
# American International University-Bangladesh (AIUB)

## Faculty of Science and Technology (FST)
## Department of Computer Science (CS)
## SDPM Group Project, Summer 2022

**Project Title:** Gents parlor management system

**Section: D**

**Submitted by**


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# 1.0 Introduction:

The topic of our project is Gents parlor management system. This document's primary goal is to give a project overview and project plan. The objectives, justification, system overview, stakeholder analysis, feasibility study, system components, effort estimation, activity diagram, and risk analysis will all be included in the document, among other things.

The steering committee, any stakeholders, and the project's present and prospective developers and testers are all included in the document's target audience.

The objective of this document is to serve as the terms of reference for requirement elicitation, development, monitoring, and control. The work will also serve as a foundation for further research to better understand the conception process.

The goal of this research is to comprehend every component of a Gents parlor as well as how environmental impact concerns are handled.

## 2.0 Project Title: Gents Parlor Management System

## 3.0 Objectives:

### Overall Objectives of the project:

Gent’s parlor must maintain professional details about all the service details, operations, and schedules to maintain the system. Currently, all these records are paper-based and offline. As a result, the gent’s parlor has all the issues related to the offline system. A digital web-based system must be developed to remedy the current issues of this offline-based system. The target of this project is to understand each and every element of Gents parlor and understand how factors that affect the environment are managed.

## Specific Goals to be achieved:

- Easily show all the service details to the customer
- Manage payment system
- Manage time schedule
- Get Feedback from the customers

## 4.0 Justification:

With the help of our system, clients can schedule their appointments any time of the day, without any help. It enables them to book a slot 24/7, even during non-business hours. Easy scheduling allows a client to check the calendar availability and book their preferred slot. It requires no middlemen. Once they confirm their booking, they immediately get a confirmation message. It saves a lot of time

Managing salon staff is no easy task. From assigning appointments to tracking their performance and progress.

- Using this system can streamline this process as well. It also helps in marketing efforts. Salon owners can send out discount coupons, gift vouchers, and free samples to clients who visit our shop often.
- With the help of the system, every payment is recorded. Salon owners can even generate electronic reports to track pending payments. Besides making the process easier for salon owners, it makes it easy for clients as well. They even have an option to pay at the time of booking as per their preferred payment method. The software also records which client has pending payments and which have paid in excess.

## 5.0 Systems Overview:

# Use case diagram

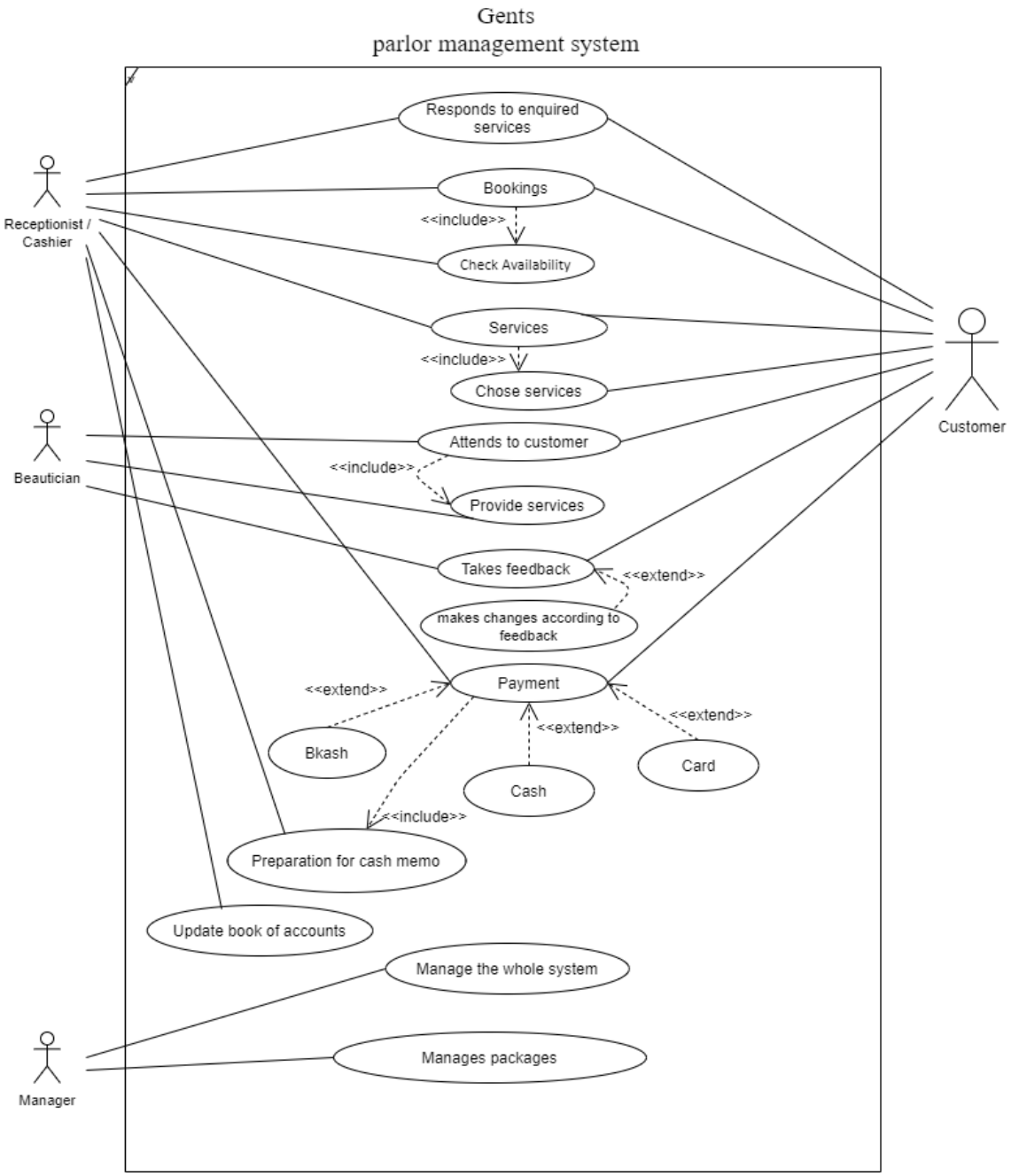
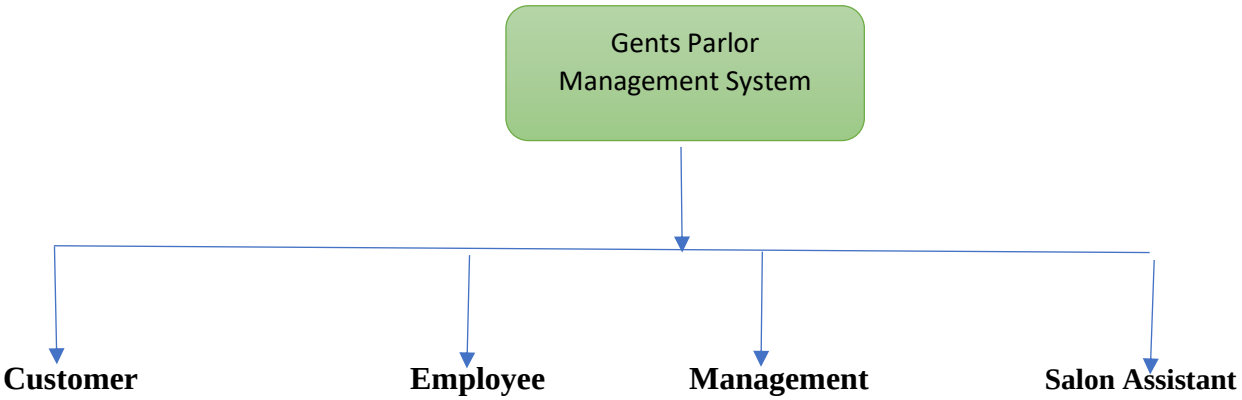



**Fig: Use Case diagram of gents parlor management system**

## 6.0 Stakeholders analysis

Stakeholders of our system are

i. Primary Stakeholders: User (Customer), Employee. Salon Assistant
ii. Secondary Stakeholders: Admin, Management.
iii. Internal Stakeholders: Programmer, Tester, Tracker, Consultant, Manager




## 7.0 Feasibility Study:

A feasibility examination is an evaluation of the practicality of a proposed plan or assignment. A feasibility observation analyzes the viability of a challenge to decide whether the project or undertaking is probable to prevail and which stage it is in. The goal of a feasibility look at is to rationally and objectively pick out the benefits and drawbacks of a deliberate or cutting-edge enterprise initiative, as well as the possibilities and risks given by means of the environment, the assets needed to pass ahead, and finally, the probabilities of fulfillment. The price important and beneficial to be realized are, in simplistic phrases, the 2 factors used to evaluate feasibility. Feasibility analysis: A project's feasibility look at is probably determined in phrases

of technical, financial, or each of these factors. Commonly known about five categories of feasibilities are Technical, Economic, Legal, Operational, and Scheduling are referred to by the abbreviation TELOS.

**Technical Feasibility**:

Technical feasibility is the formal procedure of assessing whether it's far technically possible to manufacture a product or service. Earlier than launching a brand new imparting or taking up a consumer challenge, it is vital to devise and prepare for every step of the operation.

**Economic Feasibility:**

The cause of monetary feasibility examination (EFS) is to demonstrate the net benefit of a proposed project for accepting or disbursing electronic price range/blessings, taking into consideration the blessings and prices to the organization, other national agencies, and the majority as a whole. The degree to which the monetary advantages of something to be made, accomplished, or accomplished are extra than the monetary fees. There are some economic feasibility categories like

- Prepare an Opening Day Balance Sheet. Review and Analyze All Data. Make a Go/No-Go Decision.
- Conduct a Preliminary Analysis.
- Prepare a Projected Income Statement.
- Conduct a Market Survey, or Perform Market Research.
- Plan Business Organization and Operations. .

**Legal feasibility:**

A legal feasibility evaluation is a procedure of checking a meant restructuring/steps plan for ability troubles from a criminal perspective, and getting ready a plan to be applied during the implementation section of the restructuring, such that the supposed restructuring involves a consolidated and incorporated tax .it is used to acquire the outline of the hassle and determine whether or not a feasible or appropriate solution exists or no longer. the principal goal of a feasibility study is to collect the problem scope in preference to solve the hassle. Even though the fee gadget we have delivered isn't formally sanctioned via the government, it's actually there as a demonstration and can be up to date with the right local charge options and APIs.

## Schedule feasibility:

In scheduling feasibility, a corporation estimates how a good deal of time the task will take to complete. whilst those areas have all been tested, the feasibility evaluation allows discovery of any constraints the proposed venture may face, which include: inner undertaking Constraints: Technical, era, budget, aid, and so forth. If a project takes too long to complete earlier than its miles useful, it will fail. generally, this involves evaluating the device's development time and figuring out if it can be completed within a particular time frame through the usage of strategies like payback length. In our challenge, we strive to finish as much as viable so it is viable for us.

## 8.0 Systems component:

The components of a system are any of the parts that are necessary for the system to operate. As our system is gent's parlor management system. In our system, there will be a Registration component, login component, customer component, Management component, Administration component

**1. Registration Component**: This is the initial component of our system. If any user wants to use our salon app then he/she needs to do the registration first. After successful registration, he can use the system.

**2. Login Component:** When you run this app, you will see the application overview for a salon management system, where there will be three users.

**3. Customer Component:** After login, the Customer can choose multiple options. By using those options, they can choose time, service & price, styles, booking options, feedback, and exit from the system.

**4. Employee Component:** To make our system interactive employees must be needed in the system. Those people who want to give service, are the employee. The employer hires employees. If the salon needs any employee for their working purpose then they will register here employer and provide a job.

**5. Management Component:** The management board controls the whole system. They are concerned about customer database, offers sent, keep track of all the employee details. They also hire employees for a salon. Their main goal is to keep the system interactive and secure.

**6. Administration Component:** The administration board controls the whole system. They are concerned about data, security, and everything about the system. Their
The main goal is to keep the system interactive and secure.

## 9.0 Process Model

We are going to follow the incremental Model. We know that the incremental model divides the system's functionality into small increments that are delivered one after

the other in quick succession. Most of the functionality is implemented in the initial increment.

In our project in the first release, we try to maintain all requirements of the customer. Then we analyze the customer needs and their satisfaction. If needs any development in the project than in the second increment, we try to update this. We already know incremental development is based on developing an initial implementation exposing it to user feedback and evolving it through a new version. The process activities are interwoven by feedback.

For the development purpose of each increment, we follow the incremental model.

**Incremental Model Phases:**

**Requirement Analysis:**

In the first phase of the incremental model, the product expertise identifies the requirements. And the system's functional requirements are understood by the requirement analysis team.

**Design:**

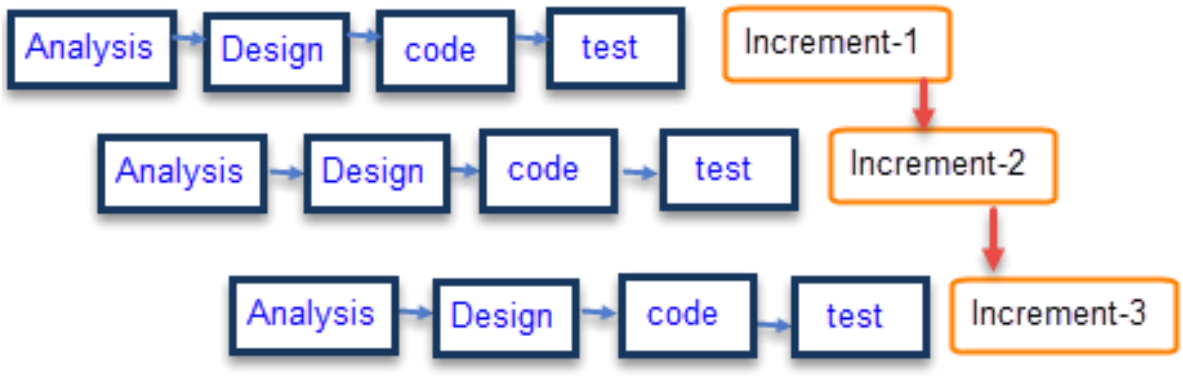
In this phase, the increment model of SDLC, the design of the system functionality, and the development method are finished with success. When software develops new practically, the incremental model uses style and development phase.

**Coding:**

The coding of software is done by the developers according to the requirements and design during this stage.

**Testing:**

In the incremental model, the testing phase checks the performance of each existing function as well as additional functionality. In the testing phase, various methods are used to test the behavior of each task.




Incremental Model

The above things are the development phase of the incremental model and in our project, we try to follow these phases. After each increment, we try to come out with a new feature in our project this helps the user to meet their satisfaction.

**Justification of Model:** After the first release of our project, we make an effort to solicit consumer and stakeholder input. Everyone learns much sooner if the shareholder doesn't like anything. It is effective because errors are repaired as they appear and developers only pay attention to what is crucial. We attempt to address this issue after discovering bugs and other issues in the following increment.

We also know that projects with comprehensive and explicit requirements and projects with loosely linked elements benefit greatly from the incremental paradigm.

In our project, we employ a salon management system, and we must fully satisfy the needs of the customer by updating our features, releasing a new version, and providing more user amenities.

## 10.0 Efforts estimation:

To estimate the required effort, we must divide the project into smaller components. The Work Breakdown Structure (WBS) is a method of breaking down a large project into smaller components. The following activities will be included in the work breakdown structure:

- ✓ Project planning
- ✓ Requirement gathering
- ✓ Design analysis
- ✓ System component design
- ✓ Design Implementation:
  - ➢ Page creation
  - ➢ UI/UX design
  - ➢ Content creation
  - ➢ Backend System Design
- ✓ Testing and Production

The WBS chart is shown below:

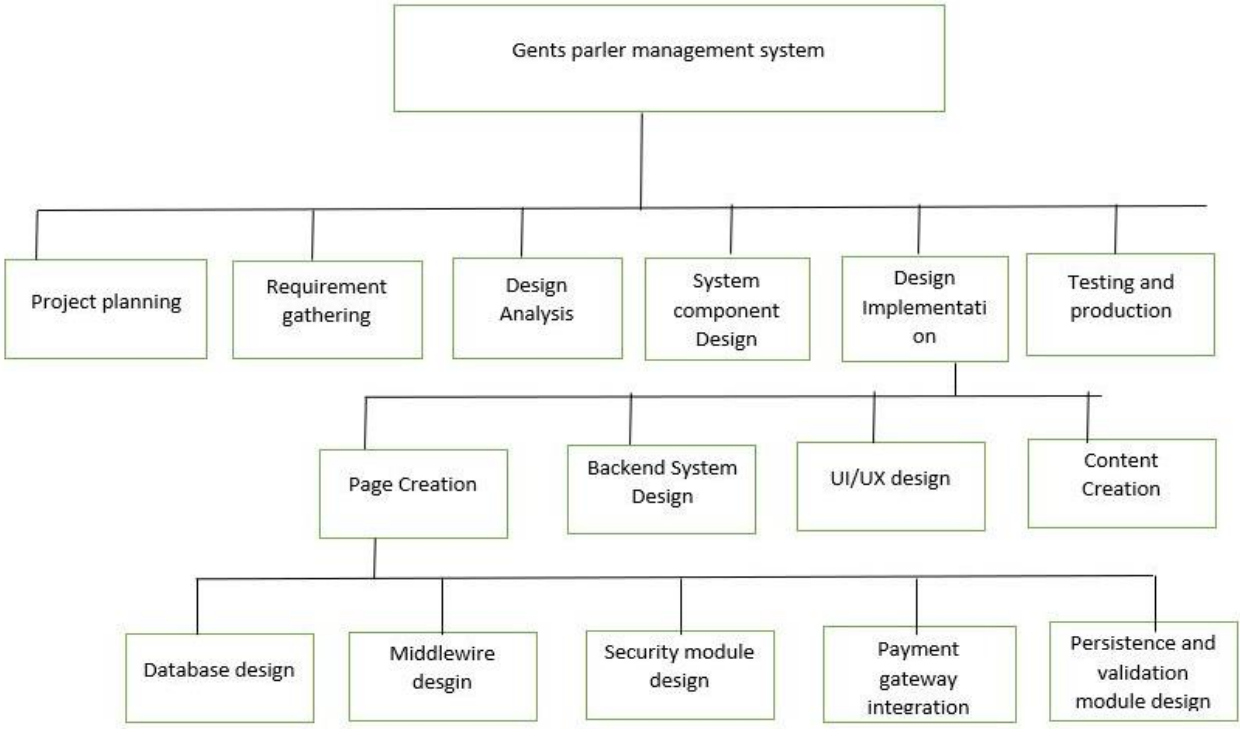



Fig: WBS Chart

We may estimate the needed work using the aforementioned WBS. We will forecast development and implementation timelines using the COCOMO model and historical data from a previously completed organic project. Using a comparable project and completed tasks, the average LOC for the modules may be approximated as follows:

| Task | SLOC |
|---|---|
| Page Creation | 2,000 |
| UI/UX Design | 2,000 |
| Content Creation | 1,500 |
| Backend System design- | |
| Database Design | 6,00 |
| Middleware Design | 7,00 |
| Security Module Design | 8,00 |
| Payment Gateway Integration | 7,00 |
| Persistence and Validator Design | 7,00 |
| Total | 9,000 |

So, total SLOC = 9,000

So, the person-months needed for the project can be calculated using the COCOMO method-

We know,
It is an organic project. So, <Effort Factor> = 2.4 , P = 1.05, T = 0.38

Effort = PM=Coefficient<Effort Factor> *(SLOC/1000) ^P
=2.4*(9,000/1000) ^1.05
=24 person months

So, the required development time can be calculated as follows:

DM = 2.50*(PM) ^T
= 2.50*24^0.38
= 8 months

Here,
PM = Person-months need for the project= 24 person months
T = 0. 38 (as the project is an organic project)
And, the required number of people

ST = PM/DM
= 24/8

= 3 peoples

Here,
PM = Person-months needed for the project = 24 person months
DM = Development time = 8 months

We can reduce the time required to complete the project by increasing the number of people working on it.

## 11. 0 Activity Diagram :

At first, we list the activities identified and described in the WBS and the durations associated with each activity. The table is given below:

| Label | Activity Name | Precedence | Duration (weeks) |
|---|---|---|---|
| A | Project Planning | None | 3 |
| B | Requirement Gathering | A | 4 |
| C | Design Analysis | A | 2 |
| D | System Component Design | B, C | 5 |
| E | Page Creation | D | 4 |
| F | UI/UX Design | D | 8 |
| G | Content Creation | D | 4 |
| H | Backend System design | D | 12 |
| I | Testing and Production | E, F, G, H | 2 |

Now we construct the precedence network diagram of the activities mentioned above:

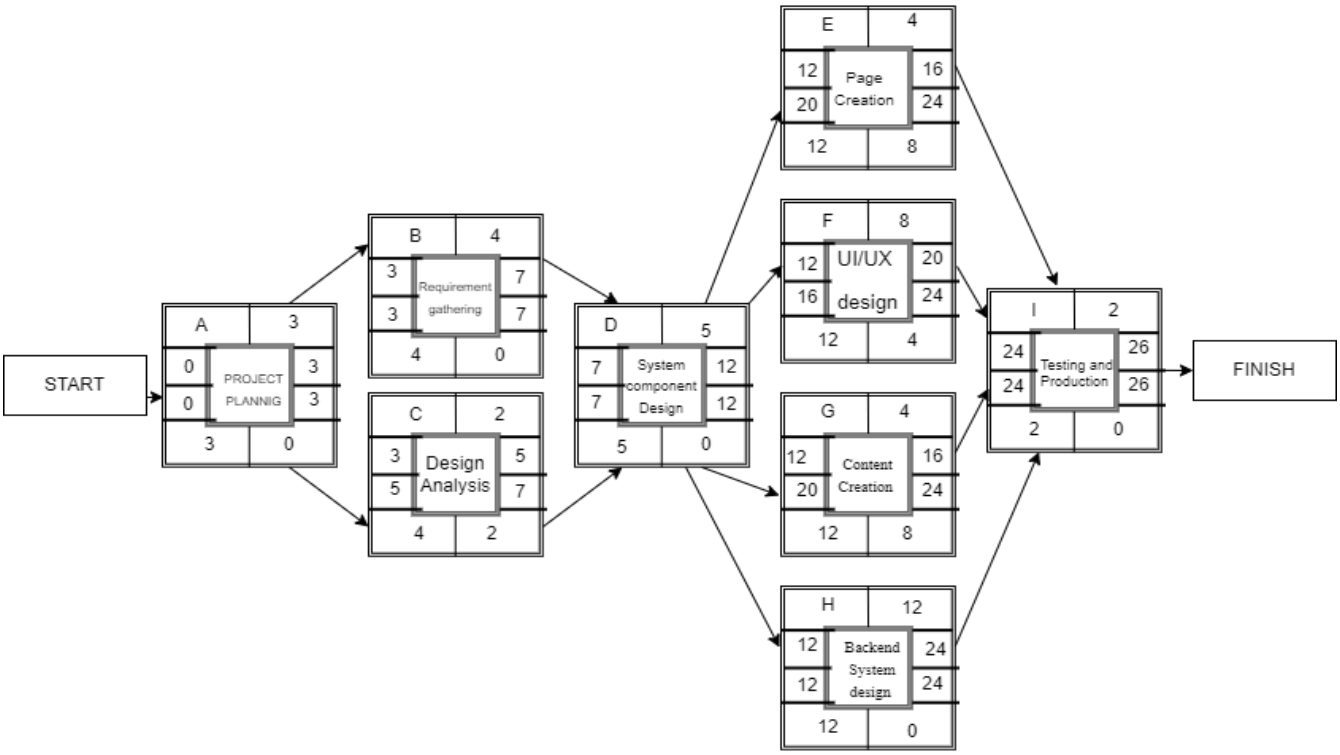
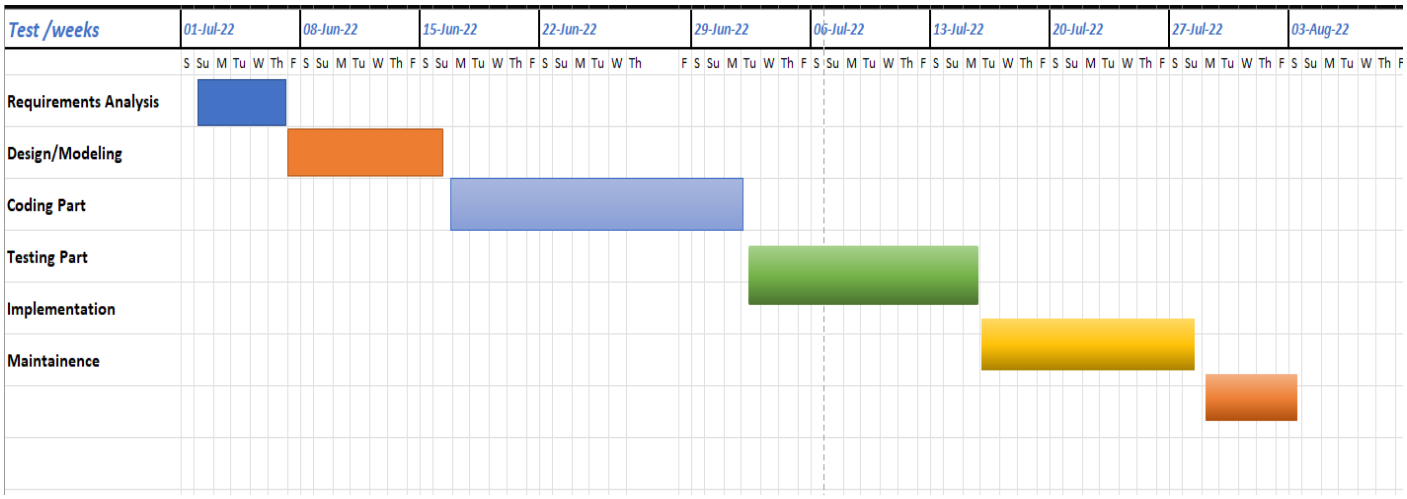



Fig: Precedence network for the activities

The critical Path of this project is: **Start-A-B-D-H-I-Finish**

## Project Scheduling:




## 12.0 Risk Analysis:

There can be different types of risks involved with the project development as it progresses. These risks can be of various categories. So, a risk table is designed for this purpose. The risk table is given below:

| S/N | Risk Description | Probability | Impact | Mitigation Plan |
|---|---|---|---|---|
| 01. | Team members missing because of sickness. | 10% | Moderate | Need to check my health before starting the project and remain conscious about health. |
| 02. | Less reuse than planned. | 10% | Low | Extra precautions should be taken. |
| 03. | Funding shortage. | 50% | High | Manage funding members for backup. |
| 04. | Lack of training on tools. | 50% | Significant | Need to identify all tools before starting. |
| 05. | Staff inexperienced. | 35% | Significant | Take some experienced staff in the team. |
| 06. | Time spent on requirements development | 10% | Low | Save time while doing requirements development. |
| 07. | Unstated requirements | 15% | Significant | There will be no significant. |
| 08. | Requirement's prioritization | 50% | High | Take client opinion while prioritizing. |
| 09. | Requirements understanding | 20% | High | Need to understand the whole project before starting. |

| | | | | |
|---|---|---|---|---|
| 10. | Expanding project scope | 20% | High | The project scope should be set with both party's understanding. |

These are the possible risks that are identified initially. But it is important to continuously monitor and control the processes to look for possible inclusion of new risks and mitigation plans.

## 13.0 Budget for the project:

We calculate this budget for our assumption

Total working days = 24*7= 168days = 168*6 = 1008 hour

Salary per hour: 500 Taka

Maintenance cost per hour: 2500 Taka

| | |
|---|---|
| Salary | 1008*500=504000/- |
| Requirement | 50,000/- |
| Transportation | 10000/- |
| Maintenance [ for 6 months ] | 1,25000/- |
| Utility | 1,50000/- |
| Training & Hardware | 50,000/- |
| Profit [20%] | 200200/- |
| Total | 1089200/- |

## 14.0 Conclusion:

This system will help saloons to pitch their business underneath their space to expand their everyday business. This project also helps local vendors to show their presence globally on the internet and serve their customers with their art In the salon and beauty industry, the Online Reservation System is suitable for use to reduce customer waiting time and experience a hassle-free environment. From the project perspective from start to end of this project, was prototyped to the client to ensure that his requirement has been fulfilled by the implementation of the system in each phase. This constant checking with the client is assured that the developed system met the requirements of the business that were identified in the requirement analysis phase and client requested. By the user reviewing the functional and non-functional requirements discovered during the analysis phase and checking back with the functionalities implemented in the developed system, it can be said that all the requirements of the user have been satisfied. The simple user interfaces that were designed and developed are easy to learn and use and proved to be satisfactory for the user.