American International University-Bangladesh (AIUB)

Faculty of Science and Technology (FST)
Department of Computer Science (CS)

SDPM Group Project, Spring 2022-23

Project Tittle: Super Shop management System

Section:C

Submitted by

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1.0Project Tittle: Super Shop management System.

2.0 Introduction: The Super Shop management system gives managers their staffs to better plan and manage work hours to control staff's costs and improve productivity. As a result, developing a super Shop Management System has become essential. The main objective of the project is to develop a staff Management System for a super Shop. This document is being prepared to define the project's requirements, objectives, stakeholder analysis, and components. This document's target includes staff, manager, and others. The key objective of the project is to develop a super Shop management system to manage a Super Shop's staff.

3.0 Objectives:

The objectives of this project are:
• A login system for Super Shop staff.
• Profile creation.
• Product's quantity checking.
• Payment options.
• Create shift schedules.
• Apply for leave applications.
• Check working Hour.
• System maintenance and repair

4.0 JUSTIFICATIONS:

Effective staff management is one of the project's primary goals. The staff management system is made to professionally handle each of these duties on a single platform. A business can save a lot of money by employing the staff management system since it eliminates the need to hire a large workforce to perform these duties. This solution will help the super shop management teams and other staff, saving them time and increasing revenue. manager will be able to manage, plan, and improve work hours' accuracy, resulting in benefits for the business in terms of employment and more effective manager & staffs. The result will be improved revenues for the Super Shop.

- Improved Efficiency.
- Enhanced Inventory Control.
- Better Customer Service.
- Sales Analysis and Reporting.
- Secure Transaction Handling.

5.0 Systems Overview:

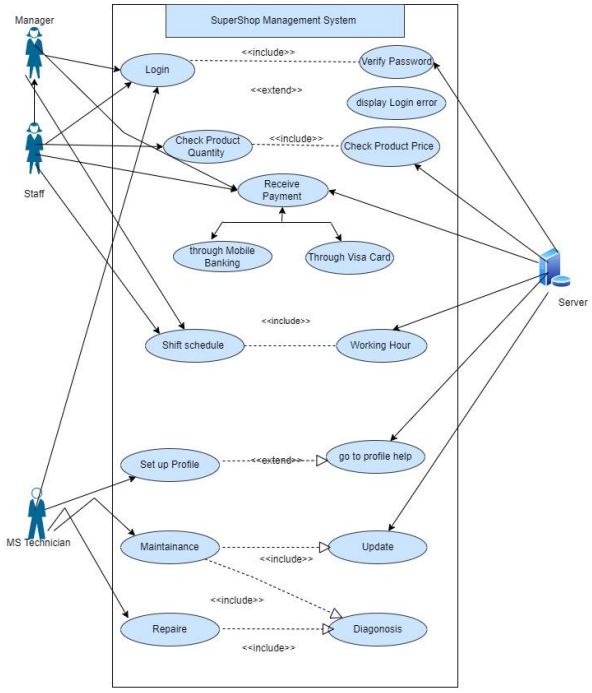

Fig 1.0: Use case diagram

6.0 Stakeholders' analysis:

A project is considered successful when it achieves its objectives and meets or beyond the expectations of its stakeholders. Private persons, corporations that support super shop's, foundations, and state or federal financing agencies are examples of stakeholders. A person, group, or corporation that is directly involved in the project is referred to as an internal stakeholder. An external stakeholder is not directly involved in the project but makes a substantial contribution to its success.

Internal stakeholders in our project include personnel, Manager, and Technicians. Customers, the owner of the super shop, and investors are examples of external stakeholders.

7.0 Feasibility study:

Technical feasibility: Technical feasibility is a common practice for companies to assess if a project is technically possible before starting work on it. It involves evaluating factors such as hardware and software components, technical risks and limitations, compatibility with other IT systems, and the capabilities of our team. Fortunately, we have skilled technicians who can handle our project successfully.

Financial Feasibility: In our system, this evaluation typically includes a project cost and benefit analysis. Additionally, it serves as an impartial project evaluation, improves project credibility, and decision-makers in determining the favorable economic benefits that the

proposed project will bring to the super shop. We can get the best project with the aid of ROI, and since this project is essential for the super shop's reputation, it is our responsibility as software engineers to complete it well.

8.0 Systems component Projects Component:

The main components are.

• Analysis component,

• Design component,

• Test component.

These components or modules can be further broken down to supply particular duties. The COCOMO model serves as 4 months.

System component:

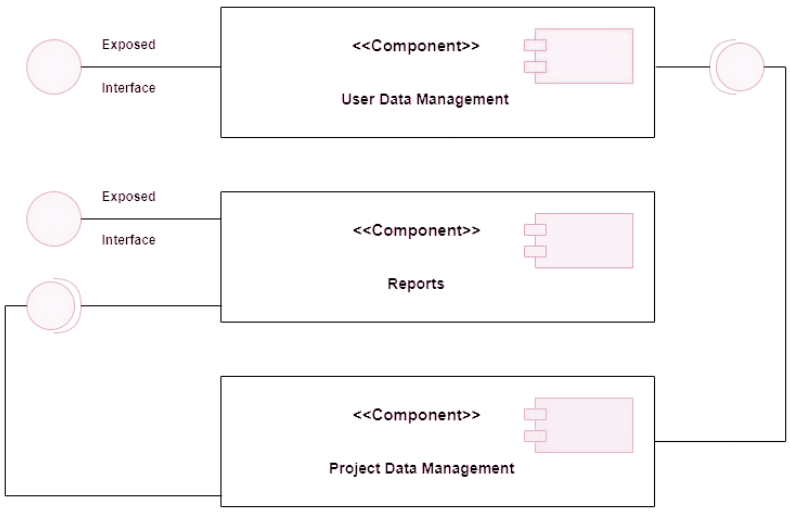

Fig: System Component

9.0 Process Model to be followed:

The incremental development model is the best choice for this project because it allows us to deliver some modules as soon as possible and allows the Super shop to begin working as soon as possible after receiving some modules. After using any module, we can make changes if the Super Shop requests them.

The Successive Version Model is another name for the Incremental Process Model. This model requirement is divided into a number of independent software development cycle modules. The core product is added in the first increment to meet the minimum requirements, and additional features are added in the second increment. Up until the desired system is released, numerous iterations and versions are implemented and given to the customer. The requirement for

thisproject is known up front and must support the Schedule, Risk, Program Complexity, or need for early benefit realization. Early in the software life cycle, we need to get working software. Because this process model makes it easier to manage each iteration, risk because of iterations, and initial costs, it is more flexible and less expensive to change scope and requirements. The process model is so effective for this type of project where need to collect feedback from the users.

For these benefits, we choose Incremental Process Model.

Work Breakdown Structure :

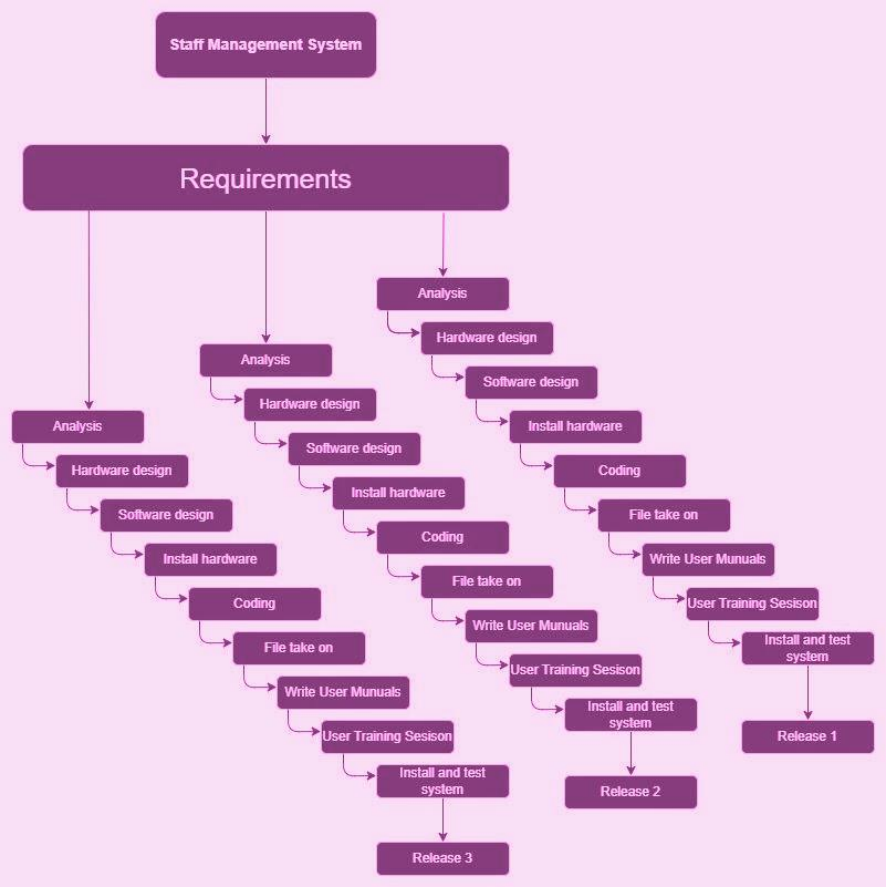

Fig: Work Breakdown Structure

We can perform the calculation using the top-down method and the WBS (Work Breakdown Structure).

Table as a historical data (Previous Projects):

Projects	External Input type	External Output type	Internal file type	SLOC
A	10	12	14	5800
B	8	10	11	4200

New Project Data

4 File or records

1. **Staff_Record**

Data Types: (7 types of data) Sname, SId, SPhoneNo, SGender, STFType, SJoiningDate, SEmail.

2. **Product _Manager_Record**

Data Types: (7 types of data) Pmname, PmId, PmPhoneNo, PmGender, PmType, PmJoiningDate, PmEmail.

3. **Technician_Record**

Data Types: (6 types of data) Tname, TId, TPhoneNo, TGender, TJoiningDate, TEmail.

4. **Balance_Record**

Data Types: (3 types of data) CurrentBalance, withdraw date, withdraw amount.

External Input Types: (3 types) (total 20 data types)

Staff_Record, ProjectManager_Record, Technician_Record

External Output Types: (2 types) (total 21 data types)

Transaction Report, Attendance Report.

From Albrecht's Function Point Analysis,

	Number of Record/File Types	**Number of data types**
File type Complexity	4	23(Average)
External Input type Complexity	3	20(High)
External Output type Complexity	2	21(High)

From Albrecht Complexity Multipliers,

External User Type	**Multiplier**
External Input type	High (6)
External Output type	High (7)
Internal file type	Average (10)

Euclidean distance from the source and the target

project, From Project A,

Square Root of ((10-14) ^2 +(6 -10) ^2 + (7-12) ^2)

= 7.5

From Project B,

Square Root of ((10-11) ^2 +(6-8) ^2 + (7-10) ^2)

= 3.75

Project B has a Closer analogy than project A.

As we are following a Top-Down approach and Project A has 5800 lines of code, so by taking SLOC=5800, from COCOMO MODEL, (ORGANIC TYPE SOFTWARE)

The Formula of Effort estimation,

Effort = PM = Coefficient<EffortFactor>*(SLOC/1000) ^P

EFFORT = 2.4*(5800/1000) ^1.05

=15.87

Development Time = DM = 2.50*(PM)^T

=2.50*(15.87) ^0.38

=4.2 Months (around 4 months)

Required Number of people = ST = Effort (PM)/Development

Time (DM) = 15.87/4 =3.96= 4 people

11.0 Activity Network Diagram:

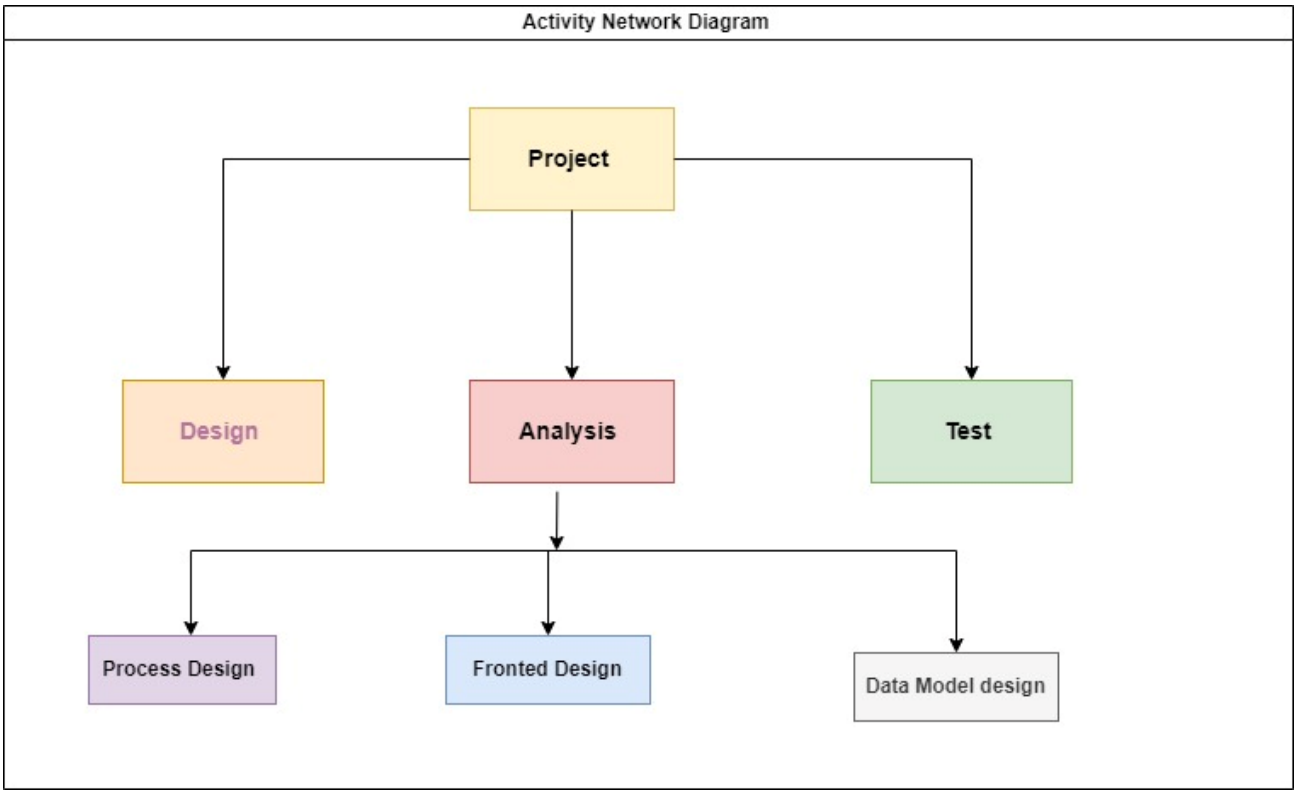

Fig: Activity Diagram (4-month project)

In total 4 month =16weeks

ACTIVITIES	WEEKS	PRECEDENTS
A-Requirement	**1**	
B-Analysis	**2**	**A**
C – Hardware design	**1**	B
D – Software design	**2**	B
E – Install Hardware	**1**	**C**
F – Code ,Test	**3**	**D**
G – File Take-On	**2**	**D**
H – Write User Manuals	**1**	**B**
I– User Training Session	**2**	**G, H**
J – Install and Test System	**1**	**E, F**

Network Diagram:

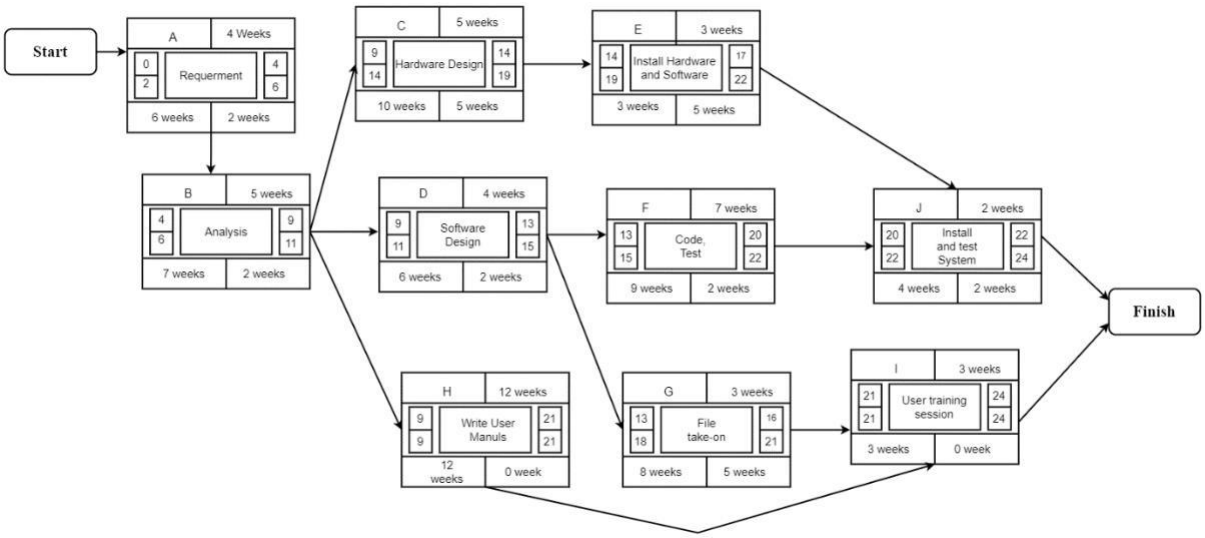

Fig: Network Diagram

12.0 Risk Analysis:

Although this is a software project, there are still a lot of potential risks. The potential risk is:

1. A lack of developer

2. A lack of storage

3. A limited budget

4. Information about deadlines

5. Information about quality works

13.0 Budget for the project

We have mainly four people for this project.

Programmer: 120,000tk

Tester: 55,000tk

Designer: 47,000tk

Project Manager: 100,000tk, Total: 322,000 tk.

For this project to complete we need 322000tk in total.

14.0 Conclusion:

The staff management system of Super Shop is at the main part of the project. The case for staff management is made simple by this project. Here, we divide many users. Describe what they do and your role. We then made plans for the remaining work. We created network diagrams, budgets, feasibility studies, activity flowcharts, risk identification, and more. The software development project management outline thus covers all concepts. This staff management system was created using those ideas. This will make it simpler to carry on with the staff management process for Super Shop .