

TITLE PAGE

**DESIGN AND IMPLEMENTATION OF PROJECT DATABASE
MANAGEMENT SYSTEM**

(A CASE STUDY OF COMPUTER SCIENCE DEPARTMENT)

BY

Michael Esther - 2018/122493cs

Faruk Nuhu - 2018/120865cs

Kofoworola Musibau Oladimeji - 2018/125372cs

EZEKIEL SALOME DOGO - 2018/118962CS

SUBMITTED TO

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF INFORMATION COMMUNICATION AND TECHNOLOGY

THE FEDERAL POLYTECHNIC

P.M.B. 55, BIDA,

NIGER STATE.

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF NATIONAL DIPLOMA IN COMPUTER SCIENCE**

SEPTEMBER, 2021

CERTIFICATION

This is to certify that the project titled “Design and Implementation of Project Database Management System (A Case Study of Computer Science Department)” has been supervised, read and approved by the Department of Computer Science, Federal Polytechnic Bida, Niger State in partial fulfillment of the requirements for the award of National Diploma (ND) in Computer Science.

Mr. Usman Hamzat Mohammed
(Project Supervisor)

Sign/Date

Mr. Opotu Hassan Siyaka
(Head of Department)

Sign/Date

Mr. Shettima Abdulazeez
(Project Coordinator)

Sign/Date

(External Supervisor)

Sign/Date

DEDICATION

I dedicate this project to Almighty God for His unending love, strength and wisdom that enable me to complete this project successfully.

ACKNOWLEDGEMENT

I appreciate and acknowledge Almighty God for making me scale through despite the unpleasant events of nature. For the intuition, life, Peace and every good thing God has been giving me, I am grateful to all my friends.

Secondly, I say thank you to my amiable Supervisor Mr. Usman Hamzat Mohammad for his Support (Advice, Encouragement and Time), I say may the blessings of God not depart from you and your household.

Thirdly, I say thank you to my Amiable Project Coordinator Mr. Shettima for his support. Also to all our critics and supporters, I love you all.

Also, I would appreciate the effort, financial support and advise of my lovely parents; Rev'd Ezekiel Amumi Dogo throughout my programme.

Finally, but not the least, I appreciate all other lecturers in computer science.

ABSTRACT

The avoidance of duplication plagiarism of project carried out by student in all academic endeavor/discipline has been the aim of every institution to eradicate plagiarism in all educational environment, especially Federal Polytechnic Bida. Today, technology has advanced and coordinators of various departments can have an ocean of project record/copies done by student for several years so as to check and discard duplications. Currently student project are kept or arranged in the shelf within the departmental library and school library for future reference. This project titled “Design and Implementation of Project Database Management SYSTEM (a Case Study of Computer Science Department)” is aimed at developing a web based system which manage the activity of "student project" this system will manage the data base and maintain a list of all student groups of student that have registered as a final list. The programming language used is PHP, CSS, and XAMMP.

TABLE OF CONTENTS

TITLE PAGE	i
CERTIFICATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS.....	vi
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 BACKGROUND OF STUDY	2
1.2 STATEMENT OF THE PROBLEM	3
1.3 OBJECTIVES OF THE STUDY	4
1.4 SIGNIFICANCE OF THE STUDY	4
1.5 SCOPE OF THE STUDY.....	6
1.6 LIMITATIONS OF THE STUDY	6
1.7 DEFINITION OF TERMS	6
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 REVIEW OF DOCUMENT MANAGEMENT SYSTEM	9
2.2 WHAT STUDENT PROJECT MANAGEMENT ENTAILS	9
2.3 THE EXISTING SYSTEM OF STUDENT PROJECT MANAGEMENT	11
2.4 TRENDS IN INFORMATION TECHNOLOGY	11
2.5 RICH INTERNET APPLICATION	13
2.6 PROJECT LIFE CYCLE	14
2.7 THE TRADITIONAL TRIPLE CONSTRAINTS	16
2.8 PROJECT CONTROL SYSTEMS	17
2.9 PROJECT SCOPE.....	18
CHAPTER THREE	19
SYSTEM ANALYSIS AND DESIGN.....	19
3.0 INTRODUCTION	19
3.1 ANALYSIS OF THE EXISTING SYSTEM.....	19
3.1.1 Advantages of the Existing System	19
3.1.2 Disadvantages of the Existing System	20
3.2 ANALYSIS OF THE PROPOSED SYSTEM	20
3.2.1 Advantages of the Proposed System	21
3.3 SOFTWARE DEVELOPMENT METHODOLOGY.....	21

3.4 SYSTEM DESIGN INTERFACE	22
Table 3.4.1: Database Creation for Input.....	27
3.4.2 Output Design	27
3.5 SOFTWARE DESIGN TECHNIQUES	30
3.5.1 Data Flow Diagram	30
3.5.2 System Flowchart	31
3.5.3 Use Case Diagram.....	33
3.5.4 Class Diagram	34
3.6 PROGRAMMING LANGUAGE JUSTIFICATION.....	38
3.6.1 PHP Programming language	38
3.6.2 MySQL	39
CHAPTER FOUR	40
IMPLEMENTATION	40
INTRODUCTION	40
4.1 SYSTEM REQUIREMENTS.....	40
4.1.1 Hardware Requirements.....	40
4.1.2 Software Requirements	40
4.2 Installing the Application	41
4.2.1 Installing The Web Server	42
4.2.2 Using XAMMP	43
4.3 SETTING UP MYSQL DATABASE.....	43
4.4 Testing The Application.....	43
4.5 Running The Program	44
CHAPTER FIVE	45
SUMMARY, CONCLUSION AND RECOMMENDATION	45
5.1 SUMMARY	45
5.2 CONCLUSION.....	45
5.3 RECOMMENDATIONS.....	45
REFERENCES.....	47
APPENDIX A	
APPENDIX B	

CHAPTER ONE

1.0 INTRODUCTION

One of the recent advances in the world of information technology is the rapid development of communication which has turned the world into a global village, we can send mails electronically (e-mail), search for information (www), buy goods online (e-commerce), withdraw/transfer money (e-banking), school online (e-learning); this has affected the society positively to a great extent, as a result, computerization of project management should not be exempted in this revolution.

Project Management (PM) is the discipline of planning, organizing, and managing resources to bring about the successful completion of a specific project goals and objectives. A project is a finite endeavor having a specific start and completion date, undertaken to create a unique product or service which brings about beneficial change or added value. This finite characteristic of a project stand in sharp contrast to processes, or operations, which are permanent or semi-permanent functional works to repetitively produce the same product or service. In practice, the management of these two systems is often found to be quite different, and as such requires the development of distinct technical skills and the adoption of separate management philosophy, which is the subject of this study.

The primary challenge of project management is to achieve all of the project goals and objectives while adhering to classic project constraints usually scope, quality, time and budget. The secondary and more ambitious challenge is to optimize the allocation and integration of inputs necessary to meet pre-defined objectives. A project is a carefully defined set of activities that use resources (money, people, materials, energy, space, provisions, communication, motivation, etc.) to achieve its goals and objectives.

Project management is quite often the province and responsibility of an individual project manager. This individual seldom participates directly in the activities that

produce the end result, but rather strives to maintain the progress and productive mutual interaction of various parties in such a way that overall risk of failure is reduced. A project manager is often a client representative and has to determine and implement the exact needs of the client, based on knowledge of the firm they are representing. The ability to adapt to the various internal procedures of the contracting party, and to form close links with the nominated representatives, is essential in ensuring that the key issues of cost, time, quality, and above all, client satisfaction, can be realized.

Regardless of the approach employed, careful consideration needs to be given to clarify surrounding project objectives, goals, and importantly, the roles and responsibilities of all participants and stakeholders. In software development, this approach is often known as “waterfall development”, i.e., one series of tasks after another in linear sequence. In software development many organizations have adapted the Rational Unified Process (RUP) to fit this methodology, although RUP does not require or explicitly recommend this practice. Waterfall development can work for small tightly defined projects, but for larger projects of undefined or unknowable scope, it is less suited.

The Cone of Uncertainty explains some of this as the planning made on the initial phase of the project suffers from a high degree of uncertainty. This becomes specially true as software development is often the realization of a new or novel product, this method has been widely accepted as ineffective for software projects where requirements are largely unknowable up front and susceptible to change. While the names may differ from industry to industry, the actual stages typically follow common steps to problem solving “defining the problem, weighing options, choosing a path, implementation and evaluation.”

1.1 BACKGROUND OF STUDY

In many tertiary institutions in the country, students seek a project in a given field of specialty as part of the upper level of their degree program. Usually, a project

can be filled by at most one student, though in some cases a project is suitable for more than one student to work on simultaneously. To give students something of a choice, there should be as wide a range of available projects as possible, and in any case the total number of project places should not be less than the total number of students. Typically a lecturer will also offer a range of projects, but does not necessarily expect that all will be taken up.

Each student has preferences over the available projects that he/she finds acceptable, whilst a lecturer will normally have preferences over the students that he/she is willing to supervise. There may also be upper bounds on the number of students that can be assigned to a particular project, and the number of students that a given lecturer is willing to supervise. In this paper we consider the ways of allocating student project in our various institutions.

1.2 STATEMENT OF THE PROBLEM

It has become widely recognized that manual storage of student projects has inherent problems. Looking at our polytechnic, students submit hard copies of projects to their various departmental libraries. The disadvantages of this manual method are as listed below;

1. Possibility of repeating project topics without detection by a project supervisor.
2. Records of project topics carried out by a student are stored in the departmental library for a long time which occupies valuable office space.
3. Projects are prone to loss due to natural disasters such as fire outbreak.
4. Difficulty in searching for project topics already done.
5. Projects cannot be accessed outside the polytechnic, that is, it has the problem of geographical barrier.
6. Backing up projects becomes a problem since more space will be employed.

Faced with the need to organize projects, the proposed system for management of student projects is unique and totally innovative in its integrated approach. Its functionality of making project storage easier makes it called for. The system to be developed makes use of rich internet technology to replace desktop application with web application running on a remote server. The system shares the advantage of both web application and desktop application, and removes the most disadvantages of both.

1.3 OBJECTIVES OF THE STUDY

The aim of this research study is to develop a student project management system for this polytechnic to effectively manage students' research projects.

The objectives of this research study are as listed below;

1. To design a database for storing and comparison of project topics.
2. To implement the system using MySQL and PHP
3. To test the student project management system.
4. To prevent further duplication of student project.

1.4 SIGNIFICANCE OF THE STUDY

The significance of this study is to move from manual documentation of projects to computerized documentation of projects for easy retrieval, storage, accuracy and security. This research work will offer the following advantages to the various departments in the federal polytechnic Bida;

Reduced Storage: The cost of commercial property and the need to store documentation for e.g. retrieval, regulatory compliance means that paper based project storage competes with people for space within an organization. Scanning

projects and integrating them into a project management system can greatly reduce the amount of prime storage space required by paper.

Flexible Indexing: Indexing paper in more than one way can be done, but it is awkward, costly and time-consuming. Images of projects stored within a project management system can be indexed in several different ways simultaneously.

Improved, faster and more flexible search: Project Management Systems can retrieve files by any word or phrase in the document – known as full text search – a capability that is impossible with paper.

Sensitive projects: Many project management system solutions allow access to projects to be controlled. **Improved Security:** A project management system can provide better, more flexible control over at the folder and/or document level for different groups and individuals. Paper projects stored in a traditional filing cabinet or filing room does not have the same level of security i.e. if you have access to the cabinet you have access to all items in it.

Disaster Recovery: A project management system provides an easy way to back-up projects for offsite storage and disaster recovery providing failsafe archives and an effective disaster recovery strategy. Paper is a bulky and expensive way to back-up records and is vulnerable to fire, flood, vandalism and theft.

No Lost Files: Lost projects can be expensive and time-consuming to replace. Within a Project Management System, imaged projects remain centrally stored when being viewed, so none are lost or misplaced. New documents are less likely to be incorrectly filed and even if incorrectly stored can be quickly and easily found and moved via the full-text searching mechanisms.

Digital Archiving: Keeping archival versions of projects in a project management system helps protect paper documents that still have to be retained, from over-handling.

1.5 SCOPE OF THE STUDY

The scope of this project covers Students' Research Project Management in our Polytechnic. This scope will be achieved in the following areas;

1. Keeping track of research projects both approved and completed.
2. Harnessing the energy of staff at a faster pace.
3. Managing complex changes in an organized way.
4. Retrieving data as at when required.

1.6 LIMITATIONS OF THE STUDY

The research work, project database management system is mainly prepared for the computer science department of Federal Polytechnic Bida, to put an end to project duplication.

1. Reluctance by the officials to freely give out official information on how projects are being managed.
2. Financial implication of the research work.

1.7 DEFINITION OF TERMS

Project: A project is a research or design which is carefully planned to achieve a particular aim under a specified time constraint. An ongoing project is usually called (or evolves into) a program.

Milestone: A significant event in the project, usually completion of a major deliverable. A milestone, by definition, has duration of zero and no effort.

Computerization: The act of introducing a computer system or of changing from a manual to a computer system.

Action Plan: A description of what needs to be done, when and by whom, to achieve the results called for by one or more objectives. It contains task assignments, schedules, and resource allocations.

Assumption: There may be external circumstances or events that must occur for the project to be successful (or that should happen to increase your chances of success). If you believe that the probability of the event occurring is acceptable, you could list it as an assumption. An assumption has a probability between 0 and 100%. That is, it is not impossible that the event will occur (0%) and it is not a fact (100%). It is somewhere in between. Assumptions are important because they set the context in which the entire remainder of the project is defined. If an assumption doesn't come through, the estimate and the rest of the project definition may no longer be valid.

Closure: The act of completing a project or a phase of a project, either because it has been completed or because it's being terminated early.

Corrective Action: This is an action taken to eliminate the causes of an existing non-conformity or other undesirable situation. Changes made to bring expected future performance of a project.

Cost Management: The function required to maintain effective financial control of a project through the processes of evaluating, estimating, budgeting, monitoring, analyzing, forecasting, and reporting the cost.

Critical Path: The sequence of activities that must be completed on schedule for an entire project to be completed on schedule. Each task on the critical path is called a critical task.

Data: A collection of facts made up of numbers, characters and symbols stored on computers in such a way that it can be processed by the computers.

Gantt Chart: A Gantt chart is a bar chart that depicts activities as blocks over time. The beginning and end of the block correspond to the beginning and end-date of the activity. It is a project management tool.

Information: Important and useful facts obtained as output from a computer by means of process input data with a program.

Program: A Software designed for a certain use, such as word processing, electronic made, or spreadsheet entries. Sometimes it is called application.

TCP/IP: This often used but little understood set of operations stands for Transmission Control Protocol/Internet Protocol. TCP/IP is the combination of the two and describes the set of protocols that allows hosts to connect to the Internet. In actuality, TCP/IP is a combination of more than those two protocols, but the TCP and IP parts of TCP/IP are the main ones and the only ones to become part of the acronym that describes the operations involved

TEXT FILE: A text file is a computer file that stores a typed document as a series of alphanumeric characters, usually without visual formatting information. The content may be a personal note or list, a journal or newspaper article, a book, or any other text that can be rendered accurately in typewritten form.

Hyper Link: A hyperlink is a graphic or a piece of text in an Internet document that can connect readers to another webpage, or another portion of a document. Web users will usually find at least one hyperlink on every webpage. The simplest form of these is called embedded text or an embedded link.

CHAPTER TWO

LITERATURE REVIEW

2.1 REVIEW OF DOCUMENT MANAGEMENT SYSTEM

Organizations produce piles of documents, images and other information electronically. The location of this information is a time-consuming task. Users tend to file papers and to save documents in folders and files. Hence Nobody knows what information is across the company and what information is needed. Information management has become a major strategic factor in companies' development. It is important to get the right information circulated to the right people, as efficiently as possible, yet still keep it secure. Document management provides a way for companies to organize their information, in all its forms, in one place. It provides functionalities such as version control and file history, metadata, scanning, workflow, search, and more. It also allows the social activities around content to be used to connect people to other people, information to information, and people to information; helping to manage, more efficiently, the collective intelligence of the human resources of the company.

2.2 WHAT STUDENT PROJECT MANAGEMENT ENTAILS

A project is a research study carried out by a student with the aim of solving an already identified problem. The word "research" originates from the medieval French word 'rechercher', meaning "to seek closely." In its most general sense, research involves investigating a topic to learn more about it. Typically, one conducts research to answer questions. Often, as one learns more about a topic, initial questions generate additional questions. Sometimes the purpose of research is simply to increase one's factual knowledge (Robin Henderson, 2010). More often, however, research involves going beyond mere fact collecting. It requires one to analyze, or interpret, the information gathered and

to draw conclusions from it. A research paper thus usually includes a thesis statement that makes a claim about the topic, followed by evidence to make a persuasive argument. Research comprises “creative work” undertaken on a systematic basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications. It is used to establish or confirm facts, reaffirm the results of previous work, solve new or existing problems, support theorems or develop new theories. A research project may also be an expansion on past work in the field. The primary purposes of basic research are documentation, discovery, interpretation, or the research and development of methods and systems for the advancement of human knowledge.

A system can be defined as a network of interrelated procedures that are joined together to perform an activity or accomplish a specific objective (Jerry, A.F., 2008). A system could be classified as being open or closed. A closed system is one which automatically controls or modifies its own operation by responding to data generated by the system itself. It seldom if ever interacts with its environment to receive input or generate output (Wetherbe, J. C., 2009). An open system is one which does not provide for its own control or modification. It does not supervise itself so it needs to be supervised by people. A management information system can be defined as the development and use of effective information systems in organization (Hatch, K., 2000). He adds on that an information system is effective if it helps to accomplish the goals of the people and the organization that use it. An Information system is an open system that seeks a set of related goals, producing information using the input-output cycle (Acoff, Russell, 1999). A student project management system can therefore be defined as a system that effectively manages student projects and allows for quick and easy retrieval. The student project management system should be able to effectively store student projects carried out over the years,

ensure accurate and easy retrieval of projects and prevent repetition of project topics.

2.3 THE EXISTING SYSTEM OF STUDENT PROJECT MANAGEMENT

Student Project management is currently done manually in the Federal Polytechnic Bida. The steps involved in the existing system are;

1. A student submits a hard copy of the project to the departmental officer in charge of projects.
2. The student registers his/her name and matriculation number in the registry.
3. After project defence, the student retrieves the project if any corrections were made by the external supervisor and resubmits it.
4. The submitted project is then kept on a shelf in the departmental library.



Figure 2.1: Stored projects in the departmental library

2.4 TRENDS IN INFORMATION TECHNOLOGY

The evolution in the Information Technology sector has brought invaluable changes to every aspect of our life including science, medicine, manufacturing

and production processes, hence, the aspect of student project management cannot be left unaffected.

Let us consider the trend in information technology. The motto of the Software and Information Industry Association was “Putting Information at your Fingertips”. This was greatly propounded by the Microsoft founder, Bill Gates who, on November 14, 1994, gave a keynote address at Fall Comdex. A section read as follows:

“Today’s CD-ROM and online services are wonderful examples of software that prepares us for the possibilities of the future. Imagine the best of both mediums combined and running on a high-bandwidth, high-speed network, high-capacity, shared storage that enables up-to-date, rich, multimedia content to be accessed by many people. By 2005, there will be applications that relate to all aspects of our lives.” (Bill Gate, 1994).

“At the center of this will be the idea of digital convergence. That is, taking all the information- books, catalogs, shopping approaches, professional advice, art, movies- and taking those things in their digital form, ones and zeros, and being able to provide them on demand on a device looking like a TV, a small device you carry around, or what the PC will evolve into.” – Bill Gate, “Information at Your Fingertips-2005”.

We can see today that Bill Gates prediction is actually realized as Applications Able to deliver Access to Anyone Authorized Anytime, Anywhere on Any device is being modeled daily. This is called the 8A’s principle.

Though System Application Architecture (SAA) from IBM is the first attempt to comply this rule, It is still a challenge now in the software development to develop the 8A’s software distributed over n-tiers as simply as possible. The requirement from the 8A makes the software development to become increasingly complex, because 8A’s rule imply that the application is not

confined in one machine but distributed into many tiers with similar interface; hence the need for rich internet resources in any efficient information system.

2.5 RICH INTERNET APPLICATION

The rich internet application is a simple way to achieve the 8As. The rich internet application describes an online application or utility that includes a level of functionality and interface complexity formerly ascribed only to desktop applications. Ajax as one of the most recent web2.0 rich internet technology is used through the project. The applications use well-documented features present in all major browsers on most existing platforms. At the time of writing, Ajax applications are effectively cross-platform solution.

Ajax deliver content in the form most appropriate to the message, as it uses DHTML/XML as the primary message carrier. It makes development of the interface an easier task because HTML is friendlier to information than the typical programming language. For example: How much effort do you need to represent the following HTML in JAVA GUI?

`<center>Bold Font</center>` Ajax application as one type of rich internet application shares the advantages of both typical desktop client (heavy client) and web application client (thin client)

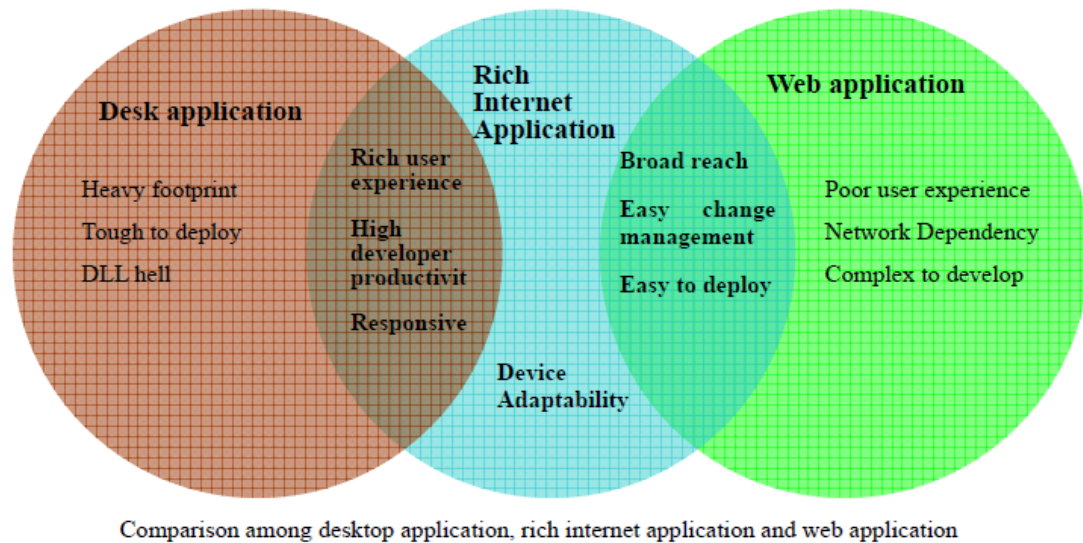


Figure 2.2: Desktop, Web and Rich internet application

Particularly, compared to the desktop application, Rich internet application including AJAX shares a number of advantages:

1. No client installation required. use can start use a program immediately.
2. Users can use the application from any computer with an internet connection, and mostly platform independent.
3. Web-based applications are generally less prone to viral infection than running an actual executable file on your local machine.
4. If there is a web alternative version available, users are unlikely to install new software.

2.6 PROJECT LIFE CYCLE

Every project has a beginning, a middle period during which activities move the project toward completion, and an ending (either successful or unsuccessful). A standard project typically has the following four major phases (each with its own agenda of tasks and issues): initiation, planning, implementation, and closure.

- i. **Initiation Phase:** During this phase, the project objective or need is identified.

An appropriate response to the need is documented with recommended solution options. A feasibility study is conducted to investigate whether each option addresses the project objective and a final recommended solution is determined. Issues of feasibility (“can we do the project?”) and justification (“should we do the project?”) are addressed.

- ii. **Planning Phase:** This is where the project solution is further developed in as much detail as possible and the steps necessary to meet the project’s objective are planned. In this step, the team identifies all of the work to be done. The project’s tasks and resource requirements are identified, along with the strategy for producing them. This is also referred to as “scope management.” A project plan is created outlining the activities, tasks, dependencies, and timeframes. The project manager coordinates the preparation of a project budget by providing cost estimates for the labor, equipment, and materials costs. The budget is used to monitor and control cost expenditures during project implementation.
- iii. **Implementation (Execution) Phase:** During this phase, the project plan is put into motion and the work of the project is performed. It is important to maintain control during implementation. Progress is continuously monitored and appropriate adjustments are made and recorded as variances from the original plan. In any project, a project manager spends most of the time in this step. The project manager maintains control over the direction of the project by comparing the progress reports with the project plan to measure the performance of the project activities and take corrective action as needed.
- iv. **Closing Phase:** During the completion phase, the emphasis is on releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources, and communicating the closure of the project to all stakeholders. The last remaining step is to conduct lessons-learned studies to examine what went well and what

didn't. Through this type of analysis, the wisdom of experience is transferred back to the project organization, which will help future projects.

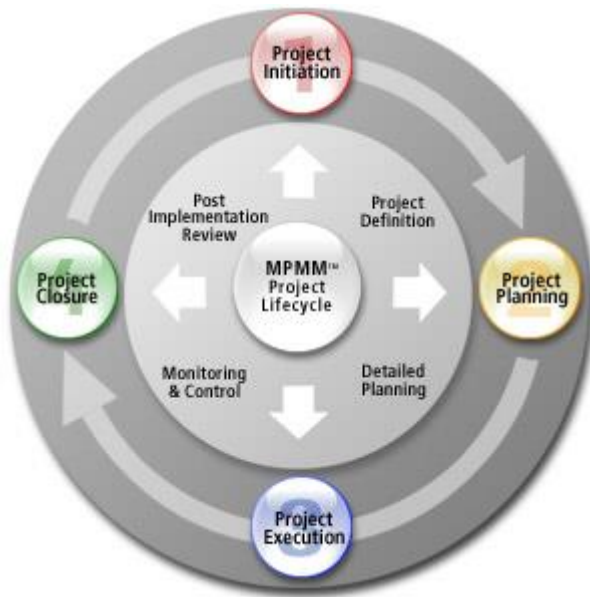


Figure 2.3: Project life cycle.

2.7 THE TRADITIONAL TRIPLE CONSTRAINTS

Like any human undertaking, projects need to be performed and delivered under certain constraints. Traditionally, these constraints have been listed as "scope," "time," and "cost" (Phillips, 2003). These are also referred to as the "Project Management Triangle," where each side represents a constraint. One side of the triangle cannot be changed without affecting the others. A further refinement of the constraints separates product "quality" or "performance" from scope, and turns quality into a fourth constraint.

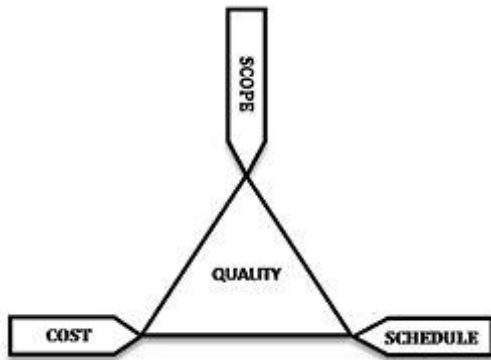


Figure 2.4: Project Management Triangle.

1. The time constraint refers to the amount of time available to complete a project.
2. The cost constraint refers to the budgeted amount available for the project.
3. The scope constraint refers to what must be done to produce the project's end result.

2.8 PROJECT CONTROL SYSTEMS

Project control is that element of a project that keeps it on-track, on-time, and within budget (Lewis, 2000). Project control begins early in the project with planning and ends late in the project with post-implementation review, having a thorough involvement of each step in the process. Each project should be assessed for the appropriate level of control needed; too much control is time consuming, too little control is very risky. If project control is not implemented correctly, the cost to the business should be clarified in terms of errors, fixes, and additional audit fees. Control systems are needed for cost, risk, quality, communication, time, change, procurement, and human resources. In addition, auditors should consider how important the projects are to the financial statements, how reliant the stakeholders are on controls and how many controls exist (Lewis, 2000). Auditors should review the development process and procedures for how they are implemented. Businesses sometimes use formal systems development processes. These help assure that systems are developed

successfully. A formal process is more effective in creating strong controls, and auditors should review this process to confirm that it is well designed and is followed in practice. A good formal systems development plan outlines:

- ❖ A strategy to align development with the organization's broader objectives
- ❖ Standards for new systems
- ❖ Project management policies for timing and budgeting
- ❖ Procedures describing the process

2.9 PROJECT SCOPE

Most literature on project management speaks of the need to manage and balance three elements: people, time, and money. However, the fourth element is the most important and it is the first and last task for a successful project manager. First and foremost you have to manage the project scope.

The project scope is the definition of what the project is supposed to accomplish and the budget (of time and money) that has been created to achieve these objectives (Ireland, 2006). It is absolutely imperative that any change to the scope of the project have a matching change in budget, either time or resources. Usually, scope changes occur in the form of "scope creep". Scope creep is the piling up of small changes that by themselves are manageable, but in aggregate are significant. You cannot effectively manage the resources, time and money in a project unless you actively manage the project scope. When you have the project scope clearly identified and associated to the timeline and budget, you can begin to manage the project resources. These include the people, equipment, and material needed to complete the project (Ireland, 2006).

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.0 INTRODUCTION

Analysis is the process of carrying out detailed investigation on an existing system with the view of designing or developing a new system or modifying the existing one. System analysis is the study of a set of interacting entities. System development can generally be thought of as having two major components: systems analysis and systems design. In System Analysis more emphasis is given to understanding the details of an existing system or a proposed one and then deciding whether the proposed system is desirable or not and whether the existing system needs improvements. Thus, system analysis is the process of investigating a system, identifying problems, and using the information to recommend improvements to the system.

In this chapter, we will present the analyses and limitations of the existing system as well as that of the proposed system and also expound the design of the proposed system putting into consideration the flow diagram, input design, output design, database design and the flowchart of the proposed system.

3.1 ANALYSIS OF THE EXISTING SYSTEM

Student Project management is currently done manually in the federal polytechnic bida. Hard copies of projects are received, sorted and processed by each department in the polytechnic and stored in the departmental library.

3.1.1 Advantages of the Existing System

The existing system of Student Project management has the following advantages:

1. Special skills are not required to operate the existing system.

2. The existing system does not rely on electric power to function. Hence, the erratic nature of power supply in Nigeria does not affect its availability and performance.

3.1.2 Disadvantages of the Existing System

Though the existing system of Student Project management seems effective, there are some difficulties inherent in the system. Some of these difficulties are;

1. Inefficient office space management.
2. Time consuming retrieval of projects to be accessed: normally it takes the researcher much time before he/she can locate or retrieve required project among the numerous project copies in the shelf.
3. Loss of valuable projects can occur due to fire outbreak and other natural disasters.
4. Projects cannot be accessed outside the polytechnic, that is, it has the problem of geographical barrier.
5. Backing up projects becomes a problem since more space will be employed.
6. Time consuming: a transaction can take up to three days or more.
7. Prone to error and inconsistencies.

3.2 ANALYSIS OF THE PROPOSED SYSTEM

Faced with the incredibility of the existing system in recording information, the proposed computerized system will go a long way to minimize the long aged inefficiency and ineffectiveness of the current system. The proposed system is easy to use and allows users store and retrieve projects easily. In the proposed system, students will submit both hard and soft copies of their projects, the hard copy will be destroyed after two years to free office space. It consists of two main user categories: the general user and the administrator. Though each user has different

levels of privilege, the administrator has all privileges available in the system. The entire system consists of the client and server section. The client section is what application users can see and interact with through the browser on the machines. The server section is where the processing logic resides and home for the database for storing information. The client side is designed using Hypertext Markup Language (HTML) and Cascading Style Sheet (CSS), while the application logic is developed using Hypertext Preprocessor (PHP). The database used is My SQL sitting on XAMMP which is the local server.

3.2.1 Advantages of the Proposed System

The proposed system seeks to improve on the existing system by overcoming the shortcomings inherent in the existing system. The advantages are;

1. It is very fast, hence it promotes instant transactions or processes.
2. It can be accessed from any geographical location, using any device that supports internet resources, hence geographical limitation is completely eliminated.
3. Once installed, it is easy to operate and maintain.
4. Projects can easily be duplicated and backed up, hence the danger of losing important documents is reduced.
5. It has an efficient space management system since projects could be stored on a computer.

3.3 SOFTWARE DEVELOPMENT METHODOLOGY

A software development methodology or system development methodology in software engineering is a framework that is used to structure, plan, and control the process of developing an information system. The methodology adopted in the analysis and design of the proposed system is Dynamic Systems Development Model Methodology (DSDM).

The Dynamic Systems Development Model was developed in the U.K. in the mid-1990s. It is the evolution of rapid application development (RAD) practices. DSDM boasts the best-supported training and documentation of any of the agile software development techniques. DSDM favors the philosophy that nothing is built perfectly the first time and looks to software development as an exploratory endeavor. This is the main reason the researcher has adopted this methodology.

The nine principles of DSDM are:

- ❖ Active user involvement.
- ❖ Empowered teams that the authority to can make decisions.
- ❖ A focus on frequent delivery of products.
- ❖ Using fitness for business purpose as the essential criterion for acceptance of deliverables.
- ❖ Iterative and incremental development to ensure convergence on an accurate business solution.
- ❖ Reversible changes during development.
- ❖ Requirements that is baseline at a high level.
- ❖ Integrated testing throughout the life cycle.
- ❖ Collaboration and cooperation between all stakeholders.

3.4 SYSTEM DESIGN INTERFACE

The system design encompasses how records will be entered (input), processed and generated (output) in the computerized project management system. The design of the new system is to aid the user in effective and efficient documentation; it is user friendly, all you do is follow the instruction, then click, it is interactive and menu

driven. The format for the input, process and output of the computerized project management system is as follows:

3.4.1 Input Design Specification

The input design illustrates a situation where users of the system enter data into required fields. Each transaction in the system requires input or data. These data are then processed by the system to produce the desired output of the system. For the proposed system, input is in form of a document. The input required for this system is in three tables;

1. Login Form: This form contains username and password for both the admin and the other users

The diagram shows a rectangular box representing a login form. Inside the box, there are two input fields. The first field is preceded by the label 'Username:'. The second field is preceded by the label 'Password:'. Below these two fields, centered, is a button labeled 'Login'.

Figure 1.1: Login Form

Table 1.1:

FIED DESCRIPTTON	FIELD NAME	FIED TYPE	FIELD WIDTH
USERNAME	USER	CHARACTER	20
PASSWORD	PASSWORD	INTEGER	10

2. **Sign Up Form 2:** This form contain Username Email and Password

Sign Up

User Name

Email

Password

Sign Up Table 2

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH
User Name	User Name	Character	15
Email	Email	Character	20
Password	Password	Integer	10

3.1 Form 3: it contains First Name, Last Name, Email and Password

Welcome to Admin

Last Name me

Username

E-mail

Password

Table 3: Welcome Admin

FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH
First Name	First Name	Character	20
Last Name	Last Name	Character	15
Username	Username	Character	10
Email	Email	Character	10
Password	Password	Integer	9

Table 4

Add Project Table: this form contains the necessary fields to be entered before adding a project to the database.

File Number	<input type="text"/>
Project Topic	<input type="text"/>
Project Supervisor	<input type="text"/>
Name of Student	<input type="text"/>
Approval Date	<input type="text"/>
Project Comment	<input type="text"/>
Project Completion Date	<input type="text"/>
Time of Computer	<input type="text"/>
Attach Copy	<input type="text"/>
Project Remark	<input type="text"/>
Add Project	

Figure 3.2: Add Project table.

To create the database, we need to specify the various field description, field name, field type, and field width that would hold the data the user inputs.

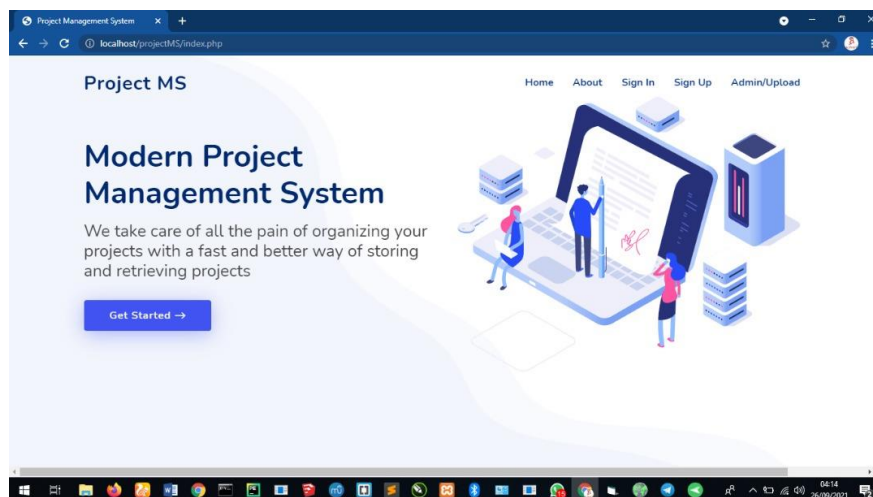
Table 3.4.1: Database Creation for Input

Field Description	Field Name	Field Type	Field Width
Project file number	File No	Character	12
Project topic	Topic	Character	30
Project Supervisor	Supervisor	Character	15
Date of Approval	Approval Date	Date	8
Project Commencement	Start	Date	8
Proposed Completion date	Completed	Date	8
Time of Completion	Project Duration	Character	10
Attach copy	Attach	character	50
Project Remark	Remark	Character	30

3.4.2 Output Design

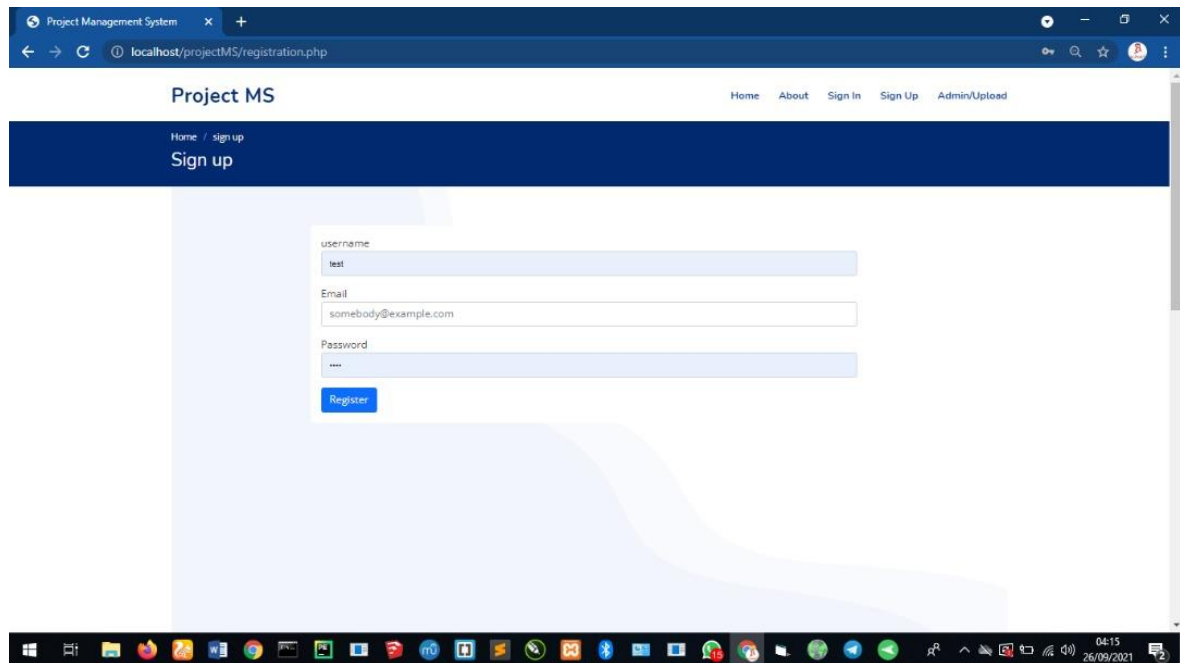
Output is the result obtained from the system. Designed, this will include login interface, authentication and others.

Figure 1



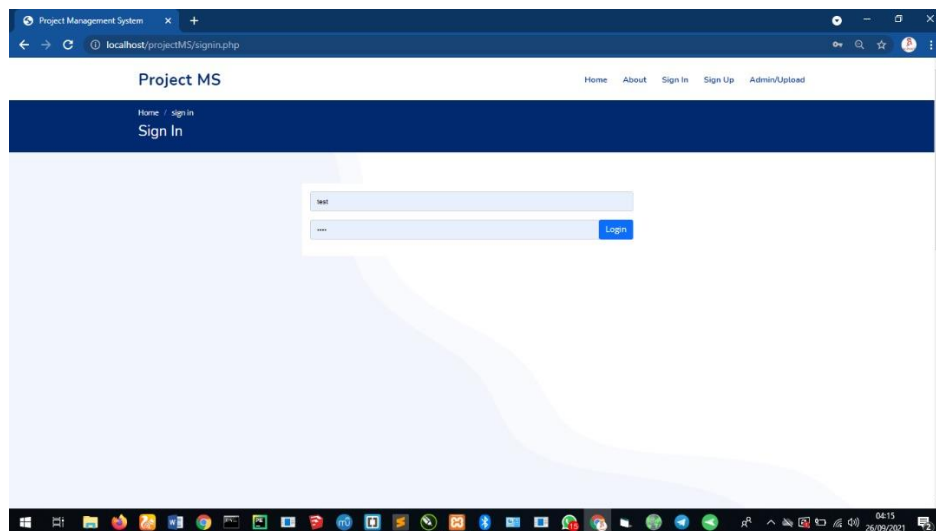
HOME PAGE: Is the first interface to see after the program is initiated, the user click get started tab on the welcome page to which lead him/her.

Figure 2



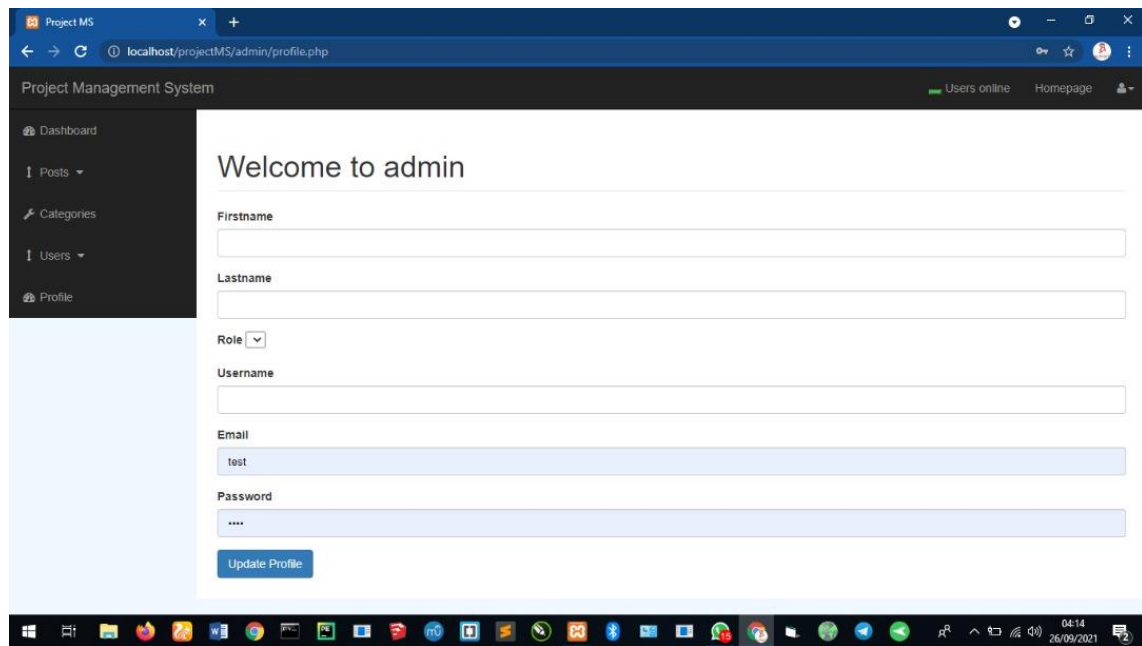
SIGN UP: This is the authentication page where the user will be required to provide the username, e-mail and password for the user to be registered.

Figure 3



SIGN IN: Here the user enter his/her username and password to gain access to the other facilities.

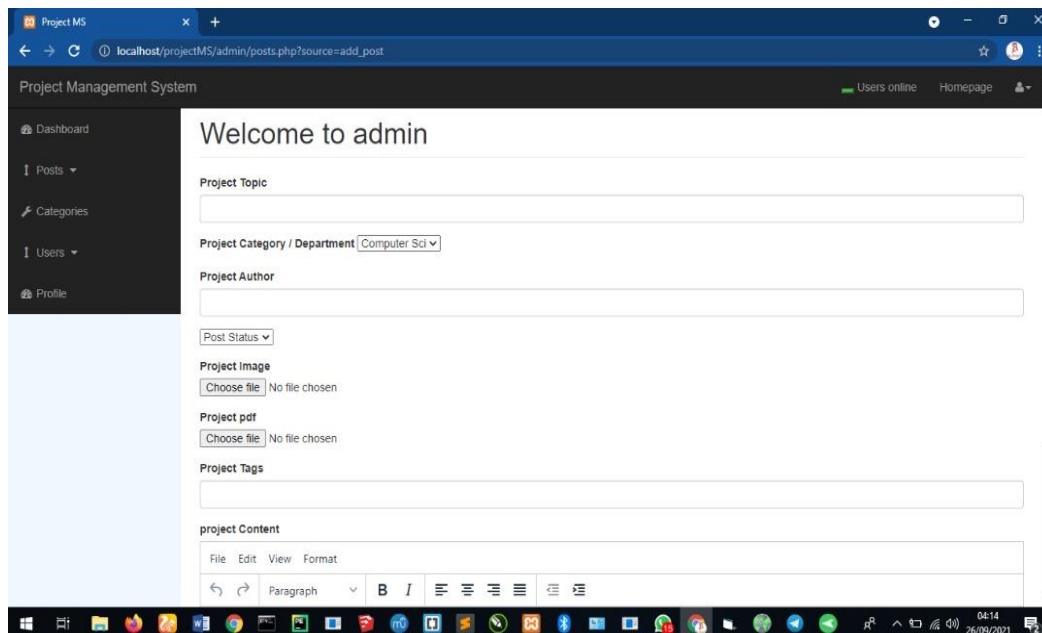
Figure 4



The screenshot shows a web browser window with the URL `localhost/projectMS/admin/profile.php`. The page title is "Project Management System". On the left is a dark sidebar with a menu containing "Dashboard", "Posts", "Categories", "Users", and "Profile". The main content area is titled "Welcome to admin" and contains a registration form with the following fields: "Firstname", "Lastname", "Role" (a dropdown menu), "Username", "Email" (containing the text "test"), and "Password" (containing four dots). Below the password field is a blue "Update Profile" button. The browser's taskbar at the bottom shows various application icons and the system clock indicating 04:14 on 26/09/2021.

WELCOME ADMIN: This is a page where the project coordinator also registers him/her self by providing the particulars in order to gain access to the entire program.

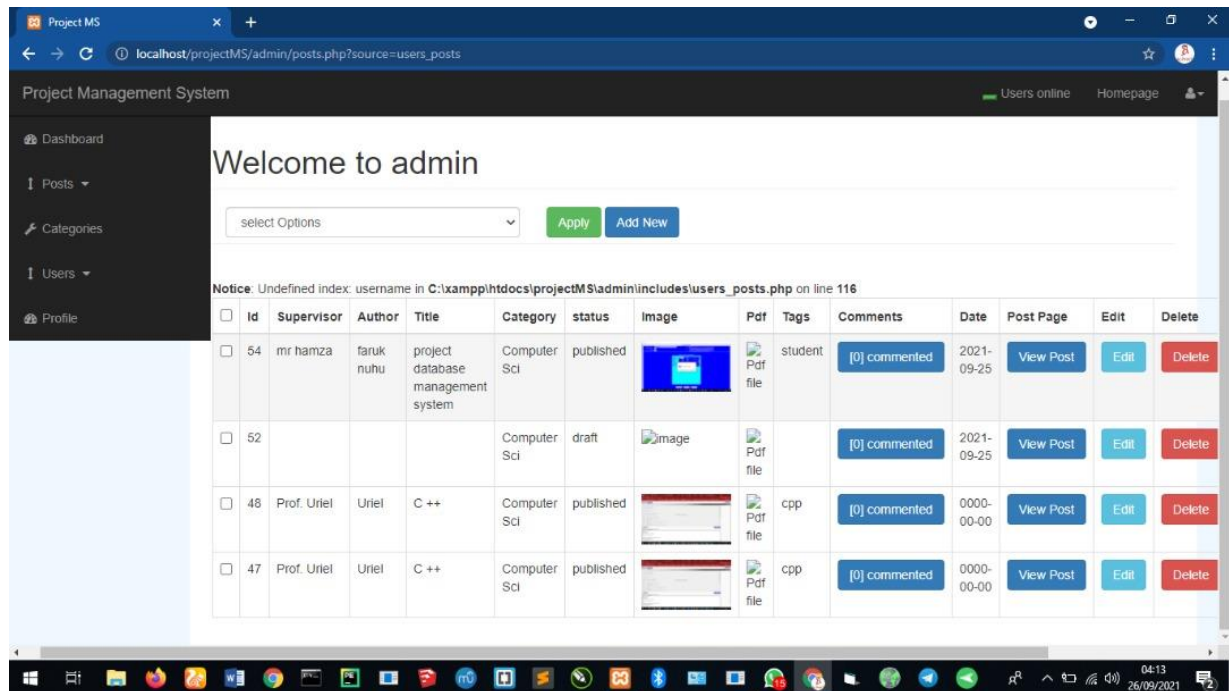
Figure 5



The screenshot shows a web browser window with the URL `localhost/projectMS/admin/posts.php?source=add_post`. The page title is "Project Management System". The sidebar is identical to Figure 4. The main content area is titled "Welcome to admin" and contains a form for adding a new post. The fields include: "Project Topic", "Project Category / Department" (a dropdown menu with "Computer Sci" selected), "Project Author", "Post Status" (a dropdown menu), "Project Image" (with a "Choose file" button and "No file chosen" text), "Project pdf" (with a "Choose file" button and "No file chosen" text), "Project Tags", and "project Content" (a rich text editor with a toolbar showing options like File, Edit, View, Format, Paragraph, Bold, Italic, and text alignment). The browser's taskbar at the bottom shows various application icons and the system clock indicating 04:14 on 26/09/2021.

This allow the user to upload his/her project topic and complete PDF.

Figure 6



This page allow the admin to view and comment on the student file.

3.5 SOFTWARE DESIGN TECHNIQUES

3.5.1 Data Flow Diagram

This is a diagrammatic representation of how the student project management system actually works. It helps to clarify how the system is currently working and how it could be improved. The flow diagram indicates the lines where one process ends and the next one starts. The diagram in fig 3.4 is a flow diagram of the student project management system. The user who could be anyone that wishes to use the system is verified to be an authorized user i.e. authenticating the user. The authenticated user is allowed to enter the project details which is held in a data file and could be used when queries are made to the system.

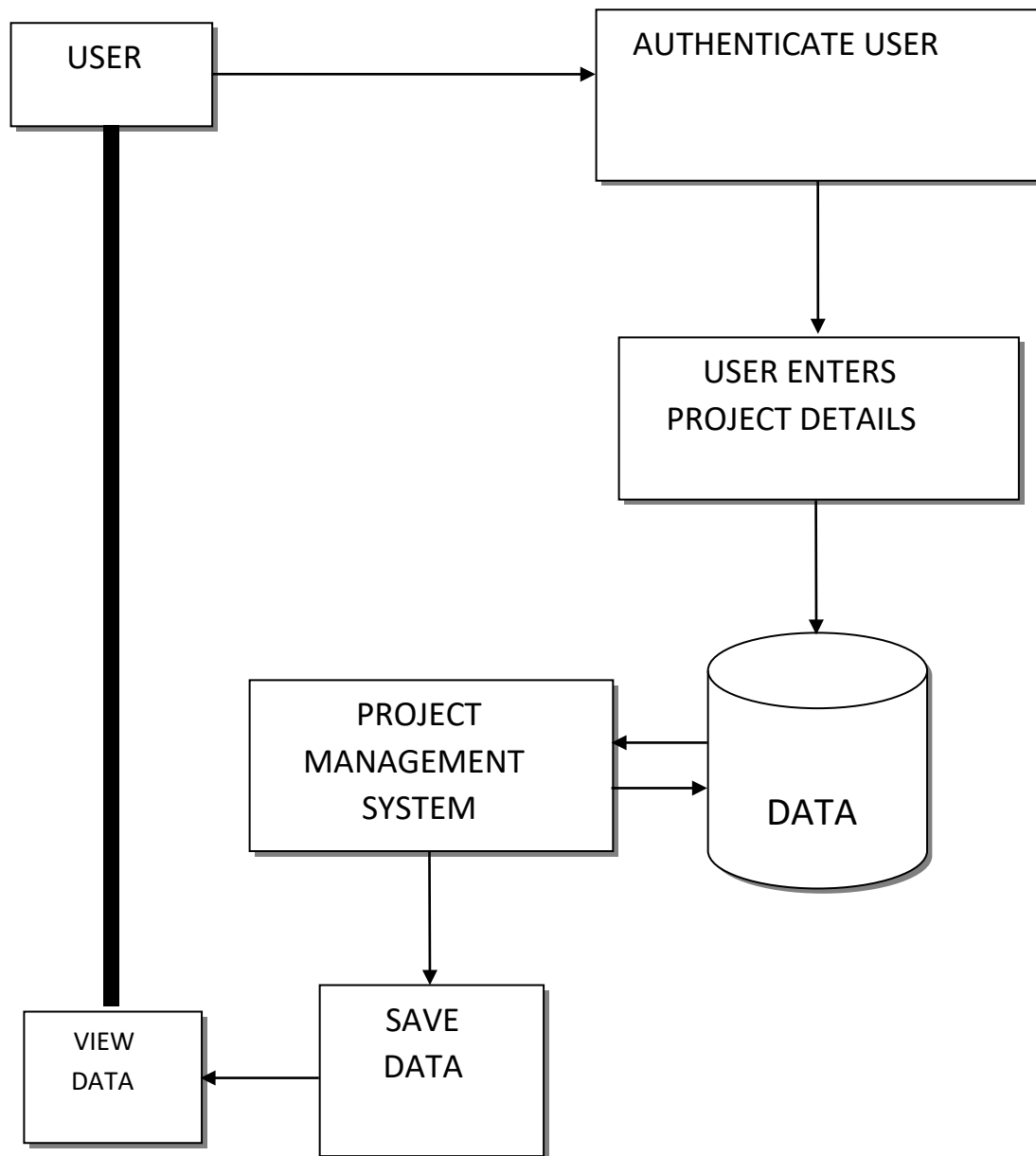


Figure 3.4: Flow diagram for the proposed system.

3.5.2 System Flowchart

A flowchart is a type of diagram that represents an algorithm, workflow or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows. This diagrammatic representation illustrates a solution model to a given problem.

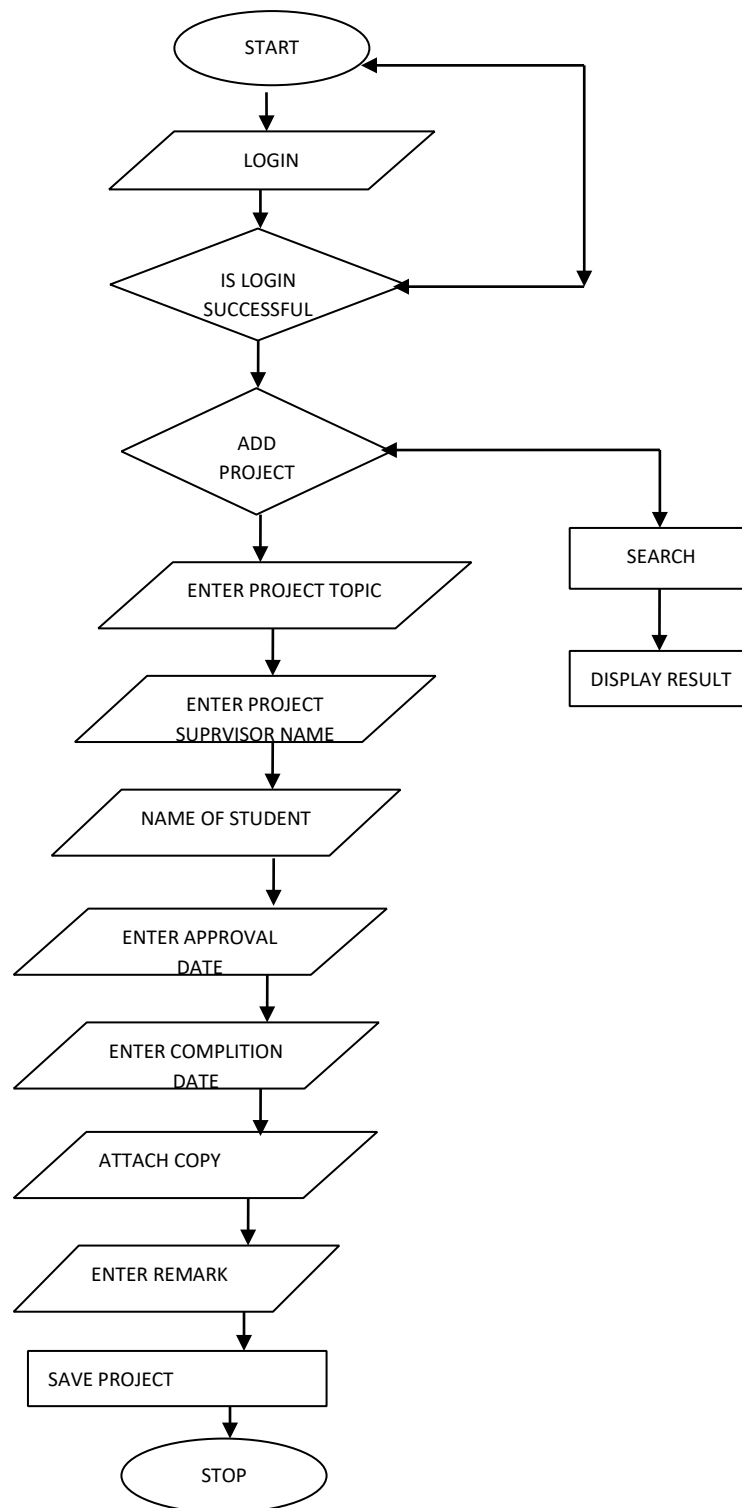


Figure 3.5: Flow chart for the proposed system.

3.5.3 Use Case Diagram

Use-Case Modeling is the process of modelling a system's function in terms of system events and how the system responds to those events. In Use-Case Modeling, Use-Case Diagram, which contains symbols written in Unified Modeling Language (UML) is used. Some of the symbols are;

- i. **Use-Case:** This represents a single goal of the system and describes a sequence of activities and interactions in trying to accomplish the goal.
- ii. **Actor:** An actor is any user who wants to interact with the system. Use-case is initiated by the actor.
- iii. **Communication link:** This expresses the relationship between an actor and a use-case.

The use-case diagram for the proposed system is as shown in figure 3.6

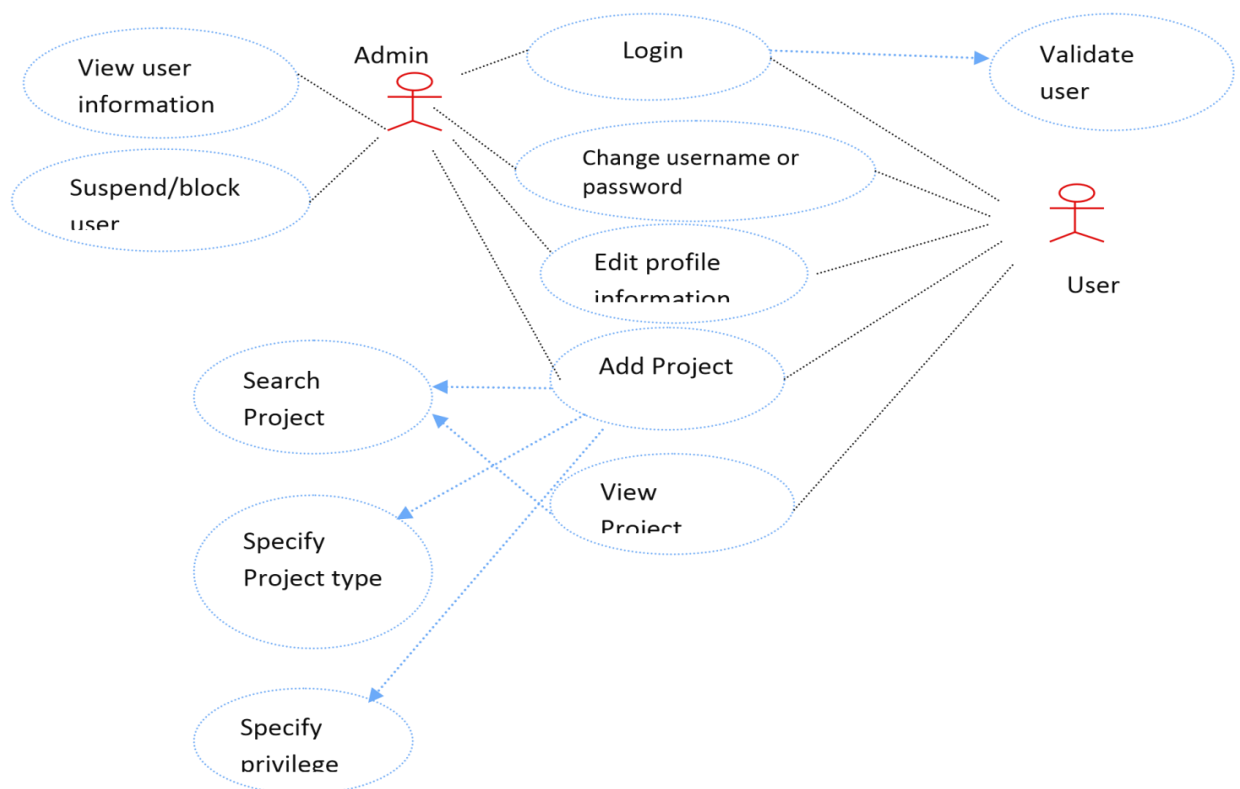


Figure 3.6: Use-Case diagram for the proposed system

From fig 3.6, there are two classes of users represented by actors. These are the Administrator and User. Any of the actors must login to access any service provided

by the system. The login action will include validate action as shown in fig 3.6. After login, the administrator can view other user accounts and suspend or block account. The other users can add project, view projects specify privilege and search project. Both the Administrator and other users can change username and password and logout. The entire functionalities of the system are represented in figure 3.6.

Since the required functionalities have been specified, classes containing methods to carry out those actions can be well structured.

3.5.4 Class Diagram

In Object Oriented Programming, classes containing attributes and behaviours are used to represent real life objects involved in a system.

Objects are created from classes at run time and the process of creating these objects is called instantiation. Hence classes are blueprints for creating objects. The classes involved in the proposed system are shown in figure 3.7

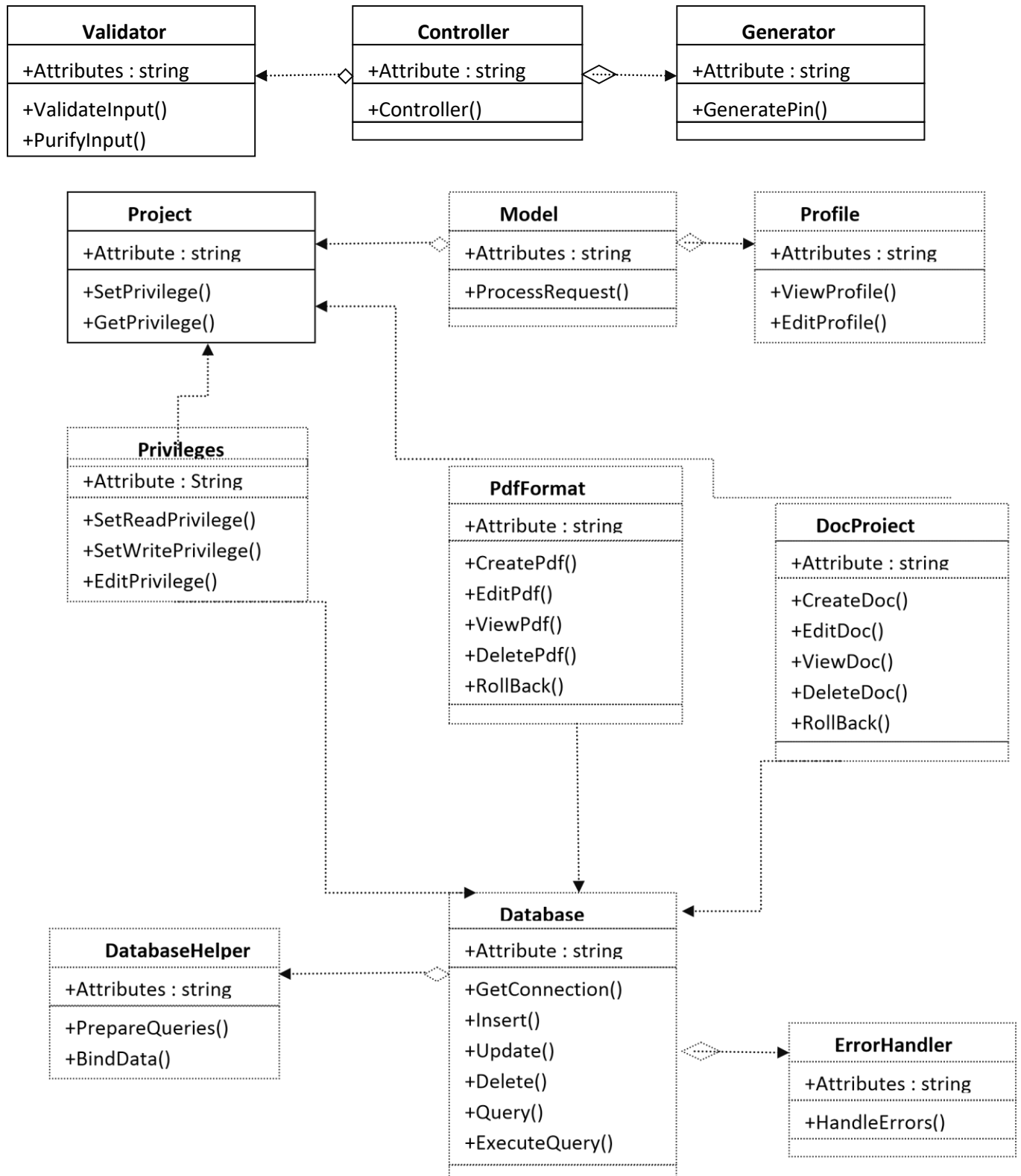


Figure 3.7: class diagram for the proposed system.

From fig 3.7, the objects involved in the proposed system can easily be identified. These objects are:

1. Validator
2. Controller
3. Generator
4. Project
5. Model
6. Profile
7. Error Handler
8. Database.

The functions of these objects are explained below:

1. **Validator:** It functions as follows;

- Validate all the input data for the request
- Purify the input data.

2. **Controller:** It functions as follows;

- Accept requests from the user
- Controls Validator and Generator
- Passes the request to the model for processing
- Receives response from the model and feeds it back to the user

3. **Generator:** It generates Personal Identification Number (PIN).

4. **Project:** It functions as follows;

- Create the project
- Control privileges
- View projects
- Edit projects
- Delete projects
- Rollback changes.

5.Profile: It functions as follows;

- Creates a user profile
- Edit user profile.

6.Model: It functions as follows;

- Receives requests from the controller
- Controls Profile, Document and Database.

7.Database: It functions as follows;

- Controls access to the database
- Opens a connection to the database
- Performs Insert, update, delete and select operations in the database.

8.Error Handler: It functions as follows;

- Terminates the process if an error occurs
- Gives appropriate response to the user.

3.6 PROGRAMMING LANGUAGE JUSTIFICATION

The system is designed using Hypertext Preprocessor (PHP) and My Structured Query Language (MySQL) database management system.

3.6.1 PHP Programming language

PHP is a popular scripting language that is specially suited for web development. Fast, flexible and pragmatic, PHP powers anything from a blog to the most popular websites in the world, and web applications.

PHP is a server side scripting language and a powerful tool for making dynamic and interactive web pages. It is widely used, free and efficient alternative to its competitors such as Microsoft ASP.net, it is installed on more than 20 million web sites and 1 million web servers. It is one of the first developed server-side scripting languages to be embedded into a HTML source document rather than calling an external file to process data.

PHP code can be simply mixed with HTML code, or it can be used in combination with various templating engines and web frameworks. PHP code is usually processed by a PHP interpreter which is usually implemented as a web servers native module or a Common Gateway Interface (CGI) executable. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications.

PHP development began in *1994 when RasmusLerdorf* wrote a series of Common Gateway Interface (CGI) binaries in C language. The main implementation is now produced by The PHP group and serves as the formal reference to the PHP language. PHP is a free software released under the PHP License, which is incompatible with the GNU General Public License (GPL) due to restrictions on its usage.

3.6.2 MySQL

MySQL is a fast easy to use open source relational database management system (RDBMS) that serves as a popular choice of database for use in the development of applications. MySQL workbench is actively developed by Oracle, and is freely available for use. MySQL is a clientserver based DBMS that is easier to install and use than its commercial competitors, and the fact that MySQL is open source is strongly in its favor as the DBMS used for the development of the proposed system. MySQL ships with many command line tools, from which the main interface is MySQL client. MySQL consists of a MySQL server, several utility programs that assist the administration of the MySQL databases.

CHAPTER FOUR

IMPLEMENTATION

INTRODUCTION

The objective of Implementation is to ensure that the system performs as required and hand over is successful. This chapter looks at how the system will be implemented to achieve the purpose for which it was designed. The application package for Document Management system was realized using PHP (Hypertext Preprocessor) as the main scripting language, CSS (Cascading Style Sheet) to style the interface, MySQL server as the database server, and XAMPP as the web server. The application can be accessed using any web browser.

4.1 SYSTEM REQUIREMENTS

The minimum requirement for the implementation of the document management system will be discussed in this section.

4.1.1 Hardware Requirements

- i. Processor: At least Intel coreI9-9980xe extremely edition processor recommended.
- ii. Hard disk: At least 40GB of available space required on system drive.
- iii. Display: Super VGA (1024 x 768) or higher resolution display with 256 colors.
- iv. RAM: 16 MB
- v. High-Speed Internet connection.

4.1.2 Software Requirements

- 1. Operating System:
 - 1. Windows XP

2. Vista, Windows 7 or Windows 8
3. Linux
4. Ubuntu
5. Mac
6. Android
7. Symbian.
2. Web Browsers:

WINDOWS BROWSERS

8. Mozilla firefox 7.0 recommended
9. Internet Explorer 7 and 8
10. Safari 4.3
11. Google Chrome

MACINTOSH BROWSERS

12. OS X
13. Mozilla Firefox 3.5 (recommended)
14. Safari 4.3

MOBILE BROWSERS

15. Opera Mini 5.0 or higher
16. UC Browser.
3. Development Tool:
17. WAMP or XAMPP server.

4.2 Installing the Application

Installation simply means deploying the web application on a localhost server and making it accessible to end users. The installation discussed in this section applies to users that want to use the application on a standalone computer or over a network.

To run web applications on a standalone computer, a computer capable of running the following is needed;

- Any version of Windows XP, Vista, Windows 7 and Windows 8.
- A text editor IDE is needed. This could be Notepad++ or any other development IDE like Netbeans
- A server such as XAMPP or WAMP.

4.2.1 Installing The Web Server

A web server is required to provide components that will enable the web application to run. For this project, XAMPP is the recommended web server.

XAMPP is an open source server and it can be downloaded from Apache And Friends Page on <http://xampp.sf.net>.

The application can be installed as follows:

1. Install the XAMPP software into the root directory of any of your local disks.
2. After the installation, confirm that the Apache and MySQL is started. This can be confirmed from the XAMPP control panel. To locate the control panel, Go to start menu, click on programs and look for apache friends. When you hover the mouse on it, XAMPP pops up, click on XAMPP to get to the XAMPP control panel.
3. To confirm that XAMPP is working, go to your web browser and type localhost.
4. Copy manager folder to the htdocs directory in your XAMPP installation (copy it into C:\xampp\htdocs)
5. To confirm that application is working, go to your web browser and type <http://localhost/manager/spmag>. If the index page of the application appears, it implies it was successfully copied and is working.
6. Go back to the application directory and configure application from the configuration site.

7. Configure the database at <http://localhost/phpmyadmin>.

4.2.2 Using XAMMP

The duty of the Apache web server is to host and serve web application's output to the web browser that requested it. Such requests could be requesting for a resource that the web server has from the web browser, triggering the necessary server side scripting languages to interpret server side scripts if necessary, collecting requests from HTML documents and sending it to the web browser that requested it. It is of importance to note that both the web browser and the web server can exist on the same machine due to design and testing purposes as is the case in this project. The web server, its utilities and the web browser must be present either together on the same machine or remotely for a web application to be complete.

The web browser is needed to retrieve user data from the host server (Apache HTTP server) over the internet or a local area network. It receives the HTML codes for the contents of the current page it is accessing and interprets the codes to produce the interface for the system. It also provides an interface through which data can be collected from the user and sent to the server.

4.3 SETTING UP MYSQL DATABASE

The MySQL database setup is relatively easy. This can be achieved in two ways;

5. By writing SQL codes
6. By using PhpMyAdmin application. It is controlled entirely by SQL commands.

4.4 Testing The Application

Testing means compiling and then running the web application on any web platform that launches and receives HTTP requests, to see how the application works. This is because it is very important to use the application at least on a

trial basis to evaluate it, regardless of the phase involved. Testing ensures that the application works properly according to the systems specification.

This application was built using a rich and interactive user interface. To access the system, simply login with your username and password.

4.5 Running The Program

Web applications are known to run on web browsers. To run this application, open your web browser and type localhost/manager/spmag.php. The web application interface will open. Begin the sign-up process or new registration application and choose a username and password. Proceed to login and provide your credentials. If validated, then access to the application is given.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This research work presents a comparative study of how student projects can be effectively managed in the federal polytechnic bida. It is implemented as a web-based application. The system was developed using PHP as the scripting language and MySQL as the database. With the evolution of this system, projects can now be easily stored and retrieved. Though the system can exist as a standalone application running on a server, it can be integrated with an existing system, making it modular.

The first chapter discussed the need for a student project management system. The second chapter gave a review on the existing system of student project management. The third chapter gave an analysis of the proposed system which was carried out using Dynamic Systems Development Model (DSDM). The fourth chapter gave a guide on how the system should be implemented and tested. The system was designed to curb the difficulties inherent in the traditional method of managing student projects.

5.2 CONCLUSION

We have been able to design a student project Management system which stores and retrieves projects easily and provide security for projects against repetition. The relevance of this application cannot be over emphasized in a school environment; especially in this era of digitization.

5.3 RECOMMENDATIONS

The following are the recommendation required in order to effectively use the proposed system are:

1. The hardware and software requirement should be as specified

2. To ensure effective use of this system, there is the vital need to install an uninterrupted power supply (UPS) and if possible a power generating set to help prevent unnecessary file corruption due to power fluctuations
3. Staff should be trained on how to use the new system; it is user-friendly no special training is needed to achieve full implementation.
4. Routine maintenance and repairs of the existing computer systems are needed if there is any problem with the system. This will only increase the life span of the computers and will help in protecting the system files.

REFERENCES

- Alan, D., Barbara, H. W. and David, D. (2002). *Systems Analysis & Design: An Object-Oriented Approach with UML*, John Wiley& Sons, Inc.
- Anon. (2014). *The new way to walk: The future of Information Management Process*.
- Bill Gates (1994). *Information at your fingertips. Fall COMDEX.14 Nov,1994*.
- Burtylev, I.N., Mokhun, K.V. (2013). *Development of Electronic Document Systems – Department of Computer Science and Software Engineering Zaporozhye, Institute of Economics and Information Technology, Zaporozhye, Ukraine*.
- Darryl P. (2004). *Simplifying Business Logic with PHP DataObjects*. O'Reilly Media.
- Dask, J.H. (1989). *Information And Computer Science: Structured Approach To Information Analysis*.
- Douglas, H. (1995). *Hypertext Pre-processor. California: Splash Bauer Inc*. Jack, W. (2010). *Embedded Data Management and Integration. New York Pervasive Software Inc*.
- John Heckman (2008). *Why project Management: A White Paper*, Heckman Consulting, Version 1.0.
- John, W., & Joshua, D. (2002). *Practical Postgre SQL*. California: O'Reilly Media.
- Koulopous T. M., Frappaolo C. (1994). *Electronic Document Management Systems : A Portable Consultant*. McGraw-Hill Book Company.
- Ledorf Rasmus (2007). *History of PHP- The conversations network*.
- Lin Sun (2006). *Web Based Document Processing and Management System*. School of Informatics, University of Manchester.
- Michael Arrington (2005). *Writely - Process Words with your Browser*.
- Middleton, D., & Jasek, D. (1993). *Digital Revolution for economic growth and Development*. India: Sikkim Publisher.
- Moreq S. (2008). *Model Requirements for the management of electronic records*. ISBN 978-92-79-09772-0.
- Nwachukwu, E.O. (1998), *Information Systems Development- A Structured Approach*, Genesis Publications.

Object Technology International (2003). *Eclipse Platform Technical Overview*.

Paul Abraham (2003). *WYSIWYG Editor for ASP.net [online]*. Abraham-Consulting.

Paul Browning (2005). *TTW ("Through the Web") WYSIWYG Web Editors-The List*.

Sparx Systems (2004). *The Use Case Model*.

Teorey, T.J., Lightstone, S.S. (2009). *Database Design : Know it all*. Morgan Kaufmann Publishers.

APPENDIX B

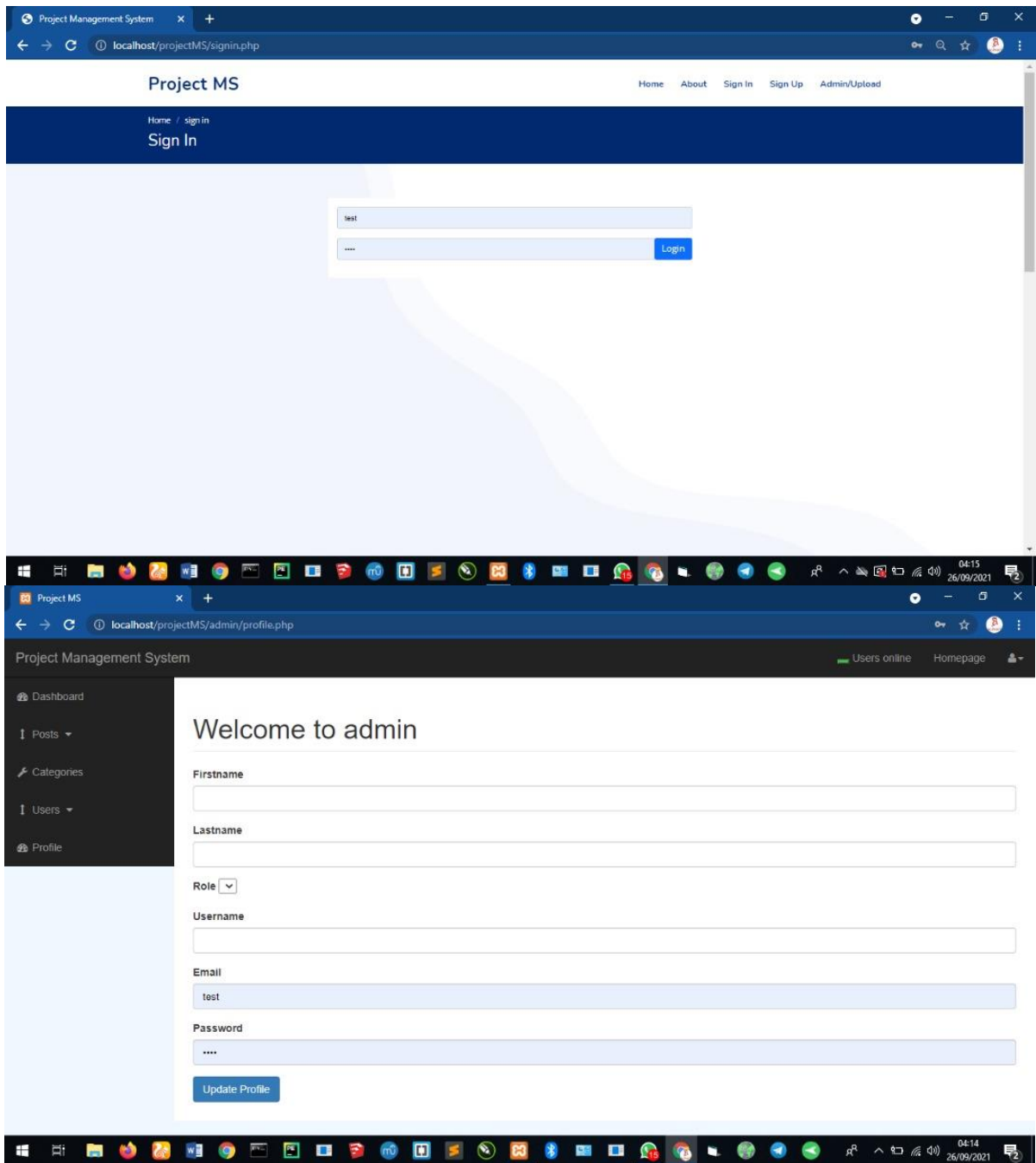
The image displays two screenshots of a web application titled "Project MS".

Top Screenshot (Index Page):

- Browser:** Project Management System, localhost/projectMS/index.php
- Navigation:** Home, About, Sign In, Sign Up, Admin/Upload
- Header:** Project MS
- Main Content:**
 - Section:** Modern Project Management System
 - Description:** We take care of all the pain of organizing your projects with a fast and better way of storing and retrieving projects
 - Button:** Get Started →
- Illustration:** A large illustration showing three people interacting with a large laptop screen, surrounded by server racks and a cloud.

Bottom Screenshot (Registration Page):

- Browser:** Project Management System, localhost/projectMS/registration.php
- Navigation:** Home, About, Sign In, Sign Up, Admin/Upload
- Header:** Project MS
- Breadcrumb:** Home / sign up
- Section:** Sign up
- Form:**
 - username:** test
 - Email:** somebody@example.com
 - Password:** ****
 - Button:** Register



Project MS

localhost/projectMS/admin/posts.php?source=add_post

Project Management System

Users online

Homepage

Dashboard

Posts

Categories

Users

Profile

Welcome to admin

Project Topic

Project Category / Department Computer Sci

Project Author

Post Status

Project Image

Choose file No file chosen

Project pdf

Choose file No file chosen

Project Tags

project Content

File Edit View Format

Paragraph B I

Project MS

localhost/projectMS/admin/posts.php?source=users_posts

Project Management System

Users online

Homepage

Dashboard

Posts

Categories

Users

Profile

Welcome to admin

select Options

Apply

Add New

Notice: Undefined index: username in C:\xampp\htdocs\projectMS\admin\includes\users_posts.php on line 116

<input type="checkbox"/>	Id	Supervisor	Author	Title	Category	status	Image	Pdf	Tags	Comments	Date	Post Page	Edit	Delete
<input type="checkbox"/>	54	mr hamza	faruk nuhu	project database management system	Computer Sci	published			student	[0] commented	2021-09-25	View Post	Edit	Delete
<input type="checkbox"/>	52				Computer Sci	draft				[0] commented	2021-09-25	View Post	Edit	Delete
<input type="checkbox"/>	48	Prof. Uriel	Uriel	C ++	Computer Sci	published			cpp	[0] commented	0000-00-00	View Post	Edit	Delete
<input type="checkbox"/>	47	Prof. Uriel	Uriel	C ++	Computer Sci	published			cpp	[0] commented	0000-00-00	View Post	Edit	Delete

APPENDIX B

```
[9/28, 13:53] Oria: <!-- db_connection -->
<?php include "functions/db.php";?>
<!-- header -->
<?php include "functions/header.php";?>

    <!-- Navigation -->
<?php include "functions/nav.php";?>

<main id="main">

    <!-- ===== Breadcrumbs ===== -->
<section class="hero">
    <div class="container">
        <div class="row">
            <div class="col-lg-6 d-flex flex-column justify-content-center">
                <h1 data-aos="fade-up">Modern Project Management System</h1>
                <h2 data-aos="fade-up" data-aos-delay="400">We take care of all the pain of organizing your
projects with a fast and better way of storing and retrieving projects</h2>
                <div data-aos="fade-up" data-aos-delay="600">
                    <div class="text-center text-lg-start">
                        <a href="registration.php" class="btn-get-started scrollto d-inline-flex align-items-center
justify-content-center align-self-center">
                            <span>Get Started</span>
                            <i class="bi bi-arrow-right"></i>
                        </a>
                    </div>
                </div>
            </div>
            <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
                
            </div>
        </div>
    </div>
</section><!-- End Breadcrumbs -->

<!-- Page Content -->
<div class="container">

    <div class="row">

        <!-- Blog Entries Column -->

        <div class="col-md-8">

            <?php
```

```

$per_page = 5;

if(isset($_GET['page'])) {
    $page = $_GET['page'];
} else {
    $page = "";
}
if($page == "" || $page == 1) {
    $page_1 = 0;
} else {
    $page_1 = ($page * $per_page) - $per_page;
}
if(isset($_SESSION['user_role']) && $_SESSION['user_role'] == 'admin' ) {

    $post_query_count = "SELECT * FROM posts";

} else {
    // $post_query_count = "SELECT * FROM posts";
    $post_query_count = "SELECT * FROM posts WHERE post_status = 'published'";
    //if ($post_status == 'published') {
    }

$find_count = mysqli_query($connection,$post_query_count);
$count = mysqli_num_rows($find_count);

    if($count < 1) {
        echo "<h1 class='text-center'>No posts available</h1>";

    } else {
        $count = ceil($count / $per_page);

        $query = "SELECT * FROM posts LIMIT $page_1, $per_page";
        $select_all_posts_query = mysqli_query($connection,$query);

        while($row = mysqli_fetch_assoc($select_all_posts_query)) {
            $post_id = $row['post_id'];
            $post_title = $row['post_title'];
            $post_author = $row['post_author'];
            $post_date = $row['post_date'];
            $post_image = $row['post_image'];
            $post_publisher = $row['post_publisher'];
            $post_content = substr($row['post_content'], 0,100);
            $post_status = $row['post_status'];
            $post_pdf= $row['post_pdf'];

        }

    }
?>

```

```

<?php //if ($post_status == 'published') {
// code...
?>

    <!-- First Blog Post -->
    <h2>
        <a href="post.php?p_id=<?php echo "$post_id"; ?>" style="color:#c6164e;"><?php echo
"$post_title"; ?></a>
    </h2>
    <p class="lead">
        by <?php echo "$post_author"; ?>
    </p><br/>
    <p>Project Supervisor <?php echo $post_publisher; ?><span class="glyphicon glyphicon-
time"></span>
    <br/>
    <?php echo "$post_date"; ?></p>
    <hr>
    " alt="">

    <hr>
    <p><?php echo $post_content; ?></p>
    <a style="background-color:#c6164e;" class="btn btn-primary" href="post.php?p_id=<?php
echo "$post_id"; ?>">Read More <span class="glyphicon glyphicon-chevron-right"></span></a>
    <a style="background-color:#c6164e;" class="btn btn-primary" href="post.php?p_id=<?php echo
"$post_id"; ?>">Download <span class="glyphicon glyphicon-chevron-down"></span></a>
    <br/>

<?php } } //}?>
</div>

</div>
<!-- /.row -->
</div>
<hr/>
<center >
    <ul class="pager list-unstyled" >
    <?php
    for($i =1; $i <= $count; $i++){

        if ($i == $page) {
            echo "<li '><a class='active_link' href='index.php?page=$i'>{$i}</a></li>";
        }else {
            echo "<li '><a href='index.php?page=$i'>{$i}</a></li>";

        }
    }

    ?>

```

```

    </ul>
</center>

<section id="values" class="values">

    <div class="container" data-aos="fade-up">

        <header class="section-header">
            <h2>How easy it is</h2>
            <p>The process of getting started</p>
        </header>

        <div class="row">

            <div class="col-lg-4">
                <div class="box" data-aos="fade-up" data-aos-delay="200">
                    
                    <h3>Do you have a project you want to Upload?</h3>
                    <p>The registration process is so easy and painless</p>
                </div>
            </div>

            <div class="col-lg-4 mt-4 mt-lg-0">
                <div class="box" data-aos="fade-up" data-aos-delay="400">
                    
                    <h3>Do you have a project you are looking for?</h3>
                    <p>You are just one click away from finding it.</p>
                </div>
            </div>

            <div class="col-lg-4 mt-4 mt-lg-0">
                <div class="box" data-aos="fade-up" data-aos-delay="600">
                    
                    <h3>You see what you want Immediately.</h3>
                    <p>You want to search? or upload? It happens Immediately.</p>
                </div>
            </div>
        </div>
    </section>
</main><!-- End #main -->

<!-- Footer -->

    <?php include "functions/footer.php";?>
[9/28, 13:53] Oria: <?php include "functions/db.php"; ?>
    <?php include "functions/header.php"; ?>
    <?php include_once "functions/function.php";

```

```

?>
    <!-- Navigation -->
<?php include "functions/nav.php"; ?>
<main id="main">
    <!-- ===== Breadcrumbs ===== -->
    <section class="breadcrumbs">
        <div class="container">

            <ol>
                <li><a href="index.php">Home</a></li>
                <li>sign in</li>
            </ol>
            <h2>Sign In</h2>

        </div>
    </section><!-- End Breadcrumbs -->

    <section class="hero">
        <div class="container">
            <div class="row ">

<?php if(isset($_SESSION['user_role'])): ?>
<h4><b>Logged in as <small><?php echo $_SESSION['username']; ?></small></b></h4>
    <a href="functions/logout.php" class="btn btn-danger" name="logout">
<span class="glyphicon-log-out">Logout</span>
</a>
<?php else: ?>

    <form class="col-lg-6 col-md-6 p-3 mx-auto bg-white rounded" action="functions/login.php"
method="post">
        <div class="form-group mb-3">
            <input name="username" type="text" class="form-control" placeholder="Enter Username">
        </div>

        <div class="input-group mb-3">
            <input name="password" type="password" class="form-control" placeholder="Enter
Password">
            <span class="input-group-btn">
                <button class="btn btn-primary glyphicon-log-in" name="login"
type="submit">Login</button>
            </span>

        </div>
    </form>
<?php endif; ?>

    <!-- /.input-group -->
</div>

```

```

    </div>
</section>
<hr/>
<section id="values" class="values">
    <div class="container" data-aos="fade-up">

        <header class="section-header">
            <h2>How easy it is</h2>
            <p>The process of getting started</p>
        </header>

        <div class="row">

            <div class="col-lg-4">
                <div class="box" data-aos="fade-up" data-aos-delay="200">
                    
                    <h3>Do you have a project you want to Upload?</h3>
                    <p>The registration process is so easy and painless</p>
                </div>
            </div>

            <div class="col-lg-4 mt-4 mt-lg-0">
                <div class="box" data-aos="fade-up" data-aos-delay="400">
                    
                    <h3>Do you have a project you are looking for?</h3>
                    <p>You are just one click away from finding it.</p>
                </div>
            </div>

            <div class="col-lg-4 mt-4 mt-lg-0">
                <div class="box" data-aos="fade-up" data-aos-delay="600">
                    
                    <h3>You see what you want Immediately.</h3>
                    <p>You want to search? or upload? It happens Immediately.</p>
                </div>
            </div>

        </div>

    </div>

</section>

</main><!-- End #main -->

<?php include "functions/footer.php"; ?>
[9/28, 13:54] Oria: <?php include "functions/db.php"; ?>
<?php include "functions/header.php"; ?>

```



```

<?php include_once "functions/function.php"; ?>

<?php
    if ($_SERVER['REQUEST_METHOD'] == "POST") {

        // if (isset($_POST['submit'])) {
        // code...
        $username = trim($_POST['username']);
        $email = trim($_POST['email']);
        $password = trim($_POST['password']);

        $error = [

            'username'=>",
            'email' => ",
            'password'=> "
        ];

        if(strlen($username) < 4){
            $error['username'] = 'Username needs to be longer';
        }
        if ($username == "") {
            $error['username'] = 'Username cannot be empty';
        }

        if (user_check($username)) {
            $error['username'] = "Username Exists Already";
        }

        if(strlen($email) < 4){
            $error['email'] = 'Email needs to be longer';
        }
        if ($email == "") {
            $error['email'] = 'Email cannot be empty';
        }

        if (email_check($email)) {
            $error['email'] = "Email associated with an existing account, <a href='index.php'>Please
login</a>";
        }

        if($password == ""){
            $error['password'] = "Password cannot be empty";
        }

        foreach($error as $key => $value){

```

```

        if(empty($value)){
            unset($error[$key]);
        }
    }
    if(empty($error)){
        register_user($username, $email, $password);
        login_user($username,$password);
        redirect("admin/index.php");
    }
}
?>
<!-- Navigation -->

<?php include "functions/nav.php"; ?>

<!-- ===== Breadcrumbs ===== -->
<section class="breadcrumbs">
    <div class="container">

        <ol>
            <li><a href="index.php">Home</a></li>
            <li>sign up</li>
        </ol>
        <h2>Sign up</h2>

    </div>
</section><!-- End Breadcrumbs -->

<!-- Page Content -->
<div class="container">

    <section class="hero">
        <div class="container">
            <div class="row ">

                <form class="col-lg-8 col-md-8 mx-auto bg-white p-3 rounded" role="form" action="signin.php"
                method="post" id="login-form" autocomplete="off">
                    <div class="form-group">
                        <label for="username" class="sr-only">username</label>
                        <input type="text" autocomplete="on" value="<?php echo isset($username)? $username:"
?>"
                        name="username" id="username" class="form-control" placeholder="Enter Desired
Username">
                    <p><?php echo isset($error['username'])? $error['username']:" ?></p>
                    </div>
                </div>
            </div>

```

```

        <label for="email" class="sr-only">Email</label>
        <input type="email" autocomplete="on" value="<?php echo isset($email)? $email:"
?>"
        name="email" id="email" class="form-control"
placeholder="somebody@example.com">
<p><?php echo isset($error['email'])? $error['email']:" ?></p>
</div>
<div class="form-group">
    <label for="password" class="sr-only">Password</label>
    <input type="password" name="password" id="key" class="form-control"
placeholder="Password">
<p><?php echo isset($error['password'])? $error['password']:" ?></p>
</div>

    <input type="submit" name="submit" id="btn-login" class="btn btn-primary glyphicon-
log-in" value="Register">
    </form>
</div>
</div> <!-- /.container -->
</section>

```

```

<hr>
<section id="values" class="values">

```

```

    <div class="container" data-aos="fade-up">

```

```

        <header class="section-header">
        <h2>How easy it is</h2>
        <p>The process of getting started</p>
        </header>

```

```

    <div class="row">

```

```

        <div class="col-lg-4">
            <div class="box" data-aos="fade-up" data-aos-delay="200">
                
                <h3>Do you have a project you want to Upload?</h3>
                <p>The registration process is so easy and painless</p>
            </div>
        </div>

```

```

        <div class="col-lg-4 mt-4 mt-lg-0">
            <div class="box" data-aos="fade-up" data-aos-delay="400">
                
                <h3>Do you have a project you are looking for?</h3>
                <p>You are just one click away from finding it.</p>
            </div>
        </div>

```

```
<div class="col-lg-4 mt-4 mt-lg-0">
  <div class="box" data-aos="fade-up" data-aos-delay="600">
    
    <h3>You see what you want Immediately.</h3>
    <p>You want to search? or upload? It happens Immediately.</p>
  </div>
</div>

</div>

</div>

</section>

<?php include "functions/footer.php"; ?>
```