CHAPTER ONE
INTRODUCTION

1.1   BACKGROUND OF STUDY

One of the most notable recent developments in information technology is the rapid growth of communication, which has transformed the world into a global village. We can now send emails electronically (e-mail), conduct information searches online (www), shop online (e-commerce), withdraw money from/transfer money online (e-banking), and attend school online (e-learning), all of which have had a positive impact on society. As a result, the computerization of project management should not be excluded in this context.

Project Management (PM) is the discipline of planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives. A project is a finite endeavor that has a 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 stands 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. Such requires the development of distinct technical skills and the adoption of separate management philosophy, which is the subject of this study.

The main challenge of project management is to achieve all project goals and objectives while respecting classical project constraints, typically scope, quality, time, and budget. The second and more ambitious challenge is optimizing the allocation and integration of the inputs needed to achieve predefined goals. A project is a carefully defined set of activities that use resources (money, people, materials, energy, space, supplies, communications, motivation, etc.) to accomplish its goals and objectives.

Project management is frequently the domain and duty of a single project manager. Rarely does this person actively engage in the processes that lead to the final product; instead, they work to keep everyone moving forward and interacting productively to lower the likelihood of failure as a whole. As a client representative who frequently knows the company they are representing, a project manager must ascertain and implement the precise needs of the client. To ensure that the crucial considerations of cost, time, quality, and most importantly, client satisfaction, can be realized, it is imperative to be able to adapt to the various internal procedures of the contracting party and to establish close relationships with the designated representatives.

Irrespective of the strategy used, careful thought must be given to defining the project objectives, aims, and, most crucially, the roles and responsibilities of all stakeholders. This method, which involves completing a succession of tasks in a linear sequence, is frequently referred to as "waterfall methodology" in the context of software development. Although RUP (Rational Unified Process) does not officially mandate or require this approach, several businesses have modified it to meet this methodology in software development. Waterfall development can be effective for small, precisely specified projects, but it is less appropriate for larger projects with an unclear or uncertain scope.

1.2   STATEMENT OF THE PROBLEM

Many educational institutions struggle with project management, and this is because there is no automated system used in any of these institutions. All student project reports and sources are gathered by the institution's administration and staff, who then physically store them in libraries or other locations.

The inherent issues with the manual storing of student projects are now generally acknowledged. Students turn in physical copies of their projects to the libraries within their respective departments, using the Federal Polytechnic of Ede as a case study. The following are some drawbacks of this manual approach:

1. Possibility to repeat project topics that are not detected by the project supervisor.

2. Students' subject project files are stored for a long time in the faculty library, occupying office space.

3. Natural disasters like fire outbreaks put projects at risk of damage.

4. Difficulty in searching for project topics already done.

5. Projects are not accessible outside of the University, which means there is a geographical barrier.

6. Backing up projects becomes a concern because more space will be used.

Faced with the need to organize projects, the proposed student project management system is unique and completely innovative in its integrated approach. Its functionality to facilitate project storage makes it a necessity.

1.3   AIMS AND OBJECTIVE OF THE STUDY

The main goal of this project is to design and develop a student project management system for the Federal Polytechnic Ede that will ease the management of the student's final year project.

The objectives of this research study are as listed below;

1. To design a database for the system
2. To implement the system using MSSQL and C#
3. To test the student project management system using Fedepe as a case study.

1.4   SIGNIFICANCE OF THE STUDY

The importance of this study is to move from manual project documentation to computerized project documentation for easy retrieval, storage, accuracy, and security. This research work will bring the following benefits to the various faculties of the Federal Polytechnic Ede;

- Reduced storage capacity:

The cost of commercial ownership and the need for document storage, e.g. traceability and regulatory compliance, means hosting paper projects that rival everyone for space in an organization. Scanning projects and integrating them into a project management system can significantly reduce the amount of primary storage space required by paperwork.

- Flexible indexing:

Articles can be indexed in many ways, but this is complicated, expensive, and time-consuming. Project images stored in the project management system can be indexed simultaneously in different ways.

- Improved, faster, and more flexible search:

Project management systems can retrieve files from any word or phrase in a document - known as full-text search - a capability not possible with paper.

- Security improvements:

A project management system can provide greater control and flexibility over sensitive projects. Many project management system solutions allow to control access to projects at the folder and/or document level for different teams and individuals. Paper projects stored in a filing cabinet or traditional filing room do not have the same level of security, i.e. if you have access to the filing cabinet, you have access to all the items in it.

- Disaster recovery:

Project management systems provide an easy way to back up projects for external storage and disaster recovery by providing fail-safe repositories and effective disaster recovery strategies. Paper is a cumbersome and expensive way to keep records and is susceptible to fire, flood, vandalism, and theft.

- No file loss:

Lost projects can be expensive and time-consuming to replace. In a project management system, visual projects are still centrally stored when viewed, so no projects are lost or misplaced. New documents are less likely to be misclassified, and even when stored incorrectly, they can be found and moved quickly and easily through full-text search mechanisms.

- Digital storage:

Keeping archived project versions in the project management system helps protect the paper documents that still need to be kept from being unduly manipulated.

1.5 SCOPE OF STUDY

The research will center on the design and implementation of the Student Project Management System for the department of computer science in the Federal Polytechnic Ede at its early stage. The study will serve as a baseline for anyone who wants to pursue and further extend the Student Project Management System.

1.6 LIMITATIONS OF THE STUDY

Usually, every work has some limitations and this study is not exempted.
The two major limitations of this study are the time limits within which the study is expected to be completed as well as financial constraints. The time constraint prevents the researcher to have an in-depth study and analysis of the subject matter. While the issue of financial constraint limits the frequency of investigation to/from the institution toward gathering the necessary information relevant to the study.

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 the completion of a major deliverable. A milestone, by definition, has a 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 through process input data with a program.

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