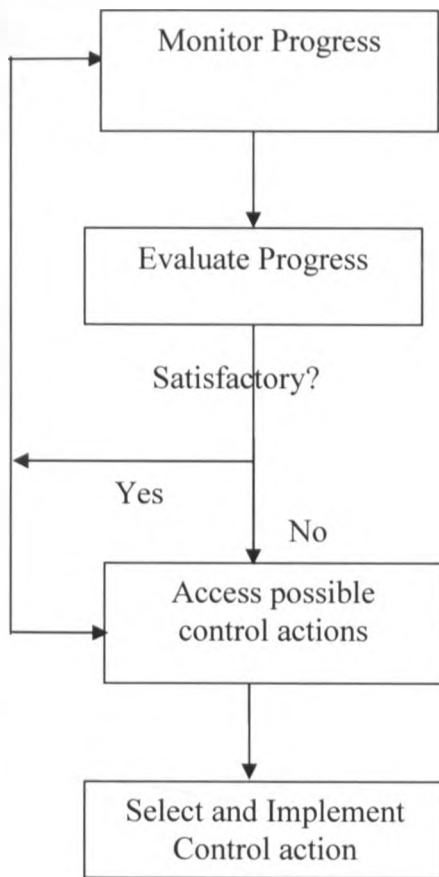


Figure 3: Monitoring and Control Cycle: Cadle and Yeates Page 208

According to Cadle and Yeates (2008), the project manager should review the following during project monitoring:

- The resources needed for the project including team members, equipment, supplies, logistical support and funds. It is important to assess when the resources will be needed, their availability and how appropriately they can be used.
- The activities of each member and their relationship to the project as a whole. The purpose is to assess whether activities are being done as planned and any delays or difficulties that have emerged, if any, that need to be addressed.
- The flow and quality of data being collected and to what extent they meet the project objectives.

Types of monitoring

There are two types of project monitoring as identified by the UNPAN:

The Compliance Test

This involves determining whether and to what extent the members of the project team have complied with defined project management policies, procedures, standards and controls in executing activities in each phase of the project life cycle.

These may include policies, procedures, standards and controls which apply to activities in project initiation, planning, execution and closeout, including activities related to procurement management and financial management.

The Performance Test

This involves comparing the schedule for activity completion and their associated costs with the planned activity schedule and associated budget parameters defined in the project baseline plan

2.4.1 Project Monitoring Frameworks

According to the Department of Planning, Cardiff University (n.d), a Project Monitoring Framework is designed to help users to monitor projects implementation in a disciplined way so that all the relevant issues are addressed thereby maximising the chances of successful outcomes. The framework is a project toolkit and enabler, designed to help those working on projects of all sizes. The framework supports a successful outcome, whilst minimising compromise to the initial concept or idea.

Kurz (2010) says that Projects can become disorganized and difficult to manage without some sort of monitoring and tracking of their progress. He says it is important to monitor the progress based on the goals for both timeliness and finished tasks. To monitor the progress of a project, large or small, you will need to learn how to schedule and list goals, as well as how to track them.

Kurz (2010) suggests the following actions to be taken in order to efficiently monitor project progress:

- a) List all of your goals for the project, including the tasks that will need to be performed to complete each goal.
- b) Write down the target completion date for the entire project.

- c) Decide when each task should be completed in order to have everything done by the project's target completion date.
- d) Organize each task in order, and write the date or time that the task should be completed. Check off the tasks as they are completed and plan the next task on the list. Pay attention to the timeframe goals as well.

The Africa development Bank has published a document which specifies that a project monitoring framework takes into account the following elements:

- a) GOALS: the ultimate reason for which the project was undertaken, normally denominated in terms of "Impact".
- b) PURPOSE: the direct impact expected to be achieved as a result of the outputs produced by this project, denominated in terms of "Outcome".
- c) OUTPUTS: These are project specific deliverables completed.
- d) DELIVERABLES: Outputs produced as a result of the project execution.
- e) ACTIVITIES: These are key implementation tasks/steps.
- f) INPUTS: These are monetary and other resources.

Project Monitoring Framework

Design Summary	Performance indicators & targets	Monitoring Mechanisms
GOAL	i.e. Long term objectives	
PURPOSE	i.e. Immediate objectives	
OUTPUTS	Project specific deliverables	
ACTIVITIES	Key Implementation tasks/steps with schedule and responsibility	
1		
1a	Start: Complete: Responsibility:	
1b	Start: Complete: Responsibility:	
2		
2a	Start: Complete: Responsibility:	
INPUTS	Monetary and other resources	
Consultants	Kshs.	
Equipment, Supplies	Kshs.	
Training	Kshs.	
Civil Works	Kshs.	

Figure 4: Project Monitoring Framework

This framework for project monitoring will form the basis of the web based project monitoring system for the CDF Board to be undertaken in this project.

2.4.2 Benefits of Project Monitoring

Monitoring provides the basis for preventing project schedule and cost overruns while at the same time offering quality assurance during project implementation.

The Cardiff University provides that the benefits likely to accrue from a good monitoring system include:

- Identifying flaws in design and plan execution
- Identifying whether a project is being carried out as planned
- Establishing the likelihood of output achievement as planned.
- Verifying if project output still support project purpose
- Identifying recurrent problems that need attention.
- Recommending changes to project implementation plan
- Identifying supplements to project in order to enhance effectiveness.
- Providing a basis for projecting the completion schedule and cost based on current performance.
- Identifying situations necessary for activating contingency plans.
- Providing performance information within projects, across complementary projects, across programmes, across ministries and even across sectors

2.4.3 Should government funded projects be monitored?

According to Ministry of Economic Planning and Development, Malawi (2005). Malawi's experiences in monitoring the implementation of national development programmes and projects have contributed towards the success of the national socioeconomic development.

Within a period of almost one year, October 2004 to July 2005, the Ministry of Economic Planning and Development was able to visit and monitor government development projects in eight different sectors of the economy. The basic aim of the visits were to learn practical issues that were being faced in implementing projects and propose some measures for resolving any outstanding difficulties. The results of these visits were compiled into reports on the performance of projects in each sector and these reports have already been widely distributed to the relevant stakeholders including the National Assembly.

The report brings together overall findings, in summary form, of the major issues that are affecting the progress of government development projects in the country.

In India, the department of State Education, Research and Training (DSERT) (n.d) Karnataka is one of the first states in the country to take up the cause of population education. The aim is to create awareness about the concept of population explosion, rapid increase in the growth rate and consequential problems with greater focus on adolescent education. The project is funded by UNFPA and monitored by NCERT Delhi.

In India as well, the Karnataka State Police Housing Unit (n.d) has implemented a web based project monitoring system. The system monitors the progress and quality of construction by adopting the internet technologies. The progress of the work at the remote construction sites can be independently uploaded to the website by the contractor as well as the officers stationed at the site. The project management cell at

Bangalore instantly accesses this data from the website and take appropriate action to minimize the time and cost overruns.

In Malaysia, the government has established a State Implementation and Monitoring Unit (SIMU) (n.d). This department is entrusted to monitor and evaluate the implementation of all approved state funded programmes and development projects.

All these citations point on the need for governments to continually focus on monitoring all development projects undertaken.

2.5 Role of Information Systems (IS)

Robson (1997) says IS is able to help organizations improve its situation as a result of the manner in which information is managed. He says that benefits come as a result of what it becomes possible for the organization to do. Jessup and Valacich (2003) says the use of any information system is to enable organizations add more value and thus they serve to:

Automate Operations. This helps an organization to complete various tasks faster, more cheaply and with accuracy and consistency.

Help in organizational learning and in doing things better. Systems provide information about its operations and the underlying work process that it supports. This is to help improve the day to day activities within that process.

Information systems also support Total Quality Management. People within an organization are constantly monitoring what they do to find ways to improve quality of operations, products and services of the organization.

2.6 Review of Project Tracking Systems.

In Kenya, the government launched a website www.economicstimulus.go.ke in 2011 to monitor the implementation of projects under the Economic Stimulus Package (ESP). ESP is an intensive, high impact programme that stimulates economic activity, creates employment opportunities, encourages innovation in wealth-creation, spurs entrepreneurship, and supports the building blocks that anchor a healthy, educated, innovative populace.

The website however provides static data that is not updated in real time. The data is collected from the fields and sent to headquarters for compilation.

The Malaysian government has mandated the State Implementation Monitoring Unit (SIMU) to develop systems to aid in monitoring all the government funded projects. Among the systems in place are:

a) *New Project Monitoring System (NPMS)*

NPMS is an e-government application system designed to monitor and facilitate evaluation of all development programmes and projects.

The objectives for the development of the new monitoring system are as follows:

- To develop an On-line monitoring system which will be fully operational for monitoring the implementation of all programmes/projects under the Ninth Malaysia Plan.
- To establish a reliable common source of reference (a comprehensive data base) for all programmes/projects under the Ninth Malaysia Plan.
- To develop a customised monitoring system, that will cater the needs of the agencies at various levels including the project sites.
- To develop a system, that will be integrated with other relevant e-government applications (single entry).
- To develop a system, that will be user-friendly, stable (technically reliable) and has high in-built warning and security features.
- To develop a Smart System which will be able to generate customised reports, charts, graph, pictorial and maps.

b) STATE MRP ONLINE SYSTEM

The MRP Monitoring System is designed with the following objectives:

- a) To have a web-enabled application system for SIMU and Resident District office to monitor the minor rural project progress throughout the state by providing mechanism to capture financial and physical progress.
- b) To expedite submission of information by enabling access anywhere, anytime.
- c) Consolidation of information is less hassle by providing various views of information captured and standardized information
 - To have a multi user access to the system with security control.
 - To provide information on the project and warrant received and issued.
 - To facilitate generation of report by all levels of users.
 - To monitor status of the project and request for projects.

In Sri Lanka, The Department of Foreign Aid and Budget Monitoring of the Ministry of Finance and Planning has deployed the electronic Project Monitoring System (e-PMS) to track progress of all foreign funded development projects and programmes implemented by the government. The e-PMS maintains data on the key aspects of a project which are important for policy makers in ascertaining a project's progress and funding utilization. The components of the project on which data/information is maintained on the system include; Project Profile, Activity Monitoring, Financial Progress by Project Components, Reimbursable Foreign Aid, Cash Flow, Loan Covenants, Procurement Information, Project Logical Framework, Major Issues/ Problems and Monthly Financial utilization. The e-PMS serves to provide timely information to the policy-makers to improve accountability, transparency and good governance. The system is updated on-line by the Project Directors on a monthly basis. It captures information at source and thereby helps to expedite project implementation. This web-based project monitoring system helps to ensure projects are implemented according to the schedule and results oriented.

This system has replaced the manual monitoring system with electronic on-line paperless development monitoring system harnessing potentials of ICT.

This database is electronically updated by the Project Directors on a monthly basis.

The system hosts data based on national level on-going projects. The system helps to:

- Determine whether the project is being implemented efficiently and effectively to achieve the intended objectives.
- Facilitate to examine the relevance, implementation efficiency, effectiveness, impact and sustainability of the project.
- Identify problems, issues and constrains that effect implementation and provide early warning signals when programs are not going as planned.
- Facilitate to take corrective actions to place the project on-track.
- Provide valuable lessons to improve the quality of future projects.

In India, the Karnataka State Police Housing Corporation has developed a web based project monitoring system available through an interactive portal which has links such as e-point book, registration of agencies online, registration of complaints online, feedback etc, that can be used by the public for interaction and to convey their suggestions and grievances for quick action and for early service delivery. Through this system, they have realized the following benefits.

- Real-time monitoring of remote sites which simplifies logistics and results in significant savings.
- Proactive alerts which helps in detecting slippages early and apply mid-course correction to ensure that the project stays within the budgeted time and cost.
- The real-time monitoring on a continuous basis brings in more quality consciousness among contractors.
- The process of automatic vendor registration and feedback creates a vendor database with vendor rating.
- Wherever KSPHC employees may be on assignment, they can easily access WBPMIS, based on the Windows NT authentication over the Web, to report project progress. This is critical because many of them work for weeks or months far from organization headquarters. The updated status of the task can be reported from any where over the internet.
- Access to the data for one and all from anywhere in the world.

2.7 Why Web Based Applications?

Web based applications have evolved significantly over recent years and with improvements in security and technology, there are plenty of scenarios where traditional software based applications and systems could be improved by migrating them to a web based application. Web based applications have come a

long way and now offer competitive advantages to traditional software based systems allowing businesses to consolidate and streamline their systems and processes and reduce costs.

Some of the core benefits of web based applications.

Cross platform compatibility

Most web based applications are far more compatible across platforms than traditional installed software.

Typically the minimum requirement would be a web browser of which there are many. (Internet Explorer, Firefox, Netscape to name but a few). These web browsers are available for a multitude of operating systems and so whether you use Windows, Linux or Mac OS you can still run the web application.

More manageable

Web based systems need only be installed on the server placing minimal requirements on the end user workstation. This makes maintaining and updating the system much simpler as usually it can all be done on the server. Any client updates can be deployed via the web server with relative ease.

Highly deployable

Due to the manageability and cross platform support deploying web applications to the end user is far easier. They are also ideal where bandwidth is limited and the system and data is remote to the user. At their most deployable you simply need to send the user a website address to log in to and provide them with internet access.

This has huge implications allowing you to widen access to your systems, streamline processes and improve relationships by providing more of your customers, suppliers and third parties with access to your systems.

Secure live data

Typically in larger more complex systems data is stored and moved around separate systems and data sources. In web based systems these systems and processes can often be consolidated reducing the need to move data around.

Web based applications also provide an added layer of security by removing the need for the user to have access to the data and back end servers.

Reduced costs

Web based applications can dramatically lower costs due to reduced support and maintenance, lower requirements on the end user system and simplified architecture.

By further streamlining your business operations as a result of your web based application additional savings can often be found.

Never installed

Browser based software never requires installation processes or hard drive space. It lives in a virtual cloud in the Internet and this means that whenever you launch it, it always has the latest version. Ajax has made it possible to deliver Desktop-like look and feel, and functionality, with no loss of performance!

Updates are seamless

Instead of having to patch each and every individual user, the patches/upgrades are applied to the server and each user received the updated version the next time they log in.

No legacy

This is a big issue for traditional software vendors. Users who purchase previous versions of a software almost always will result in legacy versions lying around which need support (which is costly). The problems relating to legacy software are almost limitless, and often is not efficient for both the vendor or the customer.

2.8 Web Technology and Database Management Systems

2.8.1 Web Technology

Connolly and Begg (2005) define the Web as a hypermedia-based system that provides a means of browsing information on the internet in a non- sequential way using hyperlinks.

Connolly and Begg (2005) add that the World Wide Web has grown to become the most popular and powerful networked information system. Its growth in the recent past has been near exponential and has caused an information revolution that will continue to surprise many. Currently, the combination of the Web and databases has brought opportunities for creating advanced database applications. They add the Web is a compelling platform for the delivery and dissemination of data centric, interactive applications.

2.8.2 Database

Data management is a vital asset to any organization success. Organizations are thus under pressure to collect and store this asset in order to be more productive and competitive. This kind of data management allows an organization to retrieve, store and analyse information easily. The CDFB is no exception. They need to provide data on all operations they are undertakings to the funding authority. Thus an efficient system that aids in the collection, management and guarantees the confidentiality, integrity and authenticity of that data is paramount.

2.8.3 Database, Database System and Database Management System (DBMS)

Jessup and Valacich (2003) define database as a collection of related data so as to facilitate data searches. According to Silberschatz et al (1999) the traditional file system had a number of disadvantages that the database technology has helped to overcome including:

- Data redundancy and inconsistency
- Difficulty in accessing data
- Data isolation
- Atomicity problem
- Data integrity problems
- Concurrent Access anomalies
- Security problems.

Date C. J et al (2006) defines a Database System as computerized record keeping system whose overall purpose is to store information and to allow users to retrieve and update that information on demand. They further highlight that such a system must therefore include Data, hardware, software and users.

Laudon and Laudon (2006) defines Database Management System (DBMS) as a special software that permits an organization to centralized data, manage them efficiently and provide access to the stored data by application programs. The DBMS provides the interface between the application programs and the data files.

O'Brien (2002) has highlighted some benefits that the CDFB will enjoy when by implementing this database approach to data management. This will include.

- Reduction in data duplication and integration of data to facilitate multi access by users.
- Users will be provided with query facilities that allow them to easily obtain information they need from the database.
- Integrity and data security is increased since access to data is controlled through the Database Management System.

2.8.4 Requirements for Web and DBMS Integration.

As organizations move to have their applications accessible over the web, there is need to ensure the data is available to users when needed. Connolly and Begg (2005) suggest some requirements for the integration of database applications with the web.

These include:

1. The ability to access valuable corporate data in a secure manner.
2. Data and vendor independent connectivity to allow freedom of choice in the selection of the DBMS now and in the future.
3. The ability to interface to the database independent of any proprietary web browser or web server.
4. A connectivity solution that takes advantage of all the features of an organizations DBMS
5. An open architecture approach to allow interoperability with a variety of systems and technologies; for example, support for
 - ↓ Different web servers
 - ↓ Web services (SOAP, WSDL and UDDI)
 - ↓ XML.
6. An effective solution that allows for scalability, growth, and changes in strategic direction, and helps reduce the costs of developing and maintaining applications.
7. Support for transactions that span multiple HTTP requests
8. Support for session and application based authentication
9. Acceptable performance
10. Minimal administration overhead
11. A set of high level productivity tools that allow applications to be developed, maintained and developed with relative ease and speed.

2.8.5 Security in Web Applications.

Connolly and Begg (2005) define security as policies, procedures, and technical measures used to prevent unauthorized access, alteration, theft or physical damage to information system while control consists of all methods, policies and organizational procedures that ensure the safety of the organisations assets, the accuracy and reliability of its records. Laudon and Laudon (2006), says that any organization that operates today need to make security of their data and access to that data a top priority.

Laudon and Laudon (2006) further caution that when large amounts of data are stored in electronic form, they are vulnerable to many more kinds of threats than when they existed in manual form.

Connolly and Begg (2005) suggest certain approaches that can be employed to safeguard web applications. These include use of:

- Proxy servers- It sits between a web server and web browser and functions to improve performance and filter requests.
- Firewalls- a system that is designed to prevent unauthorized to or from a private network. This can be implemented in software or hardware or a combination of both.
- Message Digest Algorithms and Digital Signatures
- Digital certificates
- Kerberos
- Secure Socket Layer and Secure HTTP
- Secure Electronic Transactions and Secure Transactions Technology
- Java Security
- ActiveX Security.

2.8.6 Approaches to Integrating the web and DBMS

Connolly and Begg (2005) suggest a number of techniques that can be implemented to achieve the integration of DBMS into the web environment.

- Scripting Languages- These allow the creation of functions embedded in HTML code. It allows various processes to be automated and objects to be accessed and manipulated. Examples include JavaScript and Jscript, VBScript, Perl and PHP.
- Common Gateway Interface- Refers to a specification for transferring information between a web server and a CGI program.
- HTTP Cookies- A cookie is a piece of information that the client stores on behalf of the server
- Extensions to the web server, such as the Netscape API and Microsoft's Internet Information Server API.
- Java, J2EE, JDBC
- Microsoft's Web Solution Platform- .NET, Active Server Pages (ASP), and ActiveX Data Objects (ADO);

2.9 Conclusion

This chapter has looked at the provisions of the CDF Act 2003 and the amendment Act 2007, Project management systems, project monitoring, the role of automated information systems, internet technologies, database systems, benefits of web based applications and approaches to web database integration and security of web databases. A lot of emphasis was placed on the internet technologies and project monitoring. The next chapter will look at the methodologies that will be adopted to realize the web based project tracking system.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

In order to achieve any meaningful solution to a practical or theoretical problem in any field of study, the research process needs to be conducted cautiously. Kent et al (1978) states that research is a systematic quest for knowledge that is characterized by disciplined inquiry.

This chapter therefore gives a walkthrough on the methodologies adopted throughout this project from research to the design of the project tracking system.

The main methodologies were divided into two:

1. Data Gathering
2. System Development Methodology

3.1 Data Gathering

In order to determine the current project monitoring system in use and understand how the system operates, an investigation was conducted.

The purpose of the investigation is to document the features of the current monitoring system used and establish the requirements for the proposed system.

The following features of the current system were studied.

- a) *Technologies used* – what techniques are used to monitor progress reports. It was established that manual system of reporting is used to transmit data from constituencies to the CDFB headquarters.
- b) *Procedures*- What procedures are used to collect and disseminate the data/information.
- c) *Processes*- what processes are involved in project monitoring.
- d) *Inputs*- what are the data inputs into the system.
- e) *Outputs*- what information is required from the system.
- f) *Security*- what security measures are required to secure the system.

During data gathering, the population to be used during the investigation was determined. The sample of population to use was designed, the data collected and finally analysed. The procedures for undertaking these were as detailed below:

3.1.1 Population

Babbie (1973) defines population as the aggregation of elements from which sample is actually selected or the theoretical specification of the universe. The samples of the study are thus drawn from the population but the results of the study will apply to the whole population.

The population of the eProjectTracker project for the CDFB comprised of:

Category	Population
Board Members	3

Projects Committee	3
Complaints Committee	3
Constituency Fund Committee	3
Constituency Development Committee	4
Field Officers	5
IT	2

Table 1: Table showing population for the research

The IT group was selected since they are involved with activities of the infrastructure to support the proposed system and thus have pertinent information regarding the current data entry procedures on field report data and suggestions for the alternative system.

Members of the Board and Committee are involved with policy formulation and enforcement and involving them in integrating this in the system was imperative.

The Field Officers are responsible for inputting data in the system and monitoring project progress.

The groups will thus provide information on developing a Web based project tracking system for the CDFB.

3.1.2 Sample Design

Kendall and Kendall (2002) define sampling as the process of systematically selecting representative elements of the population. When selected elements are examined closely, it is assumed their analysis will reveal useful information about the population as a whole.

They add sampling has four advantages:

- It helps accelerate the process of gathering and analyzing data rather than for entire population.
- It helps in following up missing or incomplete data thus helps in improving effectiveness.
- It helps in containing costs.
- Helps in reducing bias.

In the eProjectTracker project, the population has been identified. All the categories were sampled except IT since they are only two.

3.1.3 Data Collection

This is a process of gathering pertinent information about a phenomenon under study.

Kothari (1985) says that in dealing with a problem, it may be found out that the data at hand is inadequate and thus one needs to collect adequate data.

The forms of data collection techniques are:

- Observational methods
- Survey research

- Secondary Data analysis
- Qualitative research

This project will employ survey research and secondary data analysis.

3.1.3.1 Survey Research

This method is used when collecting data not accessible using observation. This technique has two forms: Questionnaires and Interviews. Interviews are further divided into; Personal and Telephone interviews. Questionnaires and Personal Interviews were employed.

3.1.3.1.1 Questionnaires

According to Kendall and Kendall (2002), this is a technique that allows one to study the attitudes, beliefs, behaviour and characteristics of several people in an organization who may be affected by current system or proposed system. He says attitudes are what people in an organisation say they want (in a new system), beliefs are what people think is true, behaviour is what people do and characteristics are properties of people or things.

The questionnaires were distributed to IT, Field Officers and committee members of the CDFB. The questionnaires were developed in 3 parts:

- Underlying processes
- Existing infrastructure supporting the processes
- Project Tracking

This method was adopted because it is cheap. The respondents were given the questionnaires and they were able to fill them at their own time and convenience.

3.1.3.1.2 Personal Interviews.

Kendal and Kendal (2002) defines interview as a directed conversation with specific purpose that uses questions and answer format. During the interview, I was able to get the opinions of the interviewees and their feelings about current state of project tracking systems, organizational goals and informal procedures. The interview helped to get relevant data and allowed for spontaneity.

3.1.3.2 Secondary Data

This is data already collected by someone else. It was used to collect data on:

- ↳ Operations of Constituency Development Committees.
- ↳ Information shared between CDC and CDFB
- ↳ The current tracking system

Internet was also used to look at existing project tracking systems and this was used to come up with a framework that can be applied within the CDFB project.

The review of these documents helped to gather great in-depth into the activities of the CDFB.

3.1.4 Data Recording

This refers to the process of taking down important points during the study. The data collected in each of the methods were recorded:

Questionnaires - the respondents filled spaces in the questionnaire.

Interview-notes were taken during the interview

Document Analysis-crucial facts noted as every document was analysed

3.1.5 Data Analysis

The data collected will then be subjected to descriptive statistical analysis technique of frequency and cross tabulation analysis.

3.2 System Development Methodology

The development of the eProjectTracker was structured in distinct phases. The methodology employed was Structured Systems Analysis and Design Methodology (SSADM) which implements the classic waterfall. SSADM has been chosen because of its advantages as underscored by Harry (1994). These advantages include the following:

1. It minimizes the need to “re-invent the wheel”. It is a comprehensive method and organizations do not have to come up with innovative methods.
2. De-skills the human input thus reducing dependence on implementation on particular individual since it does not require a high level of skill to learn. Individuals thus become more easily replaceable.
3. Strengthens the implementation of the world view of the organization by ensuring that the method of systems development conforms to the guidance of an experienced user.

On this basis therefore SSADM becomes an excellent method to prevent destructive ‘innovation’.

Using this methodology ensured that all the system development activities are done in a coordinated manner.

3.3.1 Tools, Techniques and structure of SSADM

The chief tools used by the method are:

- a. Data Flow Diagrams (DFDs) - which shows the data flows, data stores and processes used by the information system, together with the external entities which act as sources and destinations for data outside the system.
- b. Logical Data Structures (LSD) - which show how data is brought together to form the emergent property of information.
- c. Entity Life History (ELH) - which show how information is changed during its lifetime in relation to the entity to which it refers.

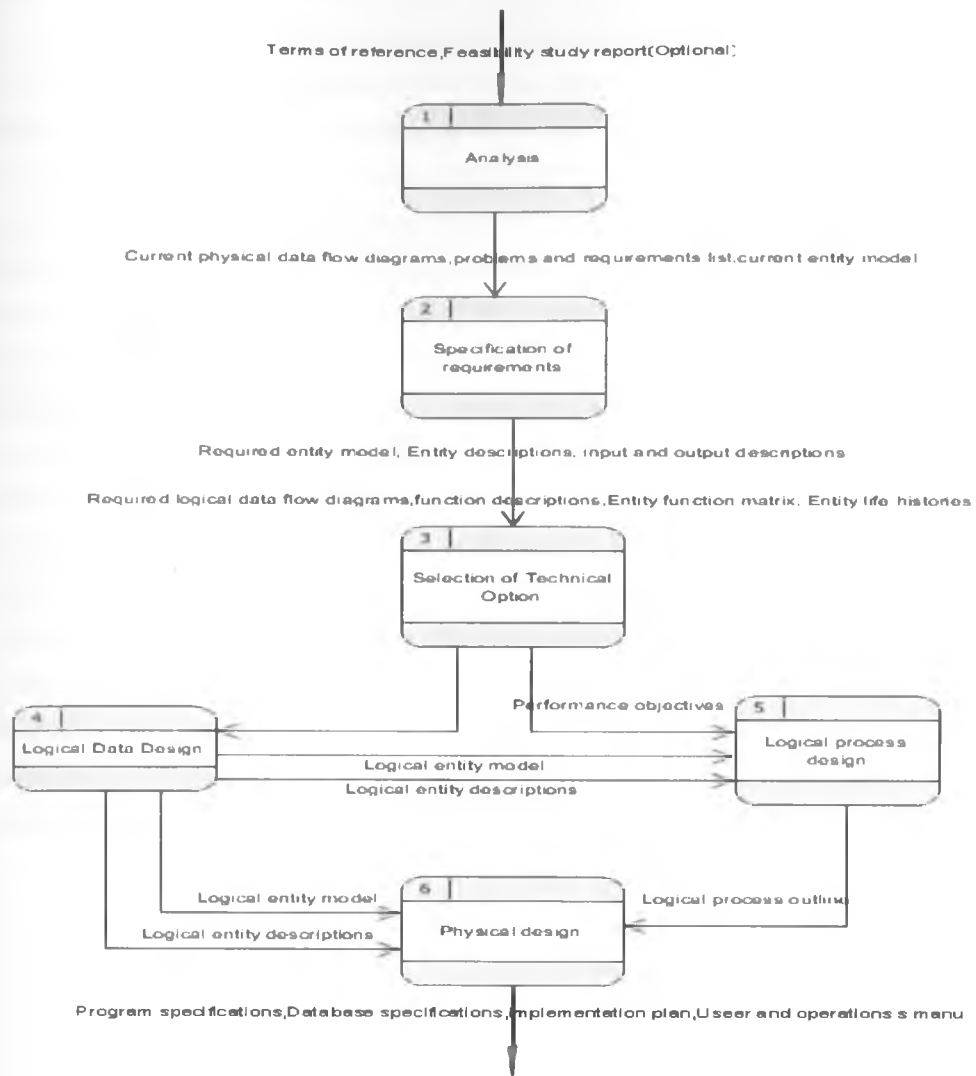


Figure 5: SSADM tools and Techniques

Source: Information Systems in Business, p. 283

Harry (1994), highlights that the methodology structures the project into 6 distinct phases with deliverables from each phase.

1. *Feasibility study*- In this phase the current system was analysed to determine if it can support additional requirements.
2. *Requirements Analysis*- Needs of the new system were identified and current system modelled in terms of processes in the system. This stage involved a thorough understanding of:-
 - a. the current system and how it works
 - b. what problems are associated with the current system
 - c. what additional requirements do we have for the new system

The outputs from this process are:

- a. Data Flow Diagrams and an entity model showing its LDS to cover *a* above
 - b. problems and requirements to cover *b* and *c* above
3. *Requirements Specification*- detailed functional and non functional requirements are identified and new techniques are introduced to define the required processing. This stage involves extracting and defining the logic which lies behind the existing physical system and setting this against the problems and requirements list. This step analyses the shortcomings or failures of the current system and identifies possible candidates for a new system. The outputs of this stage are concerned with defining a logical view of the required system.
 4. *Selection of Technical options*- this stage details the physical aspects which are needed to refine the specifications of requirements sufficiently to allow detailed logical systems design to go ahead. i.e. what hardware/ software platform to use?
 5. *Logical System Specification (Logical data/process design)*- technical system options are produced, logical design of update and system enquiry processing and system dialogue. Involves design of detailed program logic i.e. what the program has to do.
 6. *Physical design*- physical database and program specification are created using the logical system specification and technical system specification. The logical and technical specifications are used in this stage to produce a physical database design and a set of program specifications i.e how the program should work.

CHAPTER FOUR: SYSTEMS ANALYSIS AND DESIGN

4.0 Introduction

System analysis is a detailed study of the various operations performed by a system and their relationship within and outside the system.

An analysis of the project monitoring process revealed the process follows the steps hereunder.

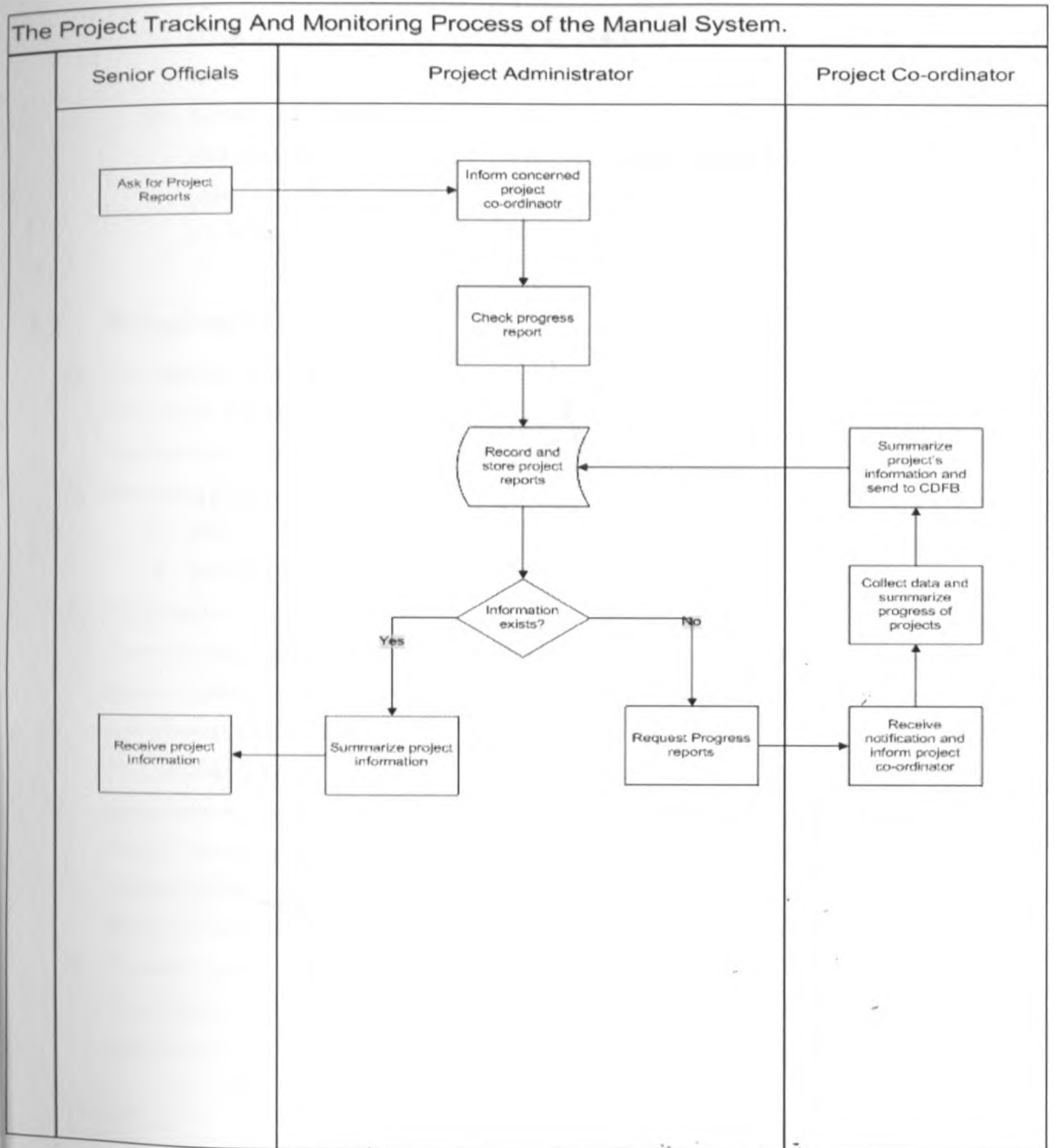


Figure 6. Manual Project Monitoring process for CDF Projects

The analysis of this manual process revealed that it had several processes and uses many officials who are dispersed throughout the country. Getting the required data would then take painfully too long.

4.1 Feasibility of the Proposed System

Feasibility refers to the measure of how the proposed system would be beneficial to the CDFB Secretariat.

The study looked at the feasibilities below:

- A) *Operational Feasibility*- An overview of the process portrayed that the proposed eProjectTracker would be beneficial in faster retrieval of data, integration of data and encourage accountability.
- B) *Technical Feasibility* – The Web Based eProjectTracker would be implemented using PHP and MySQL which are proven and tested mature technologies to deliver the proposed solution. It runs on WampServer 2 (a combination of Apache 2.2.11, MySQL 5.1.36 and PHP 5.3.0).

4.2 Requirements Analysis

a) User Interface Requirements

The System will be available to the user from anywhere through a web browser. The system has been tested to work with Internet Explorer and Mozilla Firefox.

b) Processing Requirements

- ↓ PHP
- ↓ MySQL

c) Classification of users and functions

The web based eProjectTracker for the CDFB Secretariat will have four (4) user groups.

System Administrators: (IT members of the board) can manage the entire system and assign authorization to the other users.

Project Administrators: Manage projects, update project status, add new project coordinators, and assign projects to them (Officials of the board in each constituency)

Project Coordinators: CDFB officials and other project coordinating officials in each constituency (Projects committee). They can only update project status in their constituencies.

Senior Officials: They can only view data.

d) Potential Users of the System.

The system is designed to support the operations of the CDFB Secretariat. A number of users involved in the CDFB processes who will interact with this system include:

- 1) Officials of the CDFB Secretariat
- 2) Employees of the CDFB who are posted in each constituency

- 3) Members of the Constituency Development Fund Committee in each constituency.
- 4) The members of the projects committee in each constituency.
- 5) Public

User Access Matrix

Module	Group1	Group2	Group3	Group 4
	System Administrators	Project Administrators	Project Coordinators	Senior Officials
User Management				
Add new Master data	√	√		
Edit/Delete master Data	√	√		
Add/Delete users	√	√		
Edit user details	√	√		
Assign user permission/role	√	√		
Edit user permission/role	√	√		
Project Monitoring Sub-system				
Add new/delete projects	√	√		
Edit project details	√	√		
Add new/delete tasks	√	√		
Edit task details	√	√		
Add/edit project coordinators	√	√		
Delete project coordinators	√	√		
Add/edit project events	√	√	√	
Add discussion	√	√	√	√
Report projects Progress				
Update task progress	√	√	√	
Update project status	√	√		
Add/Edit project problem	√	√	√	
Add/Edit files	√	√	√	
Add/edit project funding	√	√		

Table 2: Showing user Access Matrix

4.3 Requirements Specifications

The Requirement Specification for the proposed system in the users' point of view is for it to help them to be able to:

- ↓ monitor the project implementation
- ↓ update projects information anywhere anytime
- ↓ track the progress of the current projects and tasks
- ↓ follow the on-going project implementation and its status
- ↓ know the personnel who is in charge of each project
- ↓ store related project files
- ↓ understand the system interface
- ↓ share discussions about the projects

System Inputs

Input to the system is through graphical user interface presented to the users through a web browser. Forms have been provided to capture information that requires processing. All the forms have been validated to minimize errors.

Input data required by the system are:

User Data, Project Data, Task Data, Master Data, Login data, Project status, Task Progress data, Coordinator Data, Project Funding, Related Project File, Project Problem and Discussion

System Outputs

Output produced by the system is the main reason for developing an information system. Reports from the eProjectTracker will be displayed on screen in a friendly manner. The reports can be further output in excel or pdf formats.

The major outputs from the system are:

Project Details, Task Details, Coordinator details, User Details, Project funds disbursement, Project Progress report, Access Permission Data

Process Design

Processing is done when a particular function is called to act on a set of input data. To ensure stability of the system, controls and error messages have been integrated into processing functions.

Major processes within the system are:

User management, project progress report and project monitoring process.

4.4 Technical Options

The system will be developed using PHP and MySQL. These are mature technologies which have been tested to deliver the kind of solution needed.

System Architecture

The eProjectTracker System employs the Client-Server Architecture. The system resides on the server and will be accessed by a client from any location via a browser. The client is usually a browser such as Internet Explorer, Netscape Navigator or Mozilla. The embedded server-script code is not visible to the client.

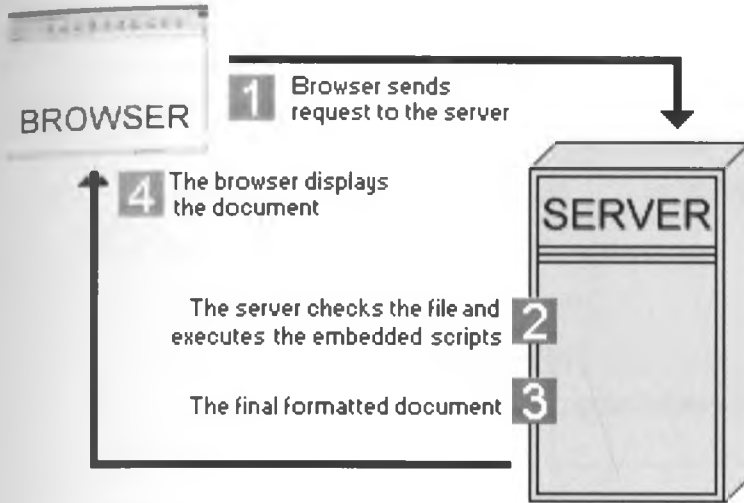


Figure 7: Diagram for client-server architecture - Server side scripting technologies

Source: http://www.webdevelopersnotes.com/basics/client_server_architecture.php3

4.5 Logical Systems Specifications

This encompasses:

- Data Flow Modeling* – this process identifies models and documents how data moves around an information system. It examines processes (activities that transform data from one form to another), data stores (the areas holding data), external entities (what sends data into a system or receives data from a system), data flows (routes by which data flows).
- Entity Behaviour Modeling* – process of identifying, modeling and documenting the events that affects each entity and the sequence in which these events occur.
- Logical Data Modeling* – process of identifying, modeling and documenting data requirements of the system being designed. Data is then separated into entities and relationships among the entities.

Data Flow Modeling

The figures below show the Data Flow Diagrams for the eProjectTracker.

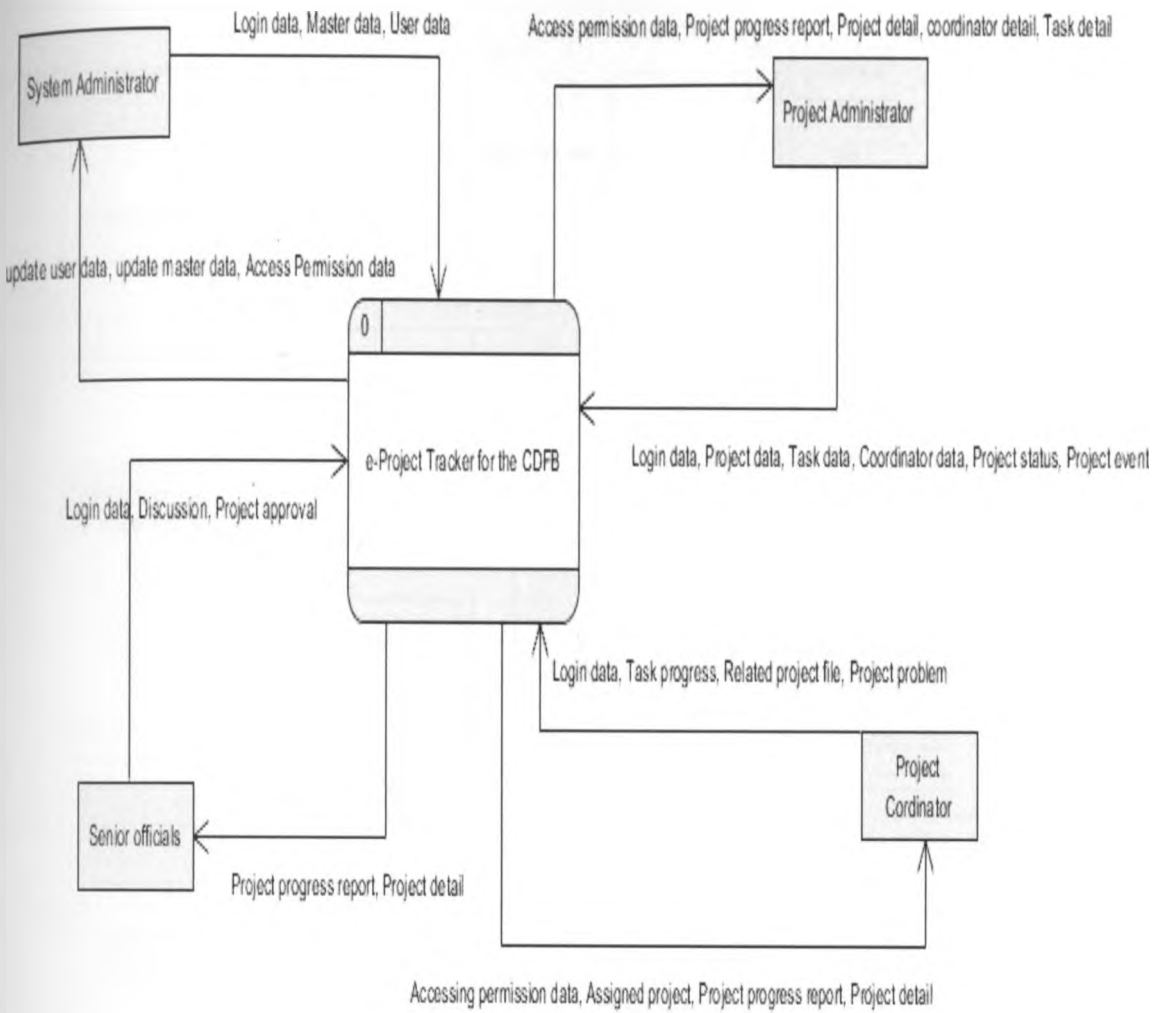
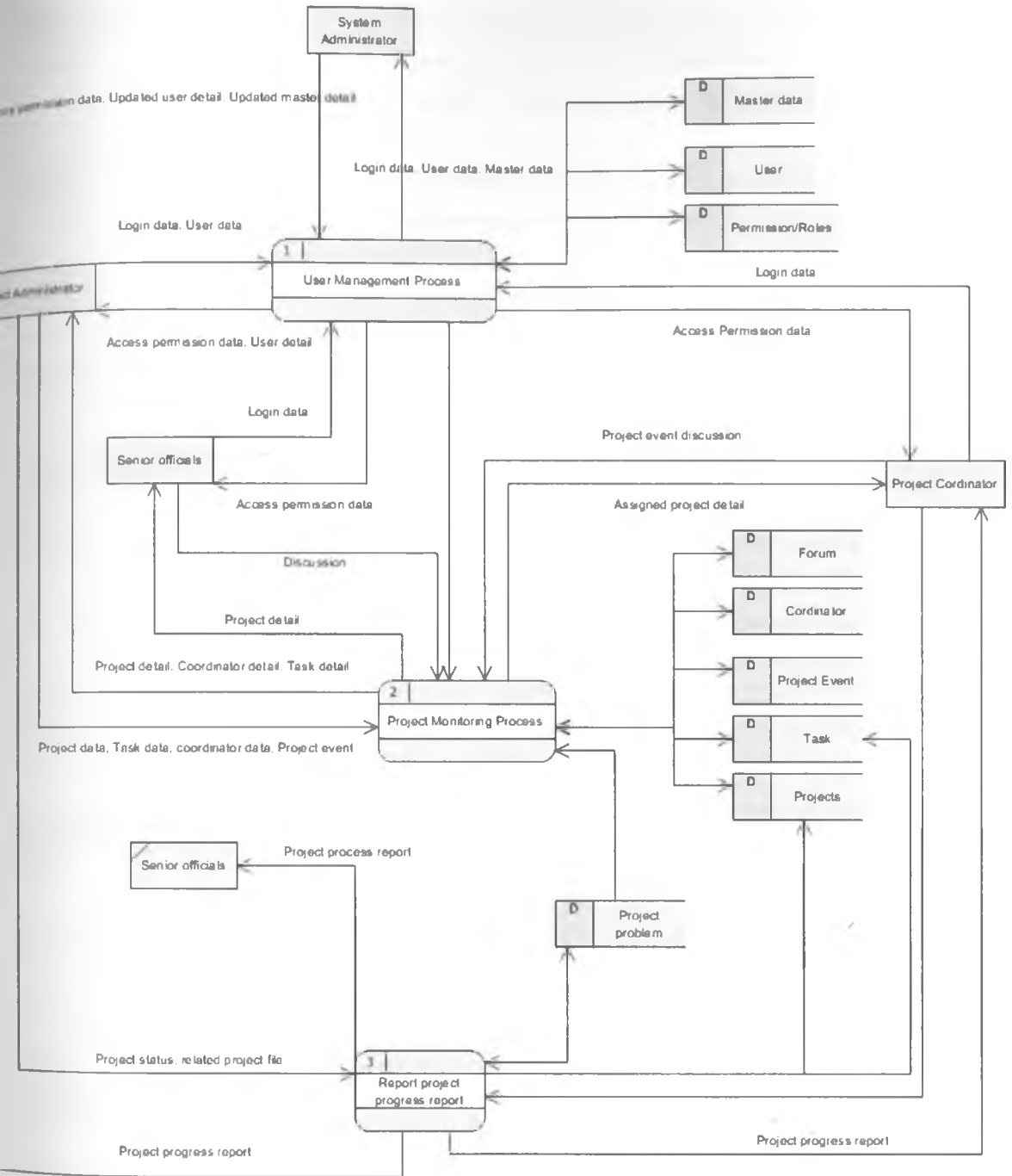


Figure 8: Data Flow Diagram for the proposed eProjectTracker

Figure 9: DFD LEVEL 0 for the eProjectTracker System



LEVEL 0 Processes

PROCESS SPECIFICATION: 0 Web Based Project Monitoring System

Input	user data, project data, task data, master data, login data, project status, Task Progress data, coordinator data, related project file, project problem and discussion
Process	Web based project monitoring system is the main process that control the administrator management process, project monitoring process, report projects progress system
Output	project details, task details, coordinator details, user details, project progress report, access permission data

Table 3

PROCESS SPECIFICATION: 1 User management Process

Input	login data, user data, master data, user permission/role
Process	This is a sub process of the eProjectTracker for handling users and checking user authorization. This process receives login data from users, verifies that data and then gives relevant access to the user. System administrators add users and assign roles. The system administrators are the ones who can change master data.
Output	Access permission data, updated user data, updated master data

Table 4

PROCESS SPECIFICATION: 2 Project Monitoring Process

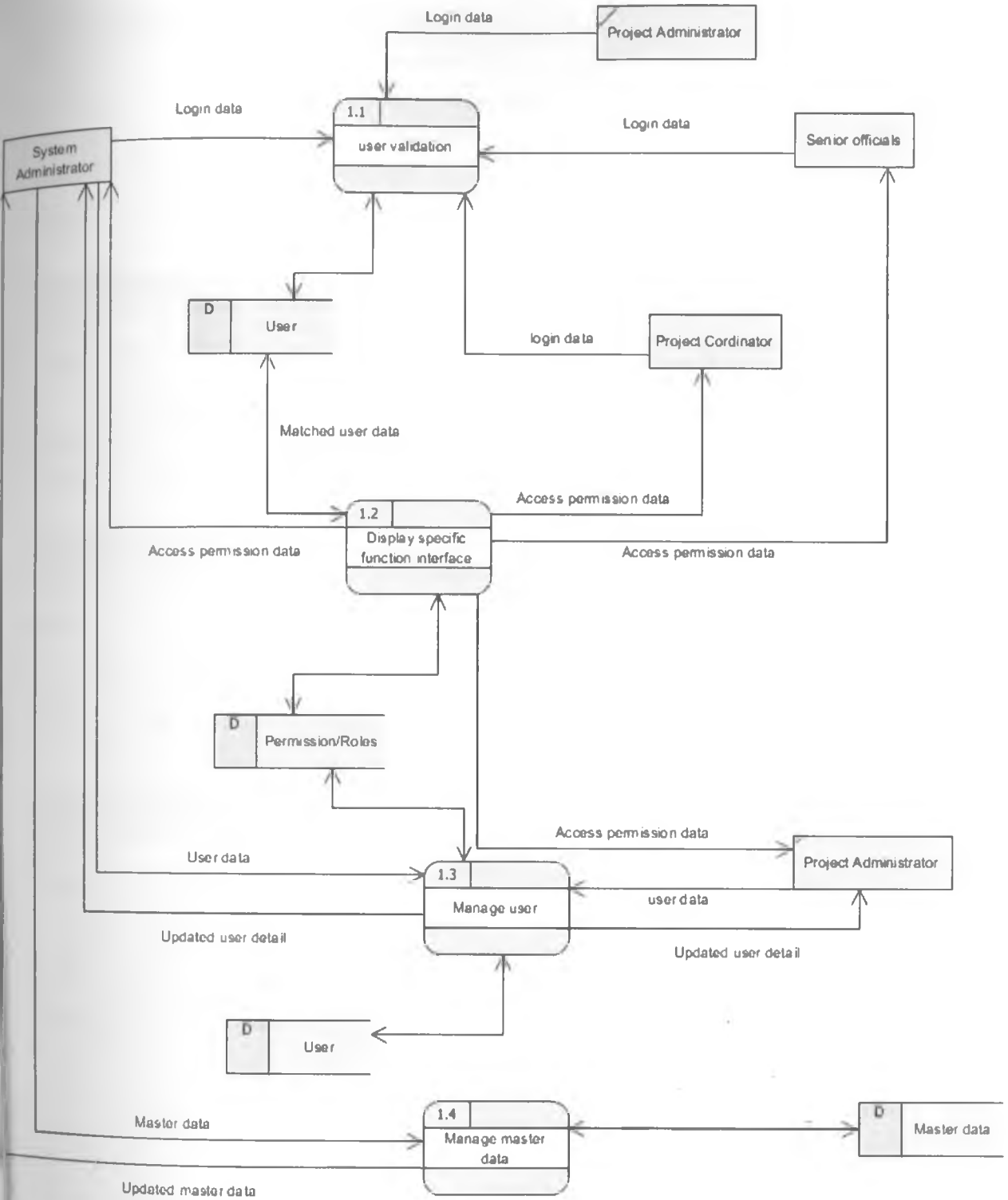
Input	access permission data, project data, task data, coordinator data, project event and discussion
Process	This is a sub process of the eProjectTracker for adding new projects and modifying existing projects. Project Administrators can assign new projects to project coordinators.
Output	Updated project details, Coordinator details, Task details

Table 5

PROCESS SPECIFICATION: 3 Report Project Progress Process

Input	Task Progress data, project status, project problem and related project file
Process	This is a sub process of the eProjectTracker that allows project coordinators to update the progress of tasks, add related project files, report problems on the assigned projects,
Output	Project progress report

Figure 10: DFD Level 1 for the User Management Process



DFD Level 1 Processes

PROCESS SPECIFICATION: 1.1 User Validation

Input	Login data (Username and Password), user data
Process	This is a sub-process of User Management process for receiving user data and verifying user authorization
Output	Matched user data

Table 7

PROCESS SPECIFICATION: 1.2 Display specific function interface

Input	Matched user data and permission/role
Process	This is a sub-process displays specific data for each user depending on their authorization
Output	Access permission data

Table 8

PROCESS SPECIFICATION: 1.3 Manage User

Input	User data
Process	This is a sub-process is used to add, delete, modify user information. This is accessed by system administrators and project administrators
Output	Access permission data

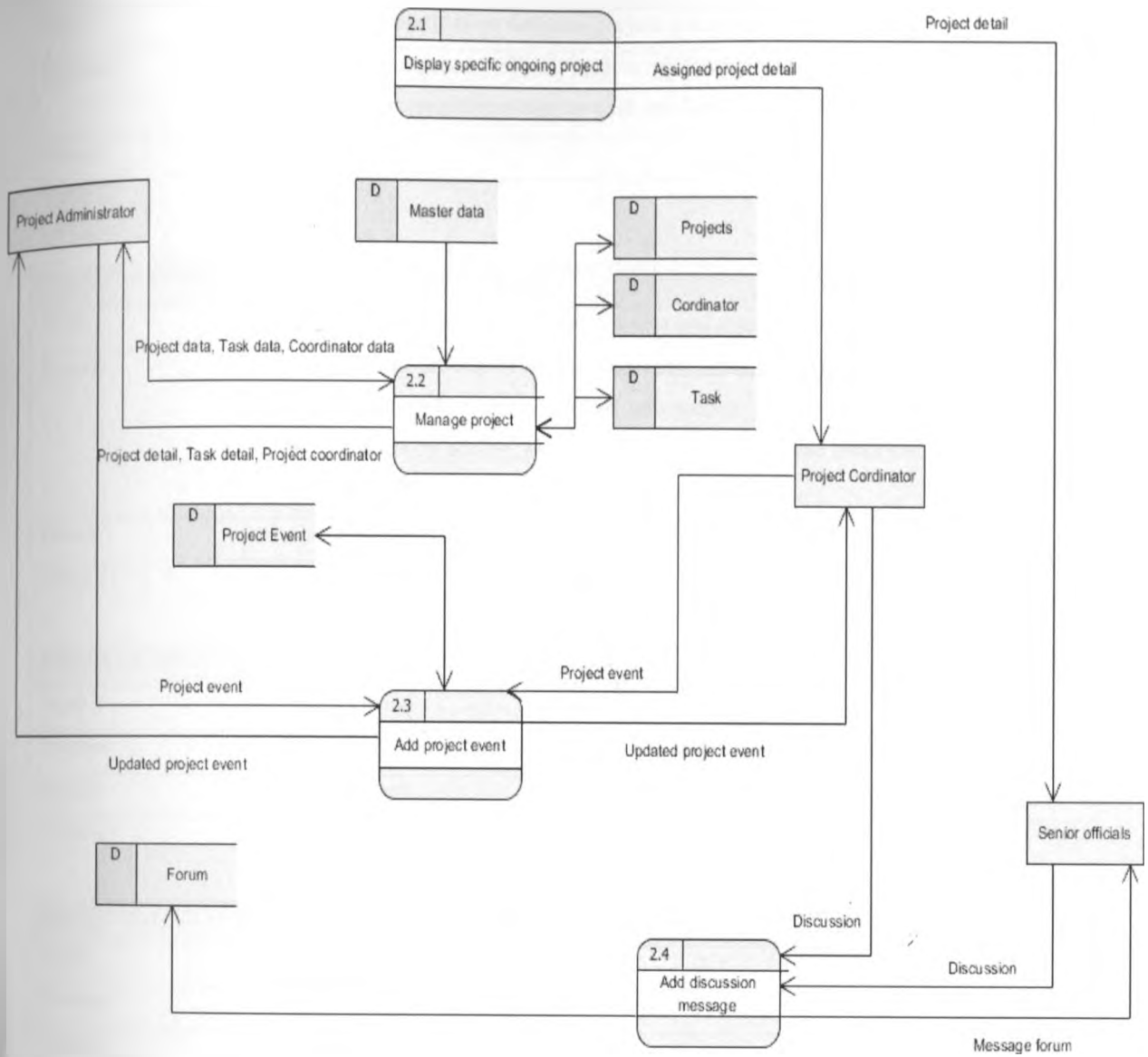
Table 9

PROCESS SPECIFICATION: 1.4 Manage Master Data

Input	master data
Process	This is a sub-process is used to add, delete, modify master data. This is accessed by system administrators.
Output	Updated master data

Table 10

Figure 11: DFD Level 1 for the Project Monitoring Process



Level 2 Processes

PROCESS SPECIFICATION: 2.1 Display Specific ongoing project

Input	Assigning permission data and project information
Process	This is a sub-process of the "project monitoring process" for showing specific ongoing projects depending on user level and responsibilities/access permissions
Output	Project detail

Table 11

PROCESS SPECIFICATION: 2.2 Manage Project

Input	project data, task data, coordinator data and master data
Process	This is a sub-process of the "project monitoring process" used by project administrators to projects and task information, update any change in project coordinators by adding, modifying data on projects and tasks and coordinator information.
Output	Updated Project detail, task detail, coordinator details

Table 12

PROCESS SPECIFICATION: 2.3 Add Project event

Input	Project event
Process	Used by project administrators and coordinators to update project events
Output	Project even

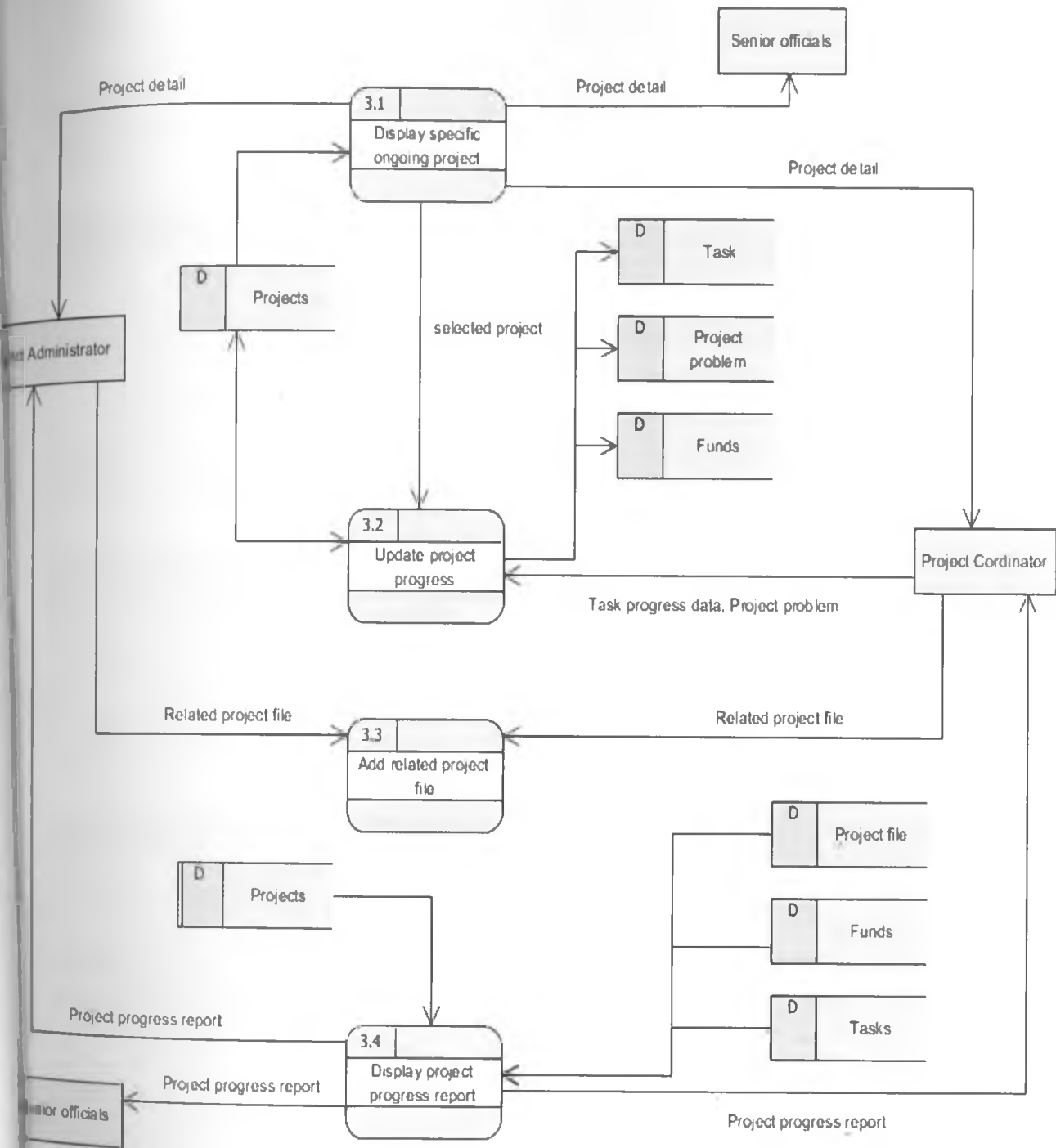
Table 13

PROCESS SPECIFICATION: 2.4 Add Discussion Message

Input	Discussion
Process	Users can view, access and add messages on their interested projects
Output	Project even

Table 14

Figure 12: DFD level 1 for the Project Progress Process



PROCESS SPECIFICATION: 3.1 Displays Specific On-Going Projects

Input	Assigning permission data and project information
Process	This is a sub-process of the project progress report process that displays project information based on user access permissions.
Output	Selected projects and project details

Table 15

PROCESS SPECIFICATION: 3.2 Update Project Progress

Input	Project data, project progress, project problem, task progress data, funds disbursement.
Process	This is a sub-process of the Project Progress Report Process. The project administrators use it to update project status and funding. Project coordinators use it to update task progress and project problems on the assigned projects.
Output	Updated project status, task progress, funding progress, project problem

Table 16

PROCESS SPECIFICATION: 3.3 Add Related Project File

Input	Related Project File
Process	Used by Project Administrators and coordinators to add any project related file
Output	Related project file (e.g. photos)

Table 17

PROCESS SPECIFICATION: 3.4 Display Project Progress Report

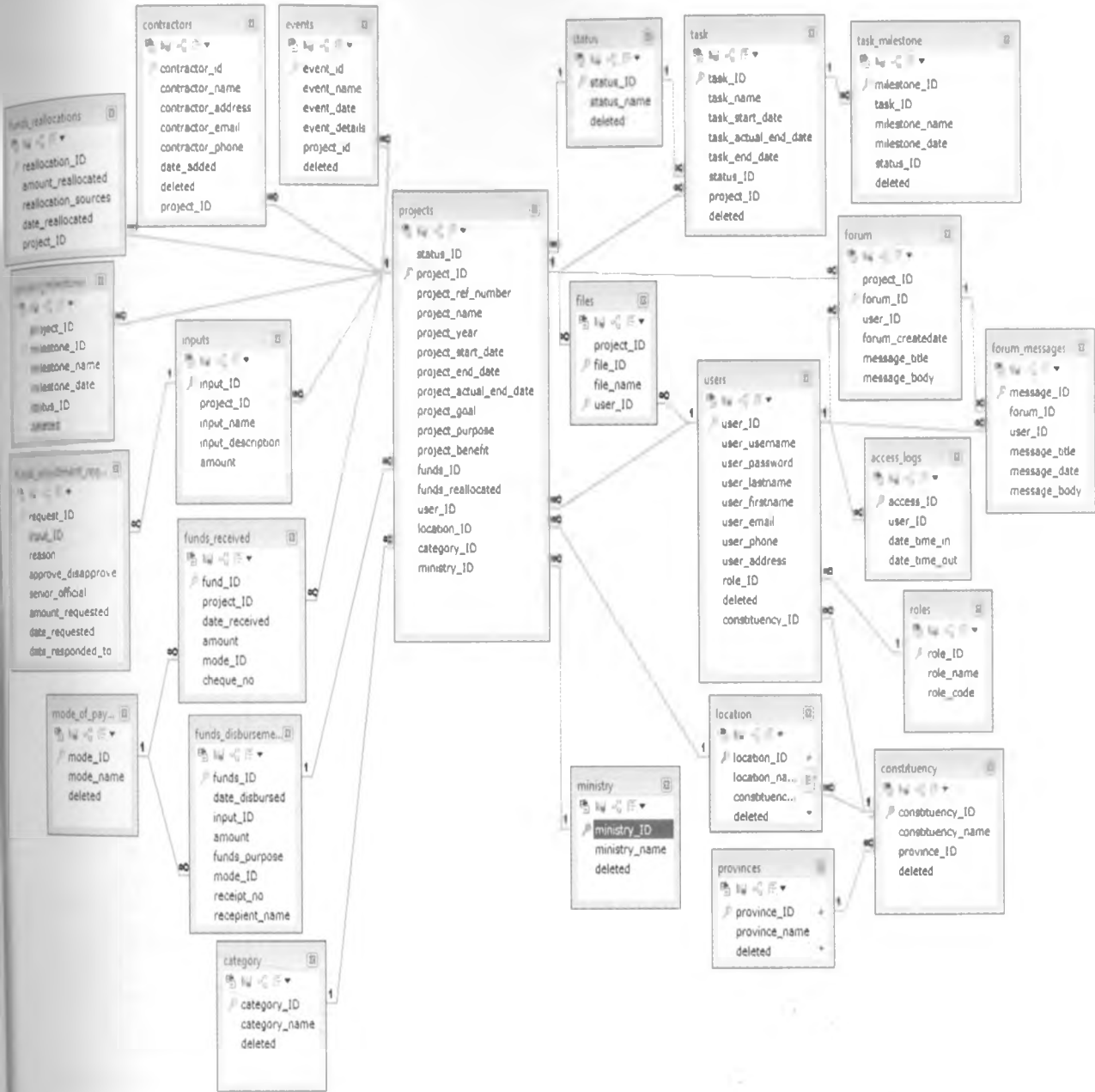
Input	Project Information, Task Information, Funding Information, Related project file
Process	This shows project progress data
Output	Project progress data

Table 18

Entity Behavior Modeling

This displays the ERD for the system with entities and their relationships.

Figure 13: Showing the Entity Relationship Diagram for the eProjectTracker



Logical Data Flow Model

This represents the flow of data into, out of, and between procedures, subsystems and systems.

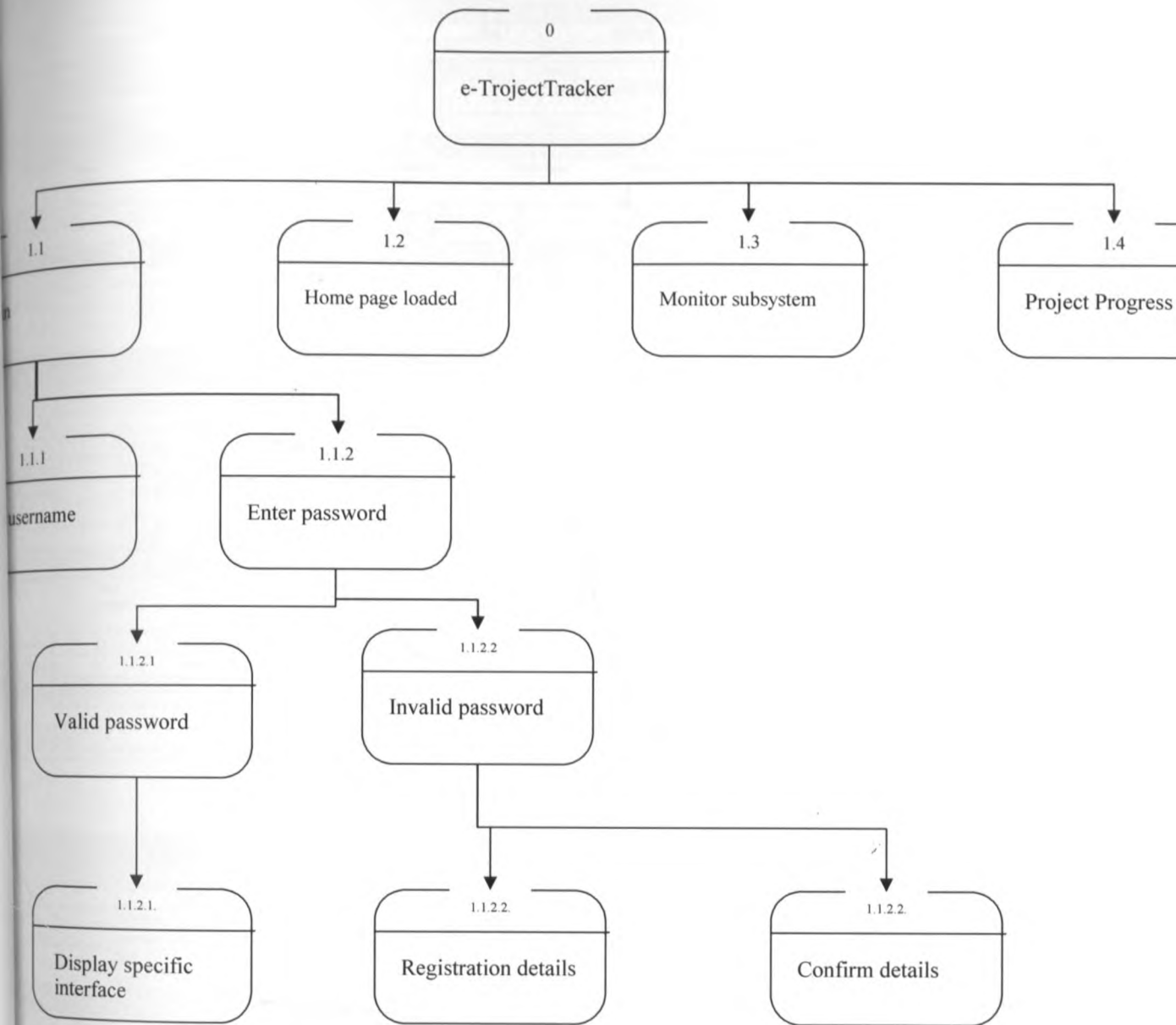


Figure 14: Data Flow Model for the eProjectTracker

Database schema

Figure 15: Showing the Database Schema for the eProjectTracker

Field	Type	Collation	Null	Key	Default	Extra	Privileges
id	int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
access_ID	int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
timestamp	timestamp	(NULL)	NO		CURRENT_TIMESTAMP	on update CURRENT_TIMESTAMP	select,insert,update,references
datetime	datetime	(NULL)	YES		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	access_ID	A	10	(NULL)	(NULL)		BTREE
1	user_ID	1	user_ID	A	5	(NULL)	(NULL)		BTREE

Key Relationships	Reference Table	Source Column	Target Column	Extra Info
users	users	user_ID	user_ID	ON DELETE CASCADE

Field	Type	Collation	Null	Key	Default	Extra	Privileges
re_allocation_ID	int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
allocated	double	(NULL)	NO		(NULL)		select,insert,update,references
resources	varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
created	date	(NULL)	NO		(NULL)		select,insert,update,references
int(11)	int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	re_allocation_ID	A	0	(NULL)	(NULL)		BTREE
1	FK_funds_reallocations	1	project_ID	A	0	(NULL)	(NULL)		BTREE

Key Relationships	Reference Table	Source Column	Target Column	Extra Info
re_allocations	projects	project_ID	project_ID	ON UPDATE CASCADE

Field	Type	Collation	Null	Key	Default	Extra	Privileges
constituency_ID	varchar(11)	latin1_swedish_ci	NO	PRI	(NULL)		select,insert,update,references
name	varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
int(11)	int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(1)	int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	constituency_ID	A	3	(NULL)	(NULL)		BTREE
1	province_ID	1	province_ID	A	3	(NULL)	(NULL)		BTREE

Key Relationships	Reference Table	Source Column	Target Column	Extra Info
provinces	provinces	province_ID	province_ID	ON UPDATE CASCADE

Field	Type	Collation	Null	Key	Default	Extra	Privileges
ID	int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
name	varchar(30)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
	int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	mode_ID	A	2	(NULL)	(NULL)		BTREE
0	PRIMARY	1	contractor_id	A	0	(NULL)	(NULL)		BTREE
1	project_ID	1	project_ID	A	0	(NULL)	(NULL)		BTREE

Reference Table	Source Column	Target Column	Extra Info
projects	project_ID	project_ID	ON DELETE CASCADE ON UPDATE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
timestamp	(NULL)	NO		CURRENT_TIMESTAMP	on update CURRENT_TIMESTAMP	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(250)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	forum_ID	A	3	(NULL)	(NULL)		BTREE
1	user_ID	1	user_ID	A	3	(NULL)	(NULL)		BTREE
1	project_ID	1	project_ID	A	3	(NULL)	(NULL)		BTREE

Reference Table	Source Column	Target Column	Extra Info
projects	project_ID	project_ID	ON DELETE CASCADE
users	user_ID	user_ID	ON DELETE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
timestamp	(NULL)	NO		CURRENT_TIMESTAMP	on update CURRENT_TIMESTAMP	select,insert,update,references
varchar(1000)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	message_ID	A	3	(NULL)	(NULL)		BTREE
1	forum_ID	1	forum_ID	A	3	(NULL)	(NULL)		BTREE
1	user_ID	1	user_ID	A	3	(NULL)	(NULL)		BTREE

Reference Table	Source Column	Target Column	Extra Info
forum	forum_ID	forum_ID	ON DELETE CASCADE
users	user_ID	user_ID	ON DELETE CASCADE

adjustment_requests

Field	Type	Collation	Null	Key	Default	Extra	Privileges
request_ID	int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
request_ID	int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
request_ID	varchar(250)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
request_ID	int(11)	(NULL)	NO		0		select,insert,update,references
request_ID	int(11)	(NULL)	NO		(NULL)		select,insert,update,references
request_ID	double	(NULL)	NO		(NULL)		select,insert,update,references
request_ID	date	(NULL)	NO		(NULL)		select,insert,update,references
request_ID	date	(NULL)	YES		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	request_ID	A	0	(NULL)	(NULL)		BTREE
0	request_ID	1	request_ID	A	0	(NULL)	(NULL)		BTREE
1	FK_funds_adjustment_requests	1	input_ID	A	0	(NULL)	(NULL)		BTREE

Reference Table	Source Column	Target Column	Extra Info
inputs	input_ID	input_ID	ON UPDATE CASCADE

Field	Type	Collation	Null	Key	Default	Extra	Privileges
request_ID	int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
request_ID	int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
request_ID	varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
request_ID	varchar(250)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
request_ID	double	(NULL)	NO		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	input_ID	A	0	(NULL)	(NULL)		BTREE
1	FK_inputs	1	project_ID	A	0	(NULL)	(NULL)		BTREE

Reference Table	Source Column	Target Column	Extra Info
projects	project_ID	project_ID	ON UPDATE CASCADE

Field	Type	Collation	Null	Key	Default	Extra	Privileges
request_ID	int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
request_ID	int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
request_ID	varchar(250)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
request_ID	int(11)	(NULL)	NO	PRI	(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
	PRIMARY	1	file_ID	A	2	(NULL)	(NULL)		BTREE
	PRIMARY	2	user_ID	A	2	(NULL)	(NULL)		BTREE
	user_ID	1	user_ID	A	2	(NULL)	(NULL)		BTREE
	project_ID	1	project_ID	A	2	(NULL)	(NULL)		BTREE

Reference Table	Source Column	Target Column	Extra Info
users	user_ID	user_ID	ON DELETE CASCADE
projects	project_ID	project_ID	ON DELETE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
date	(NULL)	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
double	(NULL)	NO		(NULL)		select,insert,update,references
varchar(1000)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
varchar(30)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	fund_ID	A	7	(NULL)	(NULL)		BTREE
1	project_ID	1	input_ID	A	7	(NULL)	(NULL)		BTREE
1	mode_ID	1	mode_ID	A	7	(NULL)	(NULL)		BTREE

Relationships	Reference Table	Source Column	Target Column	Extra Info
2	mode_of_payment	mode_ID	mode_ID	ON DELETE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
date	(NULL)	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO		(NULL)		select,insert,update,references
int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	milestone_ID	A	0	(NULL)	(NULL)		BTREE
1	FK_task_milestone	1	task_ID	A	0	(NULL)	(NULL)		BTREE

Relationships	Reference Table	Source Column	Target Column	Extra Info
	task	task_ID	task_ID	ON UPDATE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
date	(NULL)	NO		(NULL)		select,insert,update,references
double	(NULL)	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	fund_ID	A	12	(NULL)	(NULL)		BTREE
1	project_ID	1	project_ID	A	12	(NULL)	(NULL)		BTREE
1	mode_ID	1	mode_ID	A	4	(NULL)	(NULL)		BTREE

Relationships	Reference Table	Source Column	Target Column	Extra Info
	projects	project_ID	project_ID	ON DELETE CASCADE,
	mode_of_payment	mode_ID	mode_ID	ON DELETE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	ministry_ID	A	2	(NULL)	(NULL)		BTREE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(11)	latin1_swedish_ci	NO	MUL	(NULL)		select,insert,update,references
int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	location_ID	A	3	(NULL)	(NULL)		BTREE
0	constituency_ID	1	constituency_ID	A	3	(NULL)	(NULL)		BTREE

Relationships

Reference Table	Source Column	Target Column	Extra Info
constituency	constituency_ID	constituency_ID	ON UPDATE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(30)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	role_ID	A	4	(NULL)	(NULL)		BTREE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	province_ID	A	2	(NULL)	(NULL)		BTREE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
date	(NULL)	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO		(NULL)		select,insert,update,references
int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	milestone_ID	A	0	(NULL)	(NULL)		BTREE
1	FK_project_milestone	1	project_ID	A	0	(NULL)	(NULL)		BTREE

Key Relationships

Reference Table	Source Column	Target Column	Extra Info
projects	project_ID	project_ID	ON UPDATE CASCADE

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(30)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(30)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(30)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	YES		(NULL)		select,insert,update,references
varchar(15)	latin1_swedish_ci	YES		(NULL)		select,insert,update,references
varchar(100)	latin1_swedish_ci	YES		(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(11)	(NULL)	NO		0		select,insert,update,references
varchar(11)	latin1_swedish_ci	YES	MUL	(NULL)		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	user_ID	A	0	(NULL)	(NULL)		BTREE
1	constituency_ID	1	constituency_ID	A	2	(NULL)	(NULL)	YES	BTREE
1	role_ID	1	role_ID	A	8	(NULL)	(NULL)		BTREE

Relationships

Reference Table	Source Column	Target Column	Extra Info
constituency	constituency_ID	constituency_ID	ON UPDATE CASCADE
roles	role_ID	role_ID	

Type	Collation	Null	Key	Default	Extra	Privileges
int(11)	(NULL)	NO	PRI	(NULL)	auto_increment	select,insert,update,references
varchar(100)	latin1_swedish_ci	NO		(NULL)		select,insert,update,references
date	(NULL)	NO		(NULL)		select,insert,update,references
date	(NULL)	YES		(NULL)		select,insert,update,references
date	(NULL)	NO		(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(11)	(NULL)	NO	MUL	(NULL)		select,insert,update,references
int(1)	(NULL)	NO		0		select,insert,update,references

Non unique	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	task_ID	A	5	(NULL)	(NULL)		BTREE
1	status_ID	1	status_ID	A	6	(NULL)	(NULL)		BTREE
1	project_ID	1	project_ID	A	6	(NULL)	(NULL)		BTREE

Relationships

Reference Table	Source Column	Target Column	Extra Info
status	status_ID	status_ID	ON DELETE CASCADE
projects	project_ID	project_ID	ON DELETE CASCADE

Field	Type	Collation	Null	Key	Default	Extra	Privileges
	int(11)	(NULL)	NO	PR	{NULL}	auto_increment	select,insert,update,references
	varchar(30)	latin1_swedish_ci	NO		{NULL}		select,insert,update,references
	int(1)	(NULL)	NO		0		select,insert,update,references

Index name	Key name	Seq in index	Column name	Collation	Cardinality	Sub part	Packed	Null	Index type
0	PRIMARY	1	status_ID	A	4	(NULL)	(NULL)		BTREE

System Hierarchy

This shows the structure of the eProjectTracker

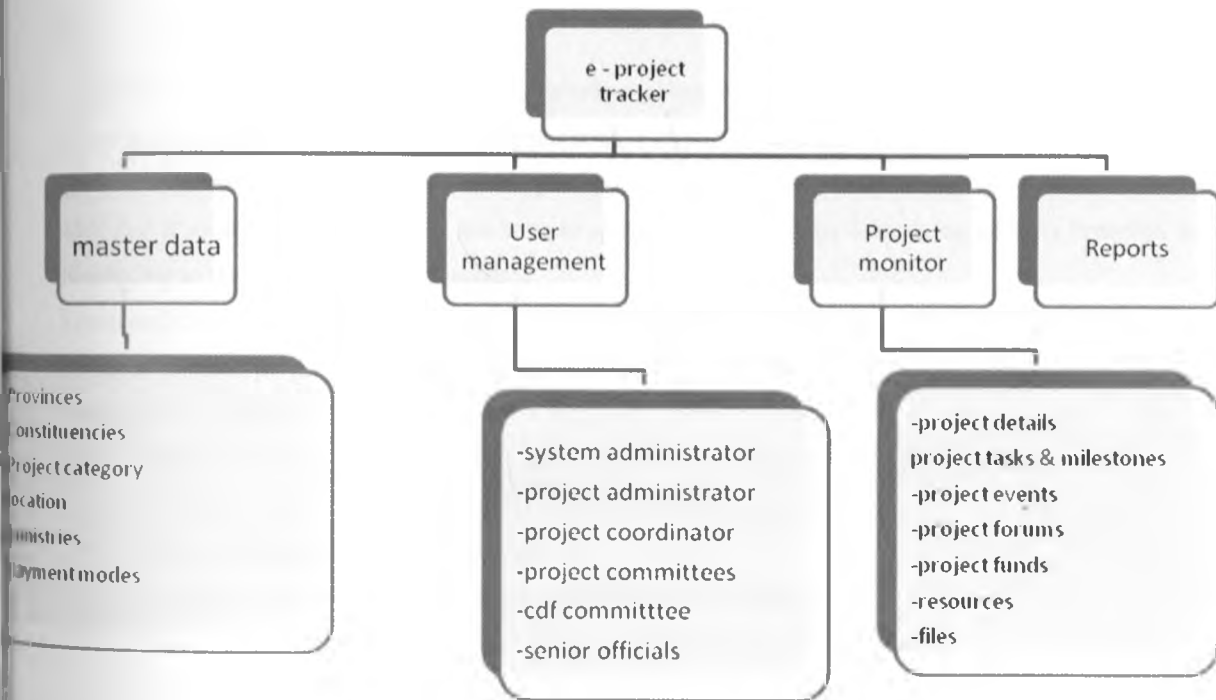


Figure 16: Showing the System Hierarchy for the eProjectTracker

CHAPTER FIVE: RESULTS

5.1 Implementation

The eProjectTracker was built for project monitoring. Users access the client side of the system.

The objectives of the system are:

1. Ensuring all components are in place i.e. software, hardware and personell.
2. System setup and installation
3. User training
4. Conducting evaluation of fulfillment of system requirements.

The tools used in this project are:

1. Operating System: Windows XP, windows 7
2. PHP
3. MySQL

5.2 Security Measures

According to Vacca (2009), any business, whether commercial enterprise or a not-for-profit business, would understand that building a secure organization is important to long term success. He says that when a business implements and maintains a secure posture, it can take advantage of numerous benefits. He further adds that a secure organization will not have to spend time and money identifying security breaches and responding to the results of those breaches.

Fagan and Olinger (1997) further add that when building any web-based application, the issue of security is always a concern. When an application is designed to allow the sharing of data across the Internet, security becomes one of the major topics.

They suggest that before building any web based application ask yourself the following questions:

1. Do users need to be defined to the system, or can anyone access it?
2. How will I store user ids and passwords?
3. Should users within the application be able to share information?
4. Are there parts of the application I want to restrict to only certain users?
5. Will the application reside only an intranet, or will it be available on the Internet?
6. Will data be sent across the Internet?
7. Are there other security requirements due to the nature of the application?

Therefore to meet these security concerns, I considered the following which have been implemented in the design of the eProjectTracker.

5.2.1 Users, their roles and privileges

All users of the system have been predefined namely, the project co-coordinator, project administrator, senior official, project committee and the public user. The roles and the privileges of each user have has

also been predefined hence any user who accesses the eProjectTracker system only gets to access what is only allowable to him/her

5.2.2 Access control layer (ACL) and permissions

In addition to the predefined roles and privileges, the access control layer restricts a user from accessing the resources not defined for him, for instance a project co-coordinator should be able to view projects assigned to him in a constituency and be able to edit the project's actual milestone dates. If he tries to access other resources not defined for him, the system detects this and prevents him from accessing them.

5.2.3 Login

Each user of the system is only able to access the resources predefined for him only when he logs into the system via their username and password. The password has been encrypted using the PHP's MD5 encryption technique such that in case anyone gets access to the database then it will be difficult to decipher the password codes. Furthermore, only the user can edit his/her username and password.

5.2.4 Access logs and Audit trail

All details of accesses to the system which includes the user who accessed the system, the time in and time out are saved into the database and only the system administrator has the right to view the access logs and he cannot edit or delete the same.

In addition, the audit trail keeps track of any changes to the system (the previous values), who made the changes and the time the changes were made. Only the system administrator has the privilege to view the audit trails.

5.2.5 Functional based security measures

Once the planned start dates and end dates for a projects are defined, they cannot be edited. The project co-coordinator/administrator are only allowed to edit the projects actual start date and end date.

In addition, the project funds cannot be edited by the users of the system. The project administrator has the right to reallocate surplus resources to other projects or request additional funds for a certain project which must be approved by the senior officials.

5.3 Choice of Programming language

In this project, two tools were used. These were:

1. PHP
2. Apache web server

The justification for using these tools are:

- a. PHP is one of the most popular server side scripting language. PHP offers many advantages; it is fast, stable, secure, easy to use and open source (free).
- b. PHP does not use a lot of the system resources so it runs fast and doesn't tend to slow other processes down.

- c. PHP offers many levels of security to prevent malicious attacks. These security levels can be adjusted in the .ini file.
- d. PHP uses a modular system of extensions to interface with a variety of libraries such as graphics, XML and encryption.
- e. MySQL integrates seamlessly with a number of programming languages and other web-based technologies as compared with MS SQL Server.
- f. MySQL is the clear leader in terms of performance compared to MSSQL Server. The default table, MyISAM leaves a small footprint using a small disk space, memory and CPU. The MySQL also comes with directions on how to apply security patches updates.

5.4 Testing

This is done to establish system defects in programs and to find out if system can be applied in real life. It also helps to find errors in logic and bugs.

Test Process: the test process usually follow the cycle below

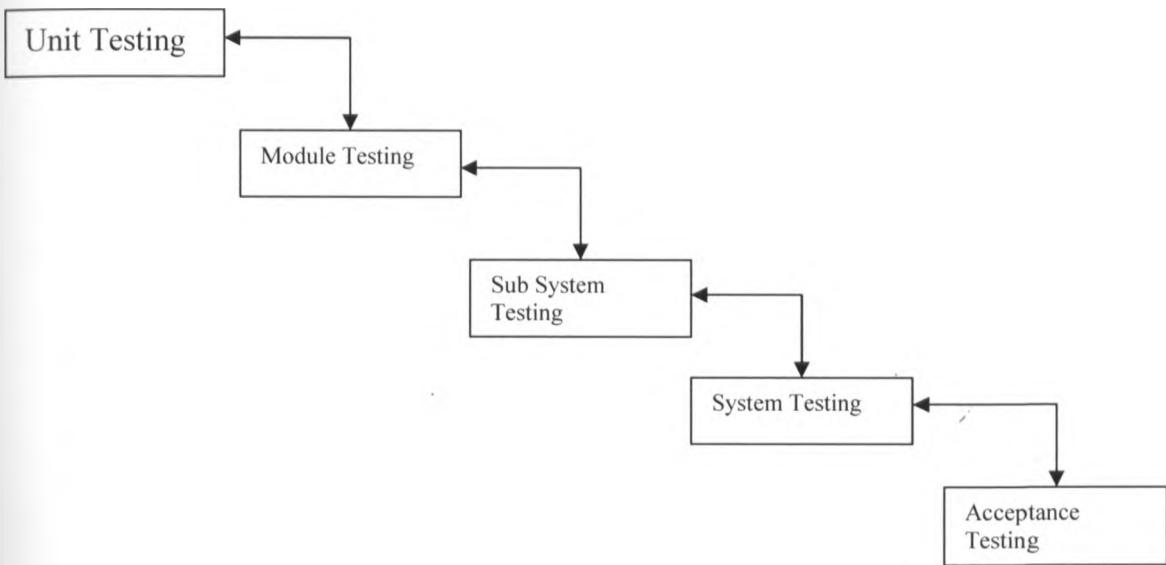


Figure 17: System Testing Process

5.4.1 Unit Testing

This tests each module independently to verify if detailed design for unit has been correctly done. It helps to isolate each module and find out if each module is singly correct.

5.4.2 System Testing

This is based on requirements and encompasses.

- a) Functional system requirements testing

b) Non-Functional system requirements testing

Functional System Testing

Functionality testing is performed to verify that a software application performs and functions correctly according to the design specifications. This process is carried out to that the meets the intended specifications. In this project, functionality testing was done to ensure the end products has minimum amount of issues and the solution is bug free.

The functionality test plan for the eProjectTracker was divided into two (2) parts: functionality and application specific requirements. I will highlight some of the items that were considered in each of these.

i) Functionality

a) Links

- Check that the link takes you to the right page.
- Ensure there are no orphan pages (a page that has no links to it)

b) Forms

- Acceptance of invalid input
- Optional versus mandatory fields
- Input longer than field allows
- Default values on page load/reload
- Are all the data inside combo/list box arranged in chronological order?
- Does a scrollbar appear if required?

c) Data Verification and Validation

Verification and Validation start with requirements reviews and continues through design and code reviews through to product testing.

Validation seeks to answer whether we are building the right product. Validation is the degree to which goals are achieved and is concerned with system output.

Verification seeks to answer if we are building the product right. It is the degree to which inputs are implemented to achieve the right outputs.

The steps in this section will include:

- Verify that at no point of time the system should behave awkwardly when an invalid data is fed.
- Check to see what happens if a user deletes cookies while in site.
- Check to see what happens if a user deletes cookies after visiting a site

ii) Application specific functional requirements

a) Data integration

- Check the maximum field lengths to ensure that there are no truncated characters?
- Do numeric fields accept negative values and can these be stored correctly on the database.

- If a set of data is saved to the database, does each value gets saved fully to the database
i.e. check truncation and rounding of numeric values

b) Date field checks

- Are leap years validated correctly & do not cause errors/miscalculations.
- How are dates represented?

c) Numeric fields

- Are lowest and highest values are handled correctly?
- Are numeric fields with a blank in position 1 processed or reported as an error?
- Are fields with a blank in the last position processed or reported as an error?
- Assure that division by zero does not occur.
- Are upper and lower values in ranges handled correctly?

d) Alphanumeric field checks

- Use blank and non-blank data.
- Include lowest and highest values.
- Include invalid characters & symbols.
- Include valid characters.
- Include data items with first position blank.
- Include data items with last position blank.

Non Functional Testing

This tests aspects as ease of use and performance. The test involved finding out if system is cumbersome to use, has a high response time. These then make a system 'fit for purpose'.

5.4.3 Acceptance Testing

This is a formal testing conducted to enable a user, customer or authorized entity to determine whether to accept a system. It's testing deliverable for acceptability by the user of that deliverable. It is a process which attempts to determine, as systematically and objectively as possible, the relevance, effectiveness, efficiency, and impact of the software in the context of its stated objectives.

Questionnaires will be used for gathering and evaluating users' satisfaction.

After completing testing, users will be asked to evaluate the system and give the following scores; excellent, good, fair, or poor. The evaluators of the system will be the people who are expected to interact more with the system. These were:

- System Administrators
- Project Administrators
- Project Coordinators
- Projects Committee

The other tests done on the system are:

5.4.4 Web Browser Testing

The system was tested and works well with the following browsers:

Internet Explorer 6.0, 7.0

Mozilla Firefox

This was done to ensure compatibility with all browsers.

5.4.5 Scripting Language Testing

The scripting Language is responsible for computations in the eProjectTracker. It's also responsible for intercepting erroneous input from the user.

In the testing process, both valid and invalid data was intentionally entered and breakpoints used to ensure that data processing follow correct paths.

5.4.6 Database Connectivity

The back end of the system is running on MySQL database management system. The database is invoked using the PHP scripting language. The database management tools were used to inspect if insert, update and delete actions was correctly committed to the database.

CHAPTER SIX: CONCLUSION

6.0 Evaluation of the system

Evaluation is a process which attempts to determine, as systematically and objectively as possible, the relevance, effectiveness, efficiency, and impact of the software in the context of its stated objectives.

Questionnaires were used for gathering and evaluating users' satisfaction.

After completing testing, users are asked to evaluate the system and give the following scores: excellent, good, fair, or poor.

The evaluator group is divided into three sub groups:

- 1) System Administrators
- 2) Project Administrators
- 3) Projects Committee

In the first group, there are 3 people who are information technology officials of the CDFB. In the second group, there are 4 people who are officials selected from four constituencies in Nairobi. Finally, the third group consists of 3 persons who are project committee members of the CDFB.

The questionnaires from the groups were compiled in a table as below:

Evaluation Topic	Excellent	Good	Fair	Poor
Web Interface				
➤ Appearance and appropriateness of screens, buttons, tabs	4	4	1	1
➤ Sequence of data entry	6	3	1	0
➤ Convenience of data entry	5	3	2	0
Overall for Web Interface	50.0%	33.3%	13.3%	3.3%
System Performance				
➤ Ease of use	4	5	1	0
➤ Accuracy and consistency of result	5	3	2	0
➤ Response time	4	4	1	1
➤ Security of data	4	3	2	1
Overall for System performance	42.5%	37.5%	15.0%	5.0%
System Satisfaction				
➤ How useful are the reports	5	3	2	0
➤ How suitable and useful is the system for managing projects?	6	2	1	1
Overall for System Satisfaction	55.0%	25.0%	15.0%	5.0%

Table 19: Showing user acceptance evaluation results

A closer look at the evaluation reveals that a majority of the people are pleased with the system. It can therefore be concluded that this system was acceptable and effective in providing convenience and ease of managing and monitoring the CDF Projects.

The eProjectTracker has been developed to monitor the implementation progress of CDF projects in Kenya. This system is to be used to ensure efficiency and transparency in implementation and involve the public who are the beneficiaries of the projects.

The system has been tested with real data currently held by the board. The system takes the inputs, processes them and returns the correct output.

The design of this system has resulted in re-engineering of the project monitoring process by the CDF Board. The re-engineering has been done to include best practice in project monitoring with the implementation of the project monitoring framework in the design of the eProjectTracker.

To show that the system was acceptable and effective by supporting the operation of the CDF Board in project monitoring procedure, the system was tested by comparing with the manual processes. The result can be concluded that this system will shorten operation time and processes more data than the manual one.

This is illustrated in the table below:

Table 20: Comparison between manual processing and using the web-based project monitoring system

Process	Manual System	eProjectTracker System
Request project information or track project progress	<ul style="list-style-type: none"> • Inform to the project coordinator of the project needs. • Search project documents <ul style="list-style-type: none"> - [data documentary] Search from hard copy documents or files within 3hrs – 5hrs. - [no data] The CDFB officials have to request data from the project Administrators in the constituencies took at least a day. • Retrieve relevant document 	<ul style="list-style-type: none"> • Look for specific project • Data is available in less than 1 minute
Report projects progress	<ul style="list-style-type: none"> • The Projects Officer sends request to the projects administrators. • The Project Administrators will request the project coordinators for progress report from fields. 	<ul style="list-style-type: none"> • The project coordinators can update the progress of project or upload project files directly at anytime from anywhere through internet. • The CDF Board can monitor projects progress online,

	<ul style="list-style-type: none"> • Gathering the projects reports can take 2 weeks- 1 month on the average. • The Project Administrators send reports to the CDF Board. • The CDF Board Projects committee will then summarize the reports and then offer the senior officials and the process will take at least 30 days. 	<ul style="list-style-type: none"> • select the report needs to print out, and download related project file • Senior officials can access and monitor the project progress directly from anywhere.
--	---	---

It can be concluded from this analysis that this system is acceptable and effective in providing convenience and ease of managing and monitoring the CDF Projects.

The system has the following advantages:

- Determine whether the project is being implemented efficiently and effectively to achieve the intended objectives.
- Facilitate to examine the implementation efficiency and effectiveness of the project.
- Identify problems, issues and constraints that affect implementation and provide early warning signals when programs are not going as planned.
- It helps to control expenditure of funds on projects thus preventing cost overruns. The system cannot allow funds to be disbursed to projects over and above budgets
- It helps monitor the task progress against time thus preventing time overruns
- It ensures that needed information on project implementation is available in real time.

6.1 Objectives and Achievements

The main objective of this project was to design a web based project monitoring system that will ensure efficiency of the CDF Board Secretariat. This has been achieved with the development of eProjectTracker.

The system is capable of capturing data on project profile, project implementation information, project funding and funds disbursement, public comments on project implementation and personnel charged with project implementation.

The development of this system has demonstrated that project monitoring can be done in an effective and efficient manner using technology. This web based system can be adapted to facilitate project monitoring in governments, private sector, non-governmental organisations and government agencies and departments.

The system makes it possible to have the much needed information available when needed.

6.2 Limitations

The implementation of the eProjectTracker may be limited by supporting infrastructure needed for the system to be fully functional. Of particular is the spread and availability of internet access. The system requires availability of internet connectivity 24/7 to support connection to the server.

The CDF Board Secretariat may have internet access but the constituency headquarters may not have the connection.

For the success of this, internet connection needs to be present in each constituency headquarters.

6.3 Recommendation

The eProjectTracker is a viable project for each institution implementing development projects scattered across territories. It allows for monitoring progress at the comfort of ones office. The system can be improved further or customized to meet individual organizational needs not covered in this system.

6.4 Further Work

Although the system facilitates project monitoring, there is need to extend it to cover evaluation of projects once completed. This would ensure it gives feedback on the benefits realized with each project.

There is also a need to include the e-tendering process in the system to improve the process of choosing contractors for projects. This would help eliminate favoritism witnessed in awarding contracts.

Furthermore, there is need to develop a system that manages the whole aspect of project management from project initiation to project close out.

6.5 Conclusion

In this study, project monitoring system for the CDF Board has been developed using the principles, procedures, and tools of structured system analysis and design. This system has been implemented using frameworks for Project monitoring. The purpose of this system is to support the operation of the CDFB officials regarding project implementation progress monitoring of the CDF Projects. The Structured Systems Analysis and Design Methodology (SSADM) was used to create the system. PHP and MySQL were used to develop the web application and the database respectively.

Security of the system is protected by a simple password-based authentication mechanism. Authorized users are divided into four groups; they are System Administrators, Project Administrators, Project Coordinators, and Senior Officials of the CDFB. An access matrix for the entire system has been developed for each category of users. Thus users can only access what they have been permitted to thus preventing unauthorized access to system functions.

Questionnaires were used for gathering users' evaluation scores and opinions about the system. Ten evaluators who are involved in the monitoring and implementation of CDF Projects were asked to complete

the questionnaires. It can be summarized that the user's evaluation on web interface, system performance and overall satisfaction is quite positive.

Finally, it can be concluded that this project achieves its goal of developing a tool that can be used by the CDF to monitor the implementation of CDF Projects efficiently.

The resulting application was found to satisfactorily support the CDFB officials in updating project data, monitoring the progress of the projects, accessing information quickly and conveniently, and helping the project managers in making decisions. The system also makes it possible to get all data about projects in real-time to all who need them for decision making.

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8.0 APPENDICES

8.1 User Guide and Installation Manual

eProjectTracker Overview

e-ProjectTracker - is a large database system that can be used for monitoring implementation progress any project. It Allows users to store almost all of their projects information electronically, including information on project inputs, goals, purpose, outputs, milestones, project events.

Most importantly, this information can be easily shared with authorized users, records can be easily searched, and reports can be easily generated.

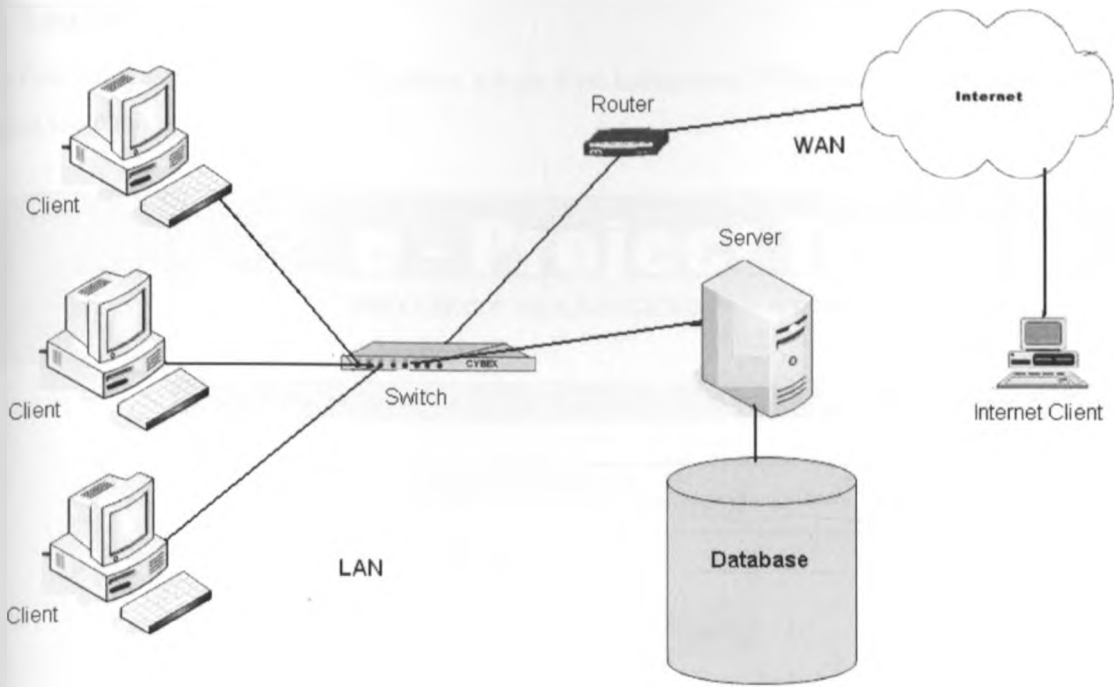
e-ProjectTracker is configurable and can be configured to meet the needs of any organization implementing any kind of project. It is a multi-user system and can be used by hundreds of users at same time. General speaking, it is platform running on a Local Area Network (LAN) and Wide Area Network (WAN).

If the e-ProjectTracker server is configured to be a public server - with a static IP or domain name - it would not have a boundary limitation. Wherever any user is, once you have an Internet connection, you can logon to the e-ProjectTracker server easily just the same as if you were sitting in your organizations office office. However, the speed limitation is up to both your client's and server's Internet speed.

eProjectTracker Technical Overview

The e-ProjectTracker System is a 3-tier application. It's been built using PHP and supports large database management system in SQL Server or MySQL.

The first tier of the system is client which is a windows application with rich user interface. End users use it to browse, search, enter records and print reports. The middle tier is e-ProjectTracker server, which technically speaking is a web server, plays a middle-man role between clients and the database. It contains all business rules and all clients' requests will be processed by the server and finally store or retrieve data to or from the database. However, it is an invisible part compared with the client and end users may never know it exists. The last tier is DBMS – the database management system. It is third-party software- MySQL and it is where your projects information will be stored



System Requirements

Minimum e-ProjectTracker Client Requirements

- Intel Pentium CPU 800MHz or 100% compatible. We strongly recommend 1200MHz or above
- 256 MB RAM. I strongly recommend 1GB RAM or above
- 200 MB free disk space or greater
- Microsoft Windows XP or later.
- Microsoft Internet Explorer version 8 or higher is highly recommended or Mozilla Firefox

Minimum SMS Server Requirements

- Intel Pentium CPU 1200MHz or 100% compatible. I strongly recommend 2GHz or above.
- 2GB RAM. I strongly recommend 4GB or above depending on scale of access
- 10GB free disk space or more (depending on how much data you will have)
- Microsoft Windows 2003 Server or later. Windows XP Professional or windows 7 could be used for small organizations. However, we recommend Windows 2003 Server or Windows 2008 Server.

Login in.

The first time a user tries to access the system, a login form is displayed. Fill in the login details and click on Login Button to submit.

e - Project Tracker

PROJECT MANAGEMENT SYSTEM (PMS)

i Please login to use the system

Username

Password

PROJECT MANAGEMENT SYSTEM ©2011

The user is directed to the homepage of the system

- Dashboard
- Master Data
- Administration
- Reports
- Profile
 - Edit profile
 - Edit login details

Projects

Project	Project-Ref_Number	Project Purpose	Constituency				
Chepkube Dispensary	168/1	It should cater for all medical conditions including surgery	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee
Cheoyuk water project	168/2	Provide clean and hygienic water to the people	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee
Dandora Sec School Dormitory	007/3	Make the school a boarding school	Embakasi	View contractors	Add contractors	Add Project Committee	View project committee
KMbaya - Bushifu Road	156/4	Rehabilitate the road	Lugari	View contractors	Add contractors	Add Project Committee	View project committee
Tausa Water Project	029/5	To meet water demands	Voi	View contractors	Add contractors	Add Project Committee	View project committee
Mokowe Sec School	025/6	increase educational infrastructure	lamu West	View contractors	Add contractors	Add Project Committee	View project committee
Stella	168/7	increase seat capacity	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee

Master data

Click at the **Master Data** menu item to display a list of available master data.

- Dashboard
- Master Data**
- Provinces
- Constituencies
- Locations
- Ministries
- Project Status
- Payment Modes
- Project categories

Projects							
Project	Project Ref. Number	Project Purpose	Constituency				
Chepkube Dispensary	168/1	It should cater for all medical conditions including surgery	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee
Chepyuk water project	168/2	Provide clean and hygienic water to the people	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee
Dandora Sec. School Dormitory	007/3	Make the school a boarding school	Embakasi	View contractors	Add contractors	Add Project Committee	View project committee
K/Mbaya - Bushifu Road	156/4	Rehabilitate the road	Lugari	View contractors	Add contractors	Add Project Committee	View project committee
Tausa Water Project	029/5	To meet water demands	Voi	View contractors	Add contractors	Add Project Committee	View project committee
Makowe Sec School	025/6	Increase educational infrastructure	Jamu West	View contractors	Add contractors	Add Project Committee	View project committee
Stella	168/7	Increase seat capacity	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee

The available master data list includes

- a. Provinces
- b. Constituencies
- c. Locations
- d. Ministries
- e. Project status
- f. Payment modes
- g. Project categories

view Master Data

Select the master data to add from the list by clicking at it. All items in the master data are displayed (for our case we clicked at Constituencies).

Master Data

Provinces

Constituencies

Locations

Ministries

Project Status

Payment Modes

Project categories

Constituency Name	Constituency Number	Province						
Embakasi	007	Nairobi	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Kisumu	010	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Iamu West	025	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Voi	029	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Eldoret East	118	Rift Valley	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Baringo Central	130	Rift Valley	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Subia	140	Rift Valley	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete

Add Master Data

Click at the **Constituency** link. The master data form for the specific item is displayed (for our case constituencies).

Add New Constituency

Constituency Number:
Enter the constituency number.

Constituency Name:
Enter the name of the new Constituency.

Province: ▼
Select the Province under which the new Constituency lies.

Fill in the constituency details and click on Save to submit.

Master Data

Provinces

Constituencies

Locations

Ministries

Project Status

Payment Modes

Makadara Constituency added successfully

Constituency Name	Constituency Number	Province						
Embakasi	007	Nairobi	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Kisumu	010	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Iamu West	025	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Voi	029	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Makadara	067	Nairobi	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete

The new constituency is added successfully.

Edit Master Data

Click at the Edit at the row containing the master data item to be edited. A form containing the existing details is displayed

Edit Constituency

Constituency Number:
Enter the Constituency number.

Constituency:
Enter the name of the new Constituency.

Province:
Select the Province under which the new Constituency lies.

Fill in the update details and click on update master data item to submit the values. The submitted values are saved to the database.

- Master Data
- Provinces
- Constituencies
- Locations
- Ministries

Constituencies

Constituency details updated successfully

Constituency Name	Constituency Number	Province						
Embakasi	007	Nairobi	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Kisumu	010	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete
Ilamu West	025	Coast	View Projects	View Locations	View CDF Committee	Add Committee member	Edit	Delete

Delete Master Data

Click at the delete link at the row where the 'to be deleted item is located'. A confirmation form is displayed.

Confirm Delete Action

Do you really want to delete Rift Valley province?

By confirming yes. The item is deleted

- Master Data
- Provinces
- Constituencies
- Locations
- Ministries
- Project Status

Provinces

Rift Valley Province deleted successfully

+Province				
Name				
Nairobi	View Projects	View Constituencies	Edit	Delete
Western	View Projects	View Constituencies	Edit	Delete
Coast	View Projects	View Constituencies	Edit	Delete
Rift	View Projects	View Constituencies	Edit	Delete
Eastern	View Projects	View Constituencies	Edit	Delete

User Management

Add users

Click Dashboard link under the sub menu items

- Dashboard**
- [View All Projects](#)
- [Add Project admin](#)
- [View Project admins](#)
- [Add Project coordinator](#)
- [View Project coordinators](#)

Projects

Project	Project Ref Number	Project Purpose	Constituency				
Chepkube Dispensary	1681	It should cater for all medical conditions including surgery	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee
Chepyuk water project	1682	Provide clean and hygienic water to the people	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee
Dandora Sec School Dormitory	0073	Make the school a boarding school	Embakasi	View contractors	Add contractors	Add Project Committee	View project committee
KIMbaya - Bushifu Road	1564	Rehabilitate the road	Lugari	View contractors	Add contractors	Add Project Committee	View project committee
Tausa Water Project	0295	To meet water demands	Vol	View contractors	Add contractors	Add Project Committee	View project committee
Makowe Sec School	0256	Increase educational infrastructure	Isimu West	View contractors	Add contractors	Add Project Committee	View project committee
Stella	1687	Increase seat capacity	Mt Elgon	View contractors	Add contractors	Add Project Committee	View project committee

Select the add user option (in this case) [Add project administrator](#). A user details form is displayed.

Add a new constituency project administrator

First Name:
 Last Name:
 Phone Number:
 Email:
 Address:
 Constituency:
 Username:
 Password:
 Confirm Password:

Create User!

© 2008 Project Admin. All rights reserved.

Fill in the user details and click on submit. The user details are stored

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

! User added successfully

Project administrators

First Name	Last Name	Phone	Email	Address	Constituency			
Paul	Kemende	0723456789	paul@project-admin.com	24234 Embakasi	Embakasi	Edit	Change role	Delete
Benson	Kemau	0723456789	kemau@project-admin.com	234 Lugari	Lugari	Edit	Change role	Delete
Washington	Omoito	0721583077	washington@project-admin.co.uk	Box 42276	Voi	Edit	Change role	Delete
James	Oluonga	0734879275	oluonga@yahoo.com	Box 45376- Kisii	Iamu West	Edit	Change role	Delete
Julius	mwachai	0728560893	juli@yahoo.com	p.o Box 24234 Nyeri	Iamu West	Edit	Change role	Delete

View Details

Edit user

Click at Edit link under the user row to edit a user (In this case a Project Administrator).The Edit User Details Form is displayed

Edit User Details

First Name:

Last Name:

Phone Number:

Email:

Address:

Constituency:

Fill in the user details updates and click on confirm button to submit the values. The updates are saved to the system.

Delete a User

To delete a user, click at the delete link on the row that the user details reside. A confirm delete form is displayed.

Delete User: Paul Kamande ?

Click on confirm button to delete the user. The user details are deleted from the system

- Dashboard
- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator

User deleted

Project administrators

First Name	Last Name	Phone	Email	Address	Constituency	Edit	Change role	Delete
Benson	Kamau	0723456789	kamau@yahoo.com	234 Lugari	Lugari	Edit	Change role	Delete
Washington	Omallo	0721583077	nickywash@yahoo.co.uk	Box 42276 -	Voi	Edit	Change role	Delete
James	Onuongo	0734879275	onuongo@yahoo.com	Box 45376- Kish	Iamu West	Edit	Change role	Delete
Julius	mwachi	0726560893	juli@yahoo.com	p o Box 24234,Nyeri	Iamu West	Edit	Change role	Delete

Project Administration

Create Project

Under view all projects, click on the Add Project menu item.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project Name	Province	Constituency	Location	Project Coordinator	Project purpose	Start Date	End Date
Stella	Rift Valley	Mt Elgon	Chepkube	Jeremy Kirwa	increase seat capacity	2011-01-19	2011-12-12
Mokove Sec School	Coast	Iamu West	Mapeya	Onuongo James	increase educational infrastructure	2010-09-08	2010-12-01
Tausa Water Project	Coast	Voi	Mbolio	Samaon Katana	To meet water demands	2010-09-08	2011-07-07
KMbaye - Bushifu Road	Western	Lugari	Sinoko	Koki kiko	Rehabilitate the road	2010-05-18	2011-12-12
Dandora Sec. School Dormitory	Nairobi	Embakasi	Kayole	Samuel Onyao	Make the school a boarding school	2011-01-25	2012-01-01
Chepyuk water project	Rift Valley	Mt Elgon	Kapsiro	Jeremy Kirwa	Provide clean and hygienic water to the people	2012-01-27	2013-01-01
Chepkube Dispensary	Rift Valley	Mt Elgon	Chepkube	Jeremy Kithome	It should cater for all medical conditions including surgery	2011-01-21	2012-12-12

A Create project form is displayed. Fill in the details of the Project

Create Project

Project Name: Masai mara road construction
Enter the name of the project

Project Period: 2011 - 2012
Select the Period the project is meant for

Project Ministry: Ministry of Roads and transport
Select the Ministry under which the project lies

Project Location: Chepkube
Select the Location where the project is being undertaken

Project Start Date: 2011-02-25
Select the starting Date of project to start

Project End Date: 2012-12-12
Select the ending Date of project to end

Project Status: Not Started Yet
Select the Current status of the project

Project Coordinator: Jeremy Kirwa
Select the Project Coordinator

Project Category: Roads
Select the Category of the project

Project Goal: build road
Enter the overall Goal for the undertaking the project

Project Purpose: enable easy passing
Enter the purpose for undertaking the project

Project Benefit: all
Enter the Benefit for undertaking the project

Save

And click on the save button to save the project. The page redirects to the Create a project task form. Fill in the details of the Task milestone and click on save button to create the project and its milestone.

Projects Project Details Tasks Milestones **Task** Reports Budget Management Milestones **Create Project**

Task

Create a Task for the Masal mara road construction Project

Task Name:

Task Start Date:

Task End Date:

Task Status:

The project details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Master Data

Administration

Reports

Tools

Projects Project Details Tasks Milestones Events Forums Profile Fund Adjustment Requests

Masal mara road construction Project

Masal mara road construction Project created successfully

18878

Project Name	Masal mara road construction (Task Project)
Project Year	2011 - 2012
Ministry Name	Ministry of Roads and transport
Location	Chapkube
Start Date	2011-02-25
End Date	2012-12-12
Status	Not Started (Change)
Project Coordinator	Kirwa Jeremy
Project Category	Roads
Project Goal	build road
Project purpose	enable easy passing
Project Benefit	all

Budgeted Amount	Total Funds received	Total Funds Disbursed
0	0	0

View Project details

Under view all Project page, click on the Project Name link to view the details of the project.

Dashboard

- [View All Projects](#)
- [Add Project admin](#)
- [View Project admins](#)
- [Add Project coordinator](#)
- [View Project coordinators](#)

Active Project
All Projects
Funds Allocation
Project Reports
Projects

Project Name	Province	Constituency	Location	Project Coordinator	Project purpose	Start Date	End Date
Masai mara road construction	Rift Valley	Mt Elgon	Chepkube	Jeremy Kirwa	enable easy passing	2011-02-25	2012-12-12
...	Rift Valley	Mt Elgon	Chepkube	Jeremy Kirwa	Increase seat capacity	2011-01-19	2011-12-12
Mkwave Sec School	Coast	Isimu West	Maponya	Onyanga James	increase educational infrastructure	2010-09-08	2010-12-01
Tausa Water Project	Coast	Voi	Mbololo	Samson Katana	To meet water demands	2010-09-08	2011-07-07
K'Mbaya - Bushifu Road	Western	Lugan	Sinoto	Koki kiko	Rehabilitate the road	2010-05-18	2011-12-12
Dandora Sec School Dormitory	Nairobi	Embakasi	Kayole	Samuel Onyoso	Make the school a boarding school	2011-01-25	2012-01-01
Chepyuk water project	Rift Valley	Mt Elgon	Kaparro	Jeremy Kirwa	Provide clean and hygienic water to the people	2012-01-27	2013-01-01
Chepkube Dispensary	Rift Valley	Mt Elgon	Chepkube	Jeremy Kithome	It should cater for all medical conditions including surgery	2011-01-21	2012-12-12

The details of the specific project clicked are displayed.

Dashboard

- [View All Projects](#)
- [Add Project admin](#)
- [View Project admins](#)
- [Add Project coordinator](#)
- [View Project coordinators](#)

Projects
Project Details
Funds
Allocations
Reports
Summary
Reports
Funds Allocation Requests

Masai mara road construction Project

168/8

Project Name	Masai mara road construction[Edit Project]
Project Year	2011 - 2012
Ministry Name	Ministry of Roads and transport
Location	Chepkube
Start Date	2011-02-25
End Date	2012-12-12
Status	Not Started Change!
Project Coordinator	Kirwa Jeremy
Project Category	Roads
Project Goal	build road
Project purpose	enable easy passing
Project Benefit	all

Budgeted Amount	Total Funds received	Total Funds Disbursed
0	0	0

- Master Data
- Administration
- Reports
- Profile

Edit Project Details

Under the Project details page, Click at the [\[Edit Project\]](#) link under the Project name.

- Dashboard
- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators
- Master Data
- Administration

Projects | Project Details | Tasks | Milestones | Events | Forums | Inputs | Fund Adjustment Requests

Masai mara road construction Project

168/8	
Project Name	Masai mara road construction (Edit Project)
Project Year	2011 - 2012
Ministry Name	Ministry of Roads and transport
Location	Cheptube
Start Date	2011-02-25
End Date	2012-12-12
Status	Not Started (Change)
Project Coordinator	Kirwa Jeremy
Project Category	Roads
Project Goal	build road
Project purpose	enable easy passing
Project Benefit	all

Budgeted Amount	Total Funds received	Total Funds Disbursed
0	0	0

The Edit Project Details form is displayed.

- Dashboard
- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators
- Master Data
- Administration

Projects | Project Details | Tasks | Milestones | Events | Forums | Inputs | Fund Adjustment Requests | [Edit Project](#)

Details

Project Name:

Project Year:

Ministry:

Location:

Project Start Date:

Project End Date:

Project Coordinator:

Project Category:

Project Goal:

Project Purpose:

Project Benefit:

Fill in the edit details and click on save to update the Project details. The Project details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

- Master Data
- Administration
- Reports
- Profile

Projects | Project Details | Tasks | Milestones | Events | Reports | Inputs | Fund Adjustment Requests

Masai mara road constructions Project

Project details updated successfully

168/8

Project Name	Masai mara road constructions(Edit Project)
Project Year	2011 - 2012
Ministry Name	Ministry of Roads and transport
Location	Chepkube
Start Date	2011-02-25
End Date	2012-12-12
Status	Not Started(Change)
Project Coordinator	Kirwa Jeremy
Project Category	Roads
Project Goal	build road
Project purpose	enable easy passing
Project Benefit	all

Budgeted Amount	Total Funds received	Total Funds Disbursed
0	0	0

View Project Milestone

Under the project details page, Click on the Milestones menu item to view the Milestones of the Project.

PROJECT MANAGEMENT SYSTEM (PMS)
CONSTITUENCY: MT ELGON

| Welcome Muriga Justun | Logout | Thu 24th Feb. 2011

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

- Master Data
- Administration
- Reports
- Profile

Projects | Project Details | Tasks | Milestones | Events | Reports | Inputs | Fund Adjustment Requests

Masai mara road constructions Project

168/8

Project Name	Masai mara road constructions(Edit Project)
Project Year	2011 - 2012
Ministry Name	Ministry of Roads and transport
Location	Chepkube
Start Date	2011-02-25
End Date	2012-12-12
Status	Not Started(Change)
Project Coordinator	Kirwa Jeremy
Project Category	Roads
Project Goal	build road
Project purpose	enable easy passing
Project Benefit	all

Budgeted Amount	Total Funds received	Total Funds Disbursed
0	0	0

The Various milestones of the project are displayed.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator

Project

Milestones

[Project Milestone](#)

Milestone Name	milestone date	Status	
Roofing	2011-12-01	Not Started	Edit

Add Project Milestone

Under the view Project Milestones, Click on the **Project Milestone** link to add a project milestone.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator

Project

Milestones

[Project Milestone](#)

Milestone Name	milestone date	Status	
Roofing	2011-12-01	Not Started	Edit

Project Milestone Form is displayed. Fill in the Project milestone details and submit.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project

Milestone

Milestone Name:

Milestone Date:

Milestone Status:

The milestone details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project

Milestones

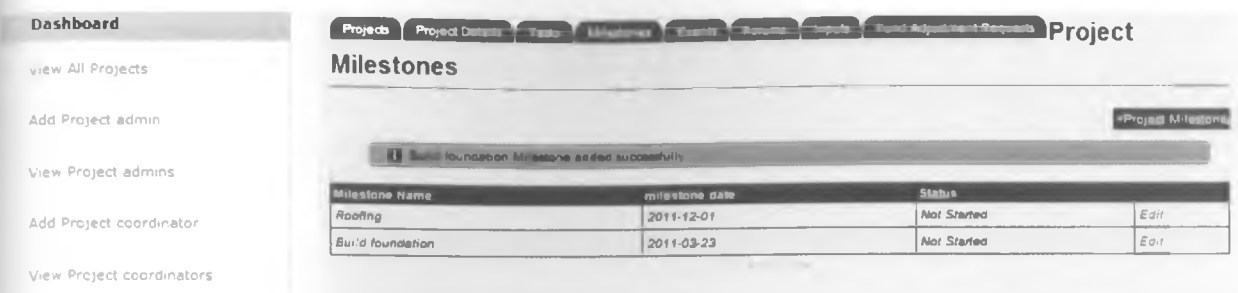
[Project Milestone](#)

Build foundation Milestone added successfully

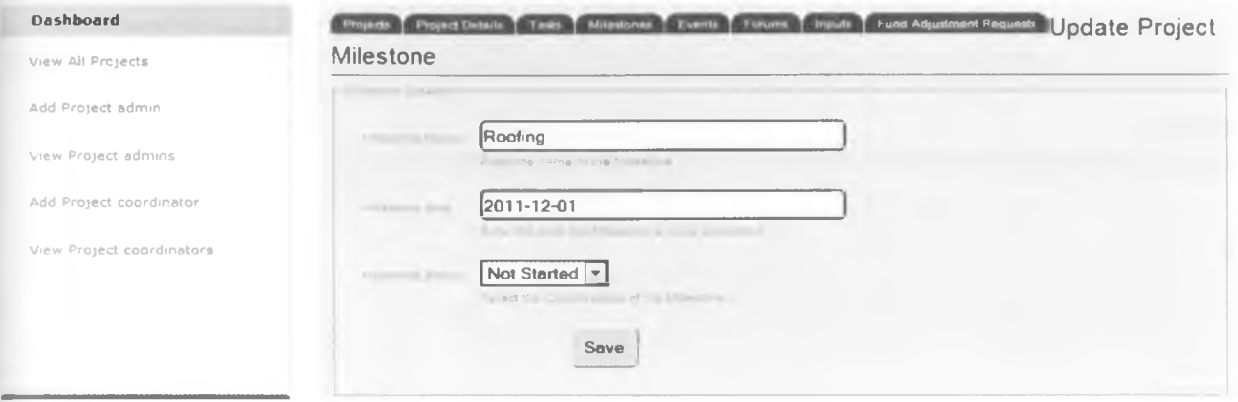
Milestone Name	milestone date	Status	
Roofing	2011-12-01	Not Started	Edit
Build foundation	2011-03-23	Not Started	Edit

Edit Project Milestone

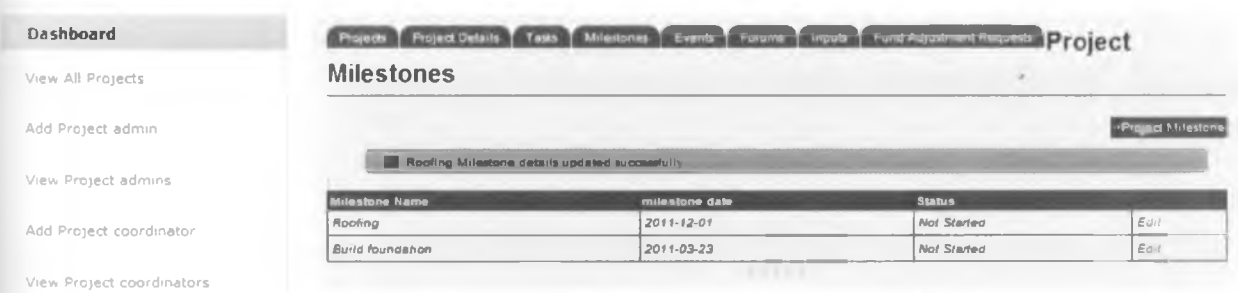
Under view project milestones page, click on the Edit link to edit the details of the milestone.



The Update Project Milestone Form is displayed. Edit the milestone details and click on the Save button to save the update details.



The update details are saved.



View Project Tasks

Under the view project details page, click on the Task menu link to view the project tasks.

The various Tasks for the project are displayed.

Add Project Task.

Under view project tasks page, click on the **+Project Task** link. A create project task form is displayed. Fill in the task details and click on save to save the project task.

The task details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project Tasks

Task created successfully

Task Name	Start Date	End Date	Status	
Site Digging	2011-01-28	2011-05-12	On going[change]	Edit View Milestones
Dig the foundation	2011-02-26	2011-04-04	Not Started[change]	Edit View Milestones

Edit Project task.

Under view project tasks, click on the **Edit link** on the row where the task resides.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator

Project Tasks

Task Name	Start Date	End Date	Status	
Site Digging	2011-01-28	2011-05-12	On going[change]	Edit View Milestones
Dig the foundation	2011-02-26	2011-04-04	Not Started[change]	Edit View Milestones

The Edit Project task form is displayed, fill in the Task update details and click on save to update the details.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Master Data

Administration

Edit Project Task

Task Name:

Start Date:

End Date:

Status:

The task details are updated.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator

Project Tasks

Dig the foundation Task details updated successfully

Task Name	Start Date	End Date	Status	
Site Digging	2011-01-28	2011-05-12	On going[change]	Edit View Milestones
Dig the foundation	2011-02-26	2011-04-04	Not Started[change]	Edit View Milestones

View Project Events

Under the view project details page, click on the Events menu item to view project events.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Master Data

Administration

Reports

Profile

Projects | Project Details | **Tasks** | Milestones | Events | Forums | Inputs | Fund Adjustment Requests

Chepkube Dispensary Project

168/1

Project Name	Chepkube Dispensary (Ear Project)
Project Year	2011 - 2012
Ministry Name	Ministry of Health
Location	Chepkube
Start Date	2011-01-21
End Date	2012-12-12
Status	On going (Change)
Project Coordinator	Kithome Jemmy
Project Category	Health
Project Goal	Build a modern health center
Project purpose	It should cater for all medical conditions including surgery.
Project Benefit	Benefit the Chepkube citizens

Budgeted Amount	Total Funds received	Total Funds Disbursed
220000	220000	200000

The Various Scheduled and past events are displayed.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects | Project Details | Tasks | Milestones | **Events** | Forums | Inputs | Fund Adjustment Requests

Project Events

+Project Event

Event's Name	Event's Date	Event's Details	Site
Stake Holders Meeting	2011-01-24	All the stake holders should meet to chart the way forward	Site

Add an event

Under the view project events page, click on the **Project Event** link to create a project event. The Add Project event form is displayed. Fill in the event details and submit by clicking on the save button.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Master Data

Project | Project Admins | Tasks | View Events | Events | Inputs | Fund Adjustment Requests | **Add Project**

Event

Event's Name:
Maximum length of this field: Project's E-URL

Event's Date:
Maximum length of this field: 10 characters for the date

Event's Details:
Maximum length of this field: 255

The event details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project | Project Admins | Tasks | View Events | Events | Inputs | Fund Adjustment Requests | **Project Events**

Project Event

Meet all stakeholders Event created successfully

Event's Name	Event's Date	Event's Details	
Stake Holders Meeting	2011-01-24	All the stake holders should meet to chart the way forward	Edit
Meet all stakeholders	2011-02-26	lets meet	Edit

Edit Event Details

Under view all events page, click on the Edit link on the row that the event resides. The edit project event form is displayed. Edit the details and click the Save button to update the details.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Master Data

Administration

Projects | Project Details | Tasks | Milestones | **Events** | Forums | Inputs | Fund Adjustment Requests | **Edit Project**

Event

Event Name:

Event's Date:

Event's Details:

The updated details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Master Data

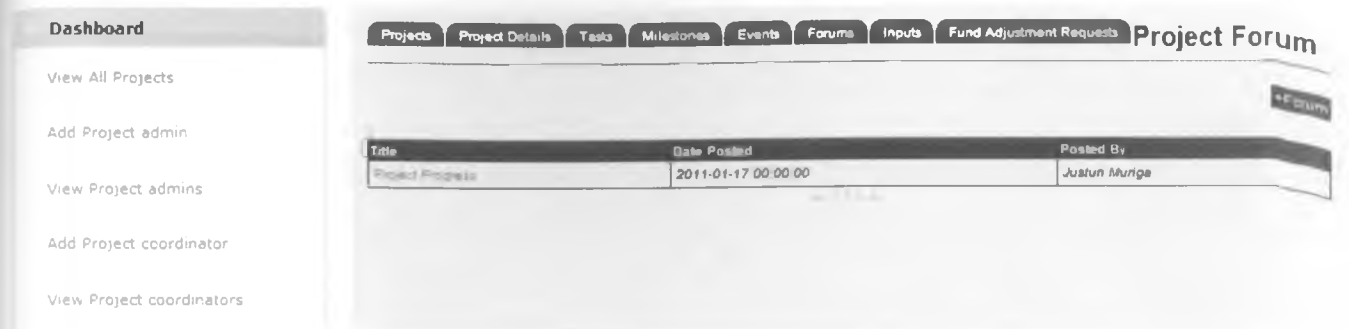
Projects | Project Details | Tasks | Milestones | **Events** | Forums | Inputs | Fund Adjustment Requests | **Project Events**

Stake Holders Meeting Event details updated successfully

Event's Name	Event's Date	Event's Details	
Stake Holders Meeting	2011-03-25	All the stake holders should meet to chart the way forward	Edit
Meet all stakeholders	2011-02-26	lets meet	Edit

View Project Forums

Under the view project details, click the Forums menu to view the project forums.



The screenshot shows a web application interface. On the left is a 'Dashboard' sidebar with the following menu items: 'View All Projects', 'Add Project admin', 'View Project admins', 'Add Project coordinator', and 'View Project coordinators'. The main content area has a navigation bar with tabs: 'Projects', 'Project Details', 'Tasks', 'Milestones', 'Events', 'Forums', 'Inputs', 'Fund Adjustment Requests', and 'Project Forum'. The 'Project Forum' tab is active. Below the navigation bar is a table with the following data:

Title	Date Posted	Posted By
Project Progress	2011-01-17 00:00:00	Justin Muriga

Add project Forums or messages.

Click on the **+Forum** and **+Comment** to respectively add a forum and comment. The forum/message form is displayed. Fill in the forum/message details and click the submit button.

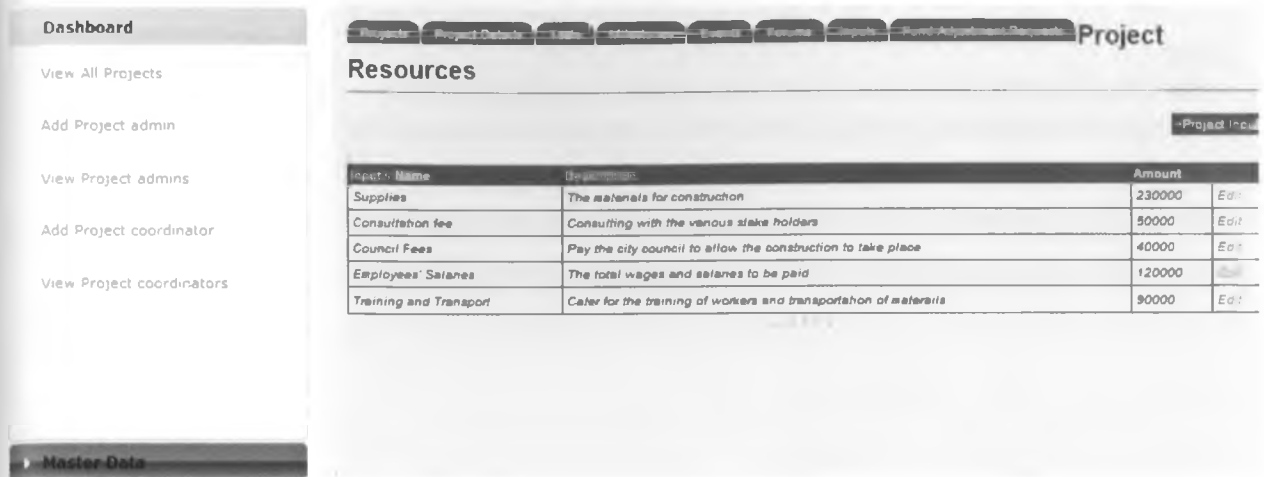


The screenshot shows the 'Add Comment' form in the web application. The 'Dashboard' sidebar is visible on the left. The main content area has a navigation bar with tabs: 'Projects', 'Project Details', 'Tasks', 'Milestones', 'Events', 'Forums', 'Inputs', 'Fund Adjustment Requests', and 'Add Comment'. The 'Add Comment' tab is active. The form contains the following fields and a button:

- Project Name:** A text input field with a placeholder text 'Please select a project from the list below'.
- Message:** A larger text input field with a placeholder text 'Please enter message'.
- Save:** A button to submit the form.

View a Project Input

Under the project details page, click at the inputs link to view project inputs. The project inputs are displayed.



The screenshot shows a web interface with a sidebar on the left and a main content area. The sidebar has a 'Dashboard' section with links: 'View All Projects', 'Add Project admin', 'View Project admins', 'Add Project coordinator', and 'View Project coordinators'. Below this is a 'Master Data' section. The main content area has a breadcrumb trail: 'Project > Project Details > Inputs > Resources'. The 'Resources' section has a '+Project Input' link. Below it is a table with the following data:

Input Name	Description	Amount	
Supplies	The materials for construction	230000	Edit
Consultation fee	Consulting with the various stake holders	50000	Edit
Council Fees	Pay the city council to allow the construction to take place	40000	Edit
Employees' Salaries	The total wages and salaries to be paid	120000	Edit
Training and Transport	Cater for the training of workers and transportation of materials	90000	Edit

Add Project Input

Under view project inputs click at the **+Project input** link to add a project input. The Add new resource form is displayed. Fill in the details appropriately and click on save to submit the data.



The screenshot shows the 'Add New Resource' form. The breadcrumb trail is 'Project > Project Details > Inputs > Fund Adjustment Requests > Add New'. The form has the following fields:

- Resource Name:
- Description:
- Amount:
- Save button

The project input is saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project Resources

Message: Project input created successfully

Item's Name	Description	Amount	
Supplies	The materials for construction	230000	Edit
Consultation fee	Consulting with the various stake holders	80000	Edit
Council Fees	Pay the city council to allow the construction to take place	40000	Edit
Employees' Salaries	The total wages and salaries to be paid	120000	Edit
Training and Transport	Cater for the training of workers and transportation of materials	90000	Edit
materials	buy road materials	40000	Edit

Project Funds

Under the view all projects, click on the funds Allocation menu add funds to a project.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects

Project Name	Province	Constituency	Location	Project Coordinator	Project purpose	Start Date	End Date
Masei mera road construction	Rift Valley	Mt Elgon	Chepkube	Jeremy Kinwa	enable easy passing	2011-02-25	2012-12-12
Stella	Rift Valley	Mt Elgon	Chepkube	Jeremy Kinwa	Increase seat capacity	2011-01-19	2011-12-12
Kokwe Sec. School	Coast	Jamii West	Mapenyis	Onuonje James	increase educational infrastructure	2010-09-08	2010-12-01
Tausa Water Project	Coast	Voi	Mhalala	Samson Katana	To meet water demands	2010-09-08	2011-07-07
K'ribaya - Eushifu Road	Western	Lugari	Sinoko	Koki kiko	Rehabilitate the road	2010-05-18	2011-12-12
Dangere Sec. School Dormitory	Nairobi	Embakasi	Kayole	Samuel Onyoso	Make the school a boarding school	2011-01-25	2012-01-01
Chepyuk water project	Rift Valley	Mt Elgon	Kaparo	Jeremy Kinwa	Provide clean and hygienic water to the people	2012-01-27	2013-01-01
Chepkube Dispensary	Rift Valley	Mt Elgon	Chepkube	Jeremy Kithome	It should cater for all medical conditions including surgery	2011-01-21	2012-12-12

Project's funds form is displayed. Fill in the funds details and submit the values.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

- Master Data
- Administration
- Reports
- Profile

Project's Funds

Project Name: **Chepkube Dispensery
Chepyuk water project
Stella**

Project: **Masai mara road constructions**

Amount: **50000**

Payment Method: **Cheque**

Date: **2011-02-24**

Reference No: **2133232**

The funds details are saved.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

- Master Data
- Administration
- Reports
- Profile

Masai mara road constructions Project

Funds added successfully

168/8		
Project Name	Masai mara road constructions/Edit Project	
Project Year	2011 - 2012	
Ministry Name	Ministry of Roads and transport	
Location	Chepkube	
Start Date	2011-02-25	
End Date	2012-12-12	
Status	Not Started;[Change]	
Project Coordinator	Kirwa Jeremy	
Project Category	Roads	
Project Goal	build road	
Project purpose	enable easy passing	
Project Benefit	all	

Budgeted Amount	Total Funds received	Total Funds Disbursed
0	\$3000	0

Request funds adjustment

Under the view project details, click on the Request funds adjustment link to request for additional funds.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects Project Details Tasks Milestones Events Forums Reports Fund Adjustment Requests Requested

Funds Adjustments

+Fund adjustment

Currently no funds adjustments have been requested.

Then click on the **+ Fund adjustment** to request additional funds. A funds request form is displayed. Fill in the request details and submit.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects Project Details Tasks Milestones Events Forums Inputs Fund Adjustment Requests Select Project

Inputs

- Supplies
- Consultation fee
- Council Fees
- Employees' Salaries
- Training and Transport
- material

pay fee rise

60000

Make Request

The funds request is sent successfully

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects Project Details Tasks Milestones Events Forums Reports Fund Adjustment Requests Requested

Funds Adjustments

+Fund adjustment

Funds requests sent successfully

Input Name	Amount Requested	Date requested	Request Reason	Request Status
Supplies	30000	2011-01-16	Need to increase the amount to purchase more supplies	Approved
Council Fees	60000	2011-02-25	pay fee rise	Pending

Reports

Reports based on the status of the project and its milestones

Click on the Project Report link under view all projects. Choose the status to generate the report for instance Projects behind Schedule

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Project & Task Reports

Report type: **Projects Behind Schedule**

Projects are going behind schedule Projects not completed on schedule
 Projects are going on schedule Projects are completed on schedule

Project Name	Project Year	Ministry	Estimated End Date	Actual End date	Location	Constituency	Province
Chepkuba Dispensary	2010 - 2011	Ministry of Education	2010-12-31		Alpenya	Uasin Gishu	Coast

Project with overspent budgets

Click at the Projects with overspent budgets link. The report is generated and displayed.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects With Over Spent Budgets

Project Name	Project Year	Location	Status	Funds Adjustments	Reallocated	Over Spent By
Chepkuba Dispensary	2011 - 2012	Chepkuba	On going	30000	0	30000

Projects with Unspent funds

Click at the Project with unspent Funds link to display project with unspent funds.

Dashboard

- View All Projects
- Add Project admin
- View Project admins
- Add Project coordinator
- View Project coordinators

Projects With Unspent Funds

Project Name	Project Year	Location	Status	Funds Received	Funds Disbursed	Unspent Amount
Chepkuba Dispensary	2011 - 2012	Chepkuba	On going	2300000	300000	2000000
Chepyuk water project	2012 - 2013	Kapaino	Not Started	3500000	1500000	2000000
KAMbaya - Bushifu Road	2011 - 2012	Sinoko	Completed	800000	416000	384000
Waters Water Project	2010 - 2011	Mbaroto	On going	1650000	1095000	555000
Alpenya Sec School	2010 - 2011	Mapenya	On going	720000	693000	27000
Stella	2011 - 2012	Chepkuba	Not Started	1100000	540000	560000
Mass. ware road constructions	2011 - 2012	Chepkuba	Not Started	50000	0	50000

8.2 Sample Code

This is a sample code for Project Administrator Class and Function

```
1 <?php
2
3 class ProjectadministratorController extends Zend_Controller_Action
4 {
5
6     public function init()
7     {
8         $session=new Zend_Session_Namespace('feedback');
9         $feedback=$session->FEEDBACK;
10        $session_error=$session->ERROR;
11        if(!empty($feedback)) {
12            $this->view->msg=$feedback;
13            unset($session->FEEDBACK);
14            $session->FEEDBACK=null;
15        }
16        if(!empty($session_error)) {
17            $this->view->error=$session_error;
18            unset($session->ERROR);
19            $session->ERROR=null;
20        }
21        $this->db_error="Server error.Please try again later";
22        $this->privilege_err="You don't have sufficient privilege to execute the action";
23        $session=new Zend_Session_Namespace('Login');
24        $this->USERID=$session->USER_ID;
25        if($this->USERID==null){
26            $session=new Zend_Session_Namespace('feedback');
27            $session->FEEDBACK="Please login to use the system";
28            $this->_helper->redirector('login','login','default');
29        }
30        else {
31            $this->USERNAME=$session->USERNAME;
32            $this->ROLE=$session->ROLE;
33            $this->ROLE_ID=$session->ROLE_ID;
34            $this->NAME=$session->NAME;
35            $this->view->name= $this->NAME;
36            $this->CONSTITUENCY_ID=$session->CONSTITUENCY_ID;
37            $this->_acl = new Application_Model_Acl();
38            $this->_acl = $this->_acl->my_acl;
39            $this->_role = $session->ROLE;
40            $this->_resource = 'Project_management';
41            $this->view->role=$session->ROLE;
42            $this->CONSTITUENCY=$session->CONSTITUENCY;
43            $this->view->constituency=$this->CONSTITUENCY;
44            $this->view->constituency_id=$this->CONSTITUENCY_ID;
45            //echo $session->ROLE;exit;
46        }
47        Zend_Paginator::setDefaultScrollingStyle ( 'Sliding' );
48        Zend_View_Helper_PaginationControl::setDefaultViewPartial ( 'paginator.phtml' );
49    }
50
51
52    public function indexAction()
53    {
54
55    }
56
57    //The actions adds a new project
58    public function addnewprojectAction()
59    {
60        //set the page title
61        if($this->_acl->isAllowed($this->_role,$this->_resource,'add_project')) {
62            $this->view->title="Create Project";
63            $session=new Zend_Session_Namespace('Notify');
64            if(isset($session->notification))
65            {
66                $this->view->msg=$session->notification;
67                unset($session->notification);
68            }
69            //get the project co-ordinators constituency
70            $constituency=$this->CONSTITUENCY_ID;
71            //Instantiate the New project form
72            $master_model=new Application_Model_DbTable_Masterdata();
73            $project_model=new Application_Model_DbTable_Projects();
74            $ministry_data=$master_model->getMinistriesAsKeyValue();
75            if(empty($ministry_data))
76            {
77                $session=new Zend_Session_Namespace('Notify');
```



```

77     $session->notification="Ministries have not yet been defined by the System Administrator";
78     $this->_helper->redirector('/view/projects','projectadministrator','default');
79 }
80 // var_dump($this->CONSTITUENCY_ID);exit;
81 $location_data=$project_model->getAllLocationsInConstituencyAsKeyValue($constituency);
82 if(empty($location_data))
83 {
84     $session=new Zend_Session_Namespace('Notify');
85     $session->notification="Locations in the Constituency have not yet been defined by the System Administrator";
86     $this->_helper->redirector('/view/projects','projectadministrator','default');
87 }
88 $status_data=array(array('key'=>'1','value'=>'Not Started Yet'),array('key'=>'2','value'=>'On going'));
89 $coordinator_data=$project_model->getAllCoordinatorsInConstAsKeyValue($constituency);
90 if(empty($coordinator_data))
91 {
92     $session=new Zend_Session_Namespace('Notify');
93     $session->notification="Currently there are no Project Coordinators defined.Add the project coordinator";
94     $this->_helper->redirector('createprojectcoordinator','usermanagement','default',array('constituency_id'=>$constitue
95 )
96 $category_data=$master_model->getCategoryAsKeyValue();
97 if(empty($category_data))
98 {
99     $session=new Zend_Session_Namespace('Notify');
100    $session->notification="Project Categories have not yet been defined by the System Administrator";
101    $this->_helper->redirector('/view/projects','projectadministrator','default');
102 }
103 $form = new Application_Form_Addnewproject($ministry_data, $location_data, $status_data, $coordinator_data, $category_d
104 $request = $this->getRequest();
105 if ($this->getRequest()->isPost())
106 {
107     if ($form->isValid($request->getPost()))
108     {
109         //get the submitted values
110         $formdata=$form->getValues();
111         // var_dump($formdata);exit;
112         //if project start date is less than today
113         /* if($formdata['start date'] < date('Y-m-d'))
114
115             //echo "yes";
116             $this->view->msg="Start date must be greater than today's date[".date('Y-m-d')."]";
117             $form->populate($formdata);
118
119
120             if($formdata['end_date'] < $formdata['start_date'])
121             {
122                 $this->view->msg="End date must be greater than project's start date[".$formdata['start_date']."]";
123                 $form->populate($formdata);
124             }
125             else
126             {
127
128                 //exit;
129                 $project_details=array(
130                     'project_name'=>$formdata['project_name'],
131                     'project_year'=>$formdata['project_year'],
132                     'ministry_ID'=>$formdata['ministry'],
133                     'location_ID'=>$formdata['location'],
134                     'project_start_date'=>$formdata['start_date'],
135                     'project_end_date'=>$formdata['end date'],
136                     'status_ID'=>$formdata['status'],
137                     'user_ID'=>$formdata['project_coordinator'],
138                     'category_ID'=>$formdata['category'],
139                     'project_gcal'=>$formdata['project_gcal'],
140                     'project_purpose'=>$formdata['project_purpose'],
141                     'project_benefit'=>$formdata['project_benefit'],
142                 );
143
144                 //save to session
145                 $session = new Zend_Session_Namespace('project');
146                 $session->new_project_details=$project_details;
147                 //$project_model=new Application_Model_DbTable_Projects();
148                 //$saved_project=$project_model->saveNewProject($project_details);
149                 $this->_helper->redirector('/addnewclass','projectadministrator','default',array('id'=>1));
150
151             }
152         }

```

```

154     $this->view->form=$form;
155 }
156 else{
157     $this->view->error=$this->privilege_err;
158     $this->view->noview="isset";
159 }
160 }
161 //view project details
162 public function viewprojectdetailsAction()
163 {
164     if($this->_acl->isAllowed($this->_role,$this->_resource,'view_project')) {
165         //get project id
166         $project_id=$this->_getParam('project_id');
167         if(!isset($project_id))
168             {
169                 //redirect to all projects
170                 $session=new Zend_Session_Namespace('Notify');
171                 $session->notification="Select a project in order to view its details";
172                 $this->_helper->redirector('viewprojects','projectadministrator','default');
173             }
174         $this->view->project_id=$project_id;
175         $session=new Zend_Session_Namespace('Notify');
176         $this->view->role_id=$this->ROLE_ID;
177         if(isset($session->notification))
178             {
179                 $this->view->msg=$session->notification;
180                 unset($session->notification);
181             }
182         //get the project details
183         $project_model=new Application_Model_DbTable_Projects();
184         $project=$project_model->getProjectdetails($project_id);
185         $funds_received=$project_model->getFundsAllocatedToProject($project_id);
186         $project_funds_received=0;
187         foreach($funds_received as $funds)
188             {
189                 $project_funds_received+=$funds['amount'];
190             }
191         $this->view->total_funds_received=$project_funds_received;
192         //get total funds disbursed
193         $funds_disbursed=$project_model->getFundsDisbursedToProject($project_id);
194         $project_funds_disbursed=0;
195         foreach($funds_disbursed as $funds)
196             {
197                 $project_funds_disbursed+=$funds['amount'];
198             }
199         $this->view->total_funds_disbursed=$project_funds_disbursed;
200         //get budget amount
201         $this->view->budgeted_amount=$project_model->getProjectBudget($project_id);
202         //var_dump($project);
203         $this->view->title=$project['project_name'];
204         $this->view->project=$project;
205         //get files
206         $this->view->files=$project_model->getAllFiles($project_id);
207     }
208 }
209 else{
210     $this->view->error=$this->privilege_err;
211     $this->view->noview="isset";
212 }
213 //get all projects
214 public function viewprojectsAction()
215 {
216     if($this->_acl->isAllowed($this->_role,$this->_resource,'view_project')) {
217         //get project id
218         $project_id=$this->_getParam('project_id');
219         //get the project details
220         $project_model=new Application_Model_DbTable_Projects();
221         $session=new Zend_Session_Namespace('Notify');
222         $this->view->role_id=$this->ROLE_ID;
223         if(isset($session->notification))
224             {
225                 $this->view->msg=$session->notification;
226                 unset($session->notification);
227             }
228         if($this->ROLE_ID==4 || $this->ROLE_ID==1)
229             {

```

```

265 if($this->acl->isAllowed($this->_role,$this->_resource,'view_project_event')) {
266 //get project id
267 $project_id=$this->getParam('project_id');
268 if(!isset($project_id))
269 {
270 //redirect to all projects
271 $session=new Zend_Session_Namespace('Notify');
272 $session->notification="Select a project inorder to view its Events";
273 $this->_helper->redirector('viewprojects','projectadministration','index');
274 }
275 $this->view->project_id=$project_id;
276 //get the project details
277 $session=new Zend_Session_Namespace('Notify');
278 if(isset($session->notification))
279 {
280 $this->view->msg=$session->notification;
281 unset($session->notification);
282 }
283 $this->view->role_id=$this->ROLE_ID;
284 $event_model=new Application_Model_DbTable_Events();
285 $events=$event_model->getEventsForProject($project_id);
286 $this->view->title="Project Events";
287 if(!empty($events))
288 {
289 $paginator = Zend_Paginator::factory ( $events );
290 $paginator->setItemCountPerPage ( 20 );
291 $paginator->setCurrentPageNumber ( $this->getParam ( 'page' ) );
292 $this->view->events = $paginator;
293 }
294 else
295 {
296 $this->view->msg="Currently No events have been defined.";
297 }
298 }
299 else{
300 $this->view->error=$this->privilege_err;
301 $this->view->noview="isset";
302 }
303 }
304 //The action edits an existing project
305 public function editprojectAction()
306 {

```

```

231         //var_dump($project);exit:
232     }
233     else if($this->ROLE_ID==2)
234     {
235         $project=$project_model->getAllProjectsAdmin($this->CONSTITUENCY_ID,$this->USERID);
236         //var_dump($project);exit:
237     }
238     else if($this->ROLE_ID==3)
239     {
240         $project=$project_model->getAllProjects($this->USERID);
241     }
242     $this->view->title="Projects";
243     //var_dump($project);
244     if(!empty($project))
245     {
246         $paginator = Zend_Paginator::factory ( $project );
247         $paginator->setItemCountPerPage ( 20 );
248         $paginator->setCurrentPageNumber ( $this->getParam ( 'page' ) );
249         $this->view->project = $paginator;
250     }
251     else
252     {
253         $this->view->msg="No projects have been defined currently";
254     }
255 }
256 else{
257     $this->view->error=$this->privilege_err;
258     $this->view->noview="isset";
259 }
260 }
261 //get all projects
262 public function vieweventsAction()
263 {
264

```

```

307     if($this->_acl->isAllowed($this->_role,$this->_resource,'edit_project')) {
308     $this->view->title="Edit Project Details";
309     //get project id
310     $project_id=$this->_getParam('project_id');
311     if(!isset($project_id))
312     {
313         //redirect to all projects
314         $session=new Zend_Session_Namespace('Notify');
315         $session->notification="Select a project inorder to Edit its details";
316         $this->_helper->redirector('viewprojects','projectadministrator','default');
317     }
318     //get the project details
319     $project_model=new Application_Model_DbTable_Projects();
320     $project=$project_model->getProjectdetails($project_id);
321     //Instantiate the New project form
322     $form = new Application_Form_Editproject($project);
323     $request = $this->getRequest();
324     if ($this->getRequest()->isPost())
325     {
326         if ($form->isValid($request->getPost()))
327         {
328             //get the submitted values
329             $formdata=$form->getValues();
330             /* if($formdata['start_date'] < date('Y-m-d'))
331             {
332                 //echo "yes";
333                 $this->view->msg="Project's start date must be greater than today's date";
334                 $form->populate($formdata);
335             }
336             */
337             if($formdata['end_date'] < $formdata['start_date'])
338             {
339                 $this->view->msg="Project's end date must be greater than project's start date";
340                 $form->populate($formdata);
341             }
342             else
343             {
344                 $project_details=array(
345                     'project_year'=>$formdata['project_year'],
346                     'ministry_id'=>$formdata['ministry'],
347                     'location_id'=>$formdata['location'],
348                     'project_start_date'=>$formdata['start_date'],
349                     'project_end_date'=>$formdata['end_date'],
350                     'user_id'=>$formdata['project_coordinator'],
351                     'category_id'=>$formdata['category'],
352                     'project_goal'=>$formdata['project_goal'],
353                     'project_purpose'=>$formdata['project_purpose'],
354                     'project_benefit'=>$formdata['project_benefit'],
355                 );
356             }
357
358             //save to database
359             $project_model=new Application_Model_DbTable_Projects();
360             $saved_project=$project_model->updateProject($project_details, $project_id);
361             //var_dump($saved_project);
362             $session=new Zend_Session_Namespace('Notify');
363             $session->notification="Project details updated successfully";
364             $this->_helper->redirector('viewprojectdetails','projectadministrator','default',array('project_id' =>$project_id));
365         }
366     }
367 }
368 $this->view->form=$form;
369 }
370 else{
371     $this->view->error=$this->privilege_err;
372     $this->view->noview="isset";
373 }
374 }
375 //The action creates new task for a project
376 public function addnewtaskAction()
377 {
378     if($this->_acl->isAllowed($this->_role,$this->_resource,'add_task')) {
379         //get the project ID
380         if($this->_hasParam('project_id'))
381         {
382             $project_id=$this->_getParam('project_id');
383         }

```

```

385 // $project_id="3";
386 else if($this->_hasParam('id'))
387 {
388     $session = new Zend_Session_Namespace('project');
389     $projo_details=$session->new_project_details;
390     $this->view->msg="Create a Task for the ".$projo_details['project_name'];
391 }
392 else
393 {
394     //redirect to all projects
395     $session=new Zend_Session_Namespace('Notify');
396     $session->notification="Select a project inorder to add a Task";
397     $this->_helper->redirector('viewprojects','projectadministrator','');
398 }
399 //set the page title
400 $this->view->title="Create Project Task";
401 //Instantiate the New project form
402 $form = new Application_Form_Addnewtask($options=null);
403 $request = $this->getRequest();
404 if ($this->getRequest()->isPost())
405 {
406     if ($form->isValid($request->getPost())
407     {
408         //get the submitted values
409         $formdata=$form->getValues();
410         //get project details
411         $project_model=new Application_Model_DbTable_Projects();
412         if($this->_hasParam('id'))
413         {
414             $session = new Zend_Session_Namespace('project');
415             if(isset($session->new_project_details))
416             {
417                 //get the constituency id
418                 $master_model=new Application_Model_DbTable_Masterdata();
419                 $projo_details=$session->new_project_details;
420                 //var_dump($projo_details);
421                 if($formdata['start_date'] < $projo_details['project_start
422                 {
423                     $this->view->msg="Task's start date must be greater than project's start date!".$projo_details['project_name'];
424                     $form->populate($formdata);
425                 }
426             }
427         }
428         else if($formdata['end_date'] < $formdata['start_date'])
429         {
430             $this->view->msg="Task's end date must be greater than Task's start date";
431             $form->populate($formdata);
432         }
433         else if($formdata['end_date'] > $projo_details['project_end_date'])
434         {
435             $this->view->msg="Task's end date must be Less than Project's end date!".$projo_details['project_name'];
436             $form->populate($formdata);
437         }
438         else
439         {
440             $location_details=$master_model->getLocationDetails($projo_details['location_ID']);
441             // save new project first
442             $project_model=new Application_Model_DbTable_Projects();
443             $saved_project=$project_model->saveNewProject($session->new_project_details);
444             $data=array(
445                 'project_ref_number'=>$location_details['constituency_ID']."_".$saved_project,
446             );
447             $updated_info=$project_model->updateProject($data, $saved_project);
448             unset($session->new_project_details);
449             $task_details=array(
450                 'task_name'=>$formdata['task_name'],
451                 'task_start_date'=>$formdata['start_date'],
452                 'task_end_date'=>$formdata['end_date'],
453                 'status_ID'=>$formdata['status'],
454                 'project_ID'=>$saved_project, );
455             $task_model=new Application_Model_DbTable_Task();
456             $task=$task_model->saveNewTask($task_details);
457             $session=new Zend_Session_Namespace('Notify');
458             $session->notification=$projo_details['project_name']." Project created successfully";
459             //redirect to projects details page
460             $this->_helper->redirector('viewprojectdetails','projectadministrator','default',);
461         }
462     }
463 }

```

```

443     }
444 }
445 else
446 {
447
448 $project=$project_model->getProjectdetails($project_id);
449 //echo $formdata['start_date'].",", $project['project_start_date'];exit;
450 if($formdata['start_date'] < $project['project_start_date'] || $formdata['start_date'] > $project['project_start_date']
451 {
452
453     $this->view->msg="Task's start date must be greater than project's start date[".$project['project_start_date']."]";
454     $form->populate($formdata);
455     echo "yes";exit;
456 }
457 else if($formdata['end_date'] < $formdata['start_date'] || $formdata['end_date'] > $project['project_start_date']
458 {
459     $this->view->msg="Task's end date must be greater than Task's start date[".$formdata['start_date']."]";
460     $form->populate($formdata);
461 }
462 }
463
464 $task_details=array(
465     'task_name'=>$formdata['task_name'],
466     'task_start_date'=>$formdata['start_date'],
467     'task_end_date'=>$formdata['end_date'],
468     'status_ID'=>$formdata['status'],
469     'project_ID'=>$project_id,
470 );
471
472 $task_model=new Application_Model_DbTable_Task();
473 $task=$task_model->saveNewTask($task_details);
474 $session=new Zend_Session_Namespace('Notify');
475 $session->notification="Task created successfully";
476 //redirect to task details page
477 $this->helper->redirector('viewtasks', 'projectadmininterface', 'default', array('project_id'=>$project_id));
478 }
479 }
480
481 }
482
483 $this->view->form=$form;
484 }
485
486 else{
487     $this->view->error=$this->privilege_err;
488     $this->view->noview="isset";
489 }
490 }
491
492 //The function edits the details of the task
493 public function edittaskAction()
494 {
495     if($this->acl->isAllowed($this->_role, $this->_resource, 'edit_task')) {
496         //get the task
497         $task_id=$this->_getParam('task_id');
498         //echo $task_id;
499         //get project id
500         $project_id=$this->_getParam('project_id');
501         if(!isset($project_id))
502         {
503             //redirect to all projects
504             $session=new Zend_Session_Namespace('Notify');
505             $session->notification="Select a project in order to view its details";
506             $this->helper->redirector('viewprojects', 'projectadmininterface', 'default');
507         }
508         if(isset($project_id) && !isset($task_id))
509         {
510             //redirect to all projects
511             $session=new Zend_Session_Namespace('Notify');
512             $session->notification="Select a project in order to view its details";
513             $this->helper->redirector('viewtasks', 'projectadmininterface', 'default', array('project_id'=>$project_id));
514         }
515         $this->view->project_id=$project_id;
516         //set the page title
517         $this->view->title="Edit Project Task";
518         //get task details
519         $task_model=new Application_Model_DbTable_Task();

```

```

538 //var_dump($task);
539 //Instantiate the New project form
540 $form = new Application_Form_EditTask($task);
541 $request = $this->getRequest();
542 if ($this->getRequest()->isPost())
543 {
544     //get the submitted values
545     $formdata=$form->getValues();
546     $project_model=new Application_Model_DbTable_Projects();
547     $project=$project_model->getProjectDetails($project_id);
548     //echo $formdata['start_date']."<" . $project['project_start_date'].":exit:
549     if ($formdata['start_date'] < $project['project_start_date'] || $formdata['start_date'] > $p
550     {
551
552         $this->view->msg="Task's start date must be greater than project's start date[" . $pro
553         $form->populate($formdata );
554         // echo "yes":exit:
555     }
556     else if ($formdata['end_date'] < $formdata['start_date'] || $formdata['end_date'] > $projec
557     {
558         $this->view->msg="Task's end date must be greater than Task's start date[" . $formdata
559         $form->populate($formdata);
560     }
561     else
562     {
563         $task_details=array(
564             'task_name'=>$formdata['task_name'],
565             'task_start_date'=>$formdata['start_date'],
566             'task_end_date'=>$formdata['end_date'],
567             'status_ID'=>$formdata['status']
568         );
569         $task_model=new Application_Model_DbTable_Projects();
570         //var_dump($task_details):exit:
571         $tasks=$task_model->updateTask($task_id, $task_details);
572         $session=new Zend_Session_Namespace('Notify');
573         $session->notification=$formdata['task name']." Task details updated success
574         $this->_helper->redirector('viewtasks','projectadministrator','default',array(
575
576     }
577     $this->view->form=$form;
578 }
579 else{
580     $this->view->error=$this->privilege_err;
581     $this->view->noview="isset";
582 }
583 }
584 public function viewtasksAction()
585 {
586     if($this->_acl->isAllowed($this->_role,$this->_resource,'view_task')) {
587         $this->view->title="Project Tasks";
588         //get the project id
589         $project_id=$this->getParam('project_id');
590         if(!isset($project_id))
591         {
592             //redirect to all projects
593             $session=new Zend_Session_Namespace('Notify');
594             $session->notification="Select a project in order to view its Tasks";
595             $this->_helper->redirector('viewprojects','projectadministrator','default');
596         }
597         $this->view->project_id=$project_id;
598         $this->view->role_id=$this->ROLE_ID;
599         $session=new Zend_Session_Namespace('Notify');
600         if(isset($session->notification))
601         {
602             $this->view->msg=$session->notification;
603             unset($session->notification);
604         }
605         //get tasks associated with the project
606         $task_model=new Application_Model_DbTable_Task();
607         $tasks=$task_model->getAllTasksForProject($project_id);
608         if(!empty($tasks))
609         {
610             $paginator = Zend_Paginator::factory ( $tasks );
611             $paginator->setItemCountPerPage ( 20 );

```



```

612         $paginator->setCurrentPageNumber ( $this->getParam ( 'page' ) );
613         $this->view->tasks = $paginator;
614     }
615     else
616     {
617         $this->view->msg="There are No tasks defined for the project";
618     }
619 }
620 else{
621     $this->view->error=$this->privilege_err;
622     $this->view->noview="isset";
623 }
624 }
625 //view forums
626 public function viewforumsAction()
627 {
628     if($this->_acl->isAllowed($this->_role,$this->_resource,'view_forum')) {
629         $this->view->title="Project Forum";
630         //get the project id
631         $session=new Zend_Session_Namespace('Notify');
632         if(isset($session->notification))
633         {
634             $this->view->msg=$session->notification;
635             unset($session->notification);
636         }
637         $project_id=$this->getParam('project_id');
638         if(!isset($project_id))
639         {
640             //redirect to all projects
641             $session=new Zend_Session_Namespace('Notify');
642             $session->notification="Select a project in order to view its Forums";
643             $this->_helper->redirector('viewprojects','projectadmin/attach','default');
644         }
645         $this->view->project_id=$project_id;
646         //get tasks associated with the project
647         $task_model=new Application_Model_DbTable_Forum();
648         $forums=$task_model->getForumForProject($project_id);

```