Hospital Management System

Software Project-1

Declaration

We declare that the submitted project is our original work and has not been submitted in any form for another degree or diploma at any university or other institute of tertiary education. Information derived from the published and unpublished work of others has been acknowledged in the text and a list of references is given.

We declare that this project does not contain any content that discloses the secret of any organization or related parties. ██████████████████████████████ will not be held liable for any such activities, as for the project is presented as our original work.

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Approval

The Software Project or Project titled "Hospital Management System" has been submitted to the following respected members of the ████████████████████████████████ ███ ███████████████████████████████ by the following students and has been accepted satisfactory.

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Acknowledgement

Abstract

This project Hospital Management system incorporates enrollment of patients, putting away their subtleties into the framework, and furthermore modernized charging in the drug store, and labs. The software has the office to give a unique id for each patient and stores the clinical details of every patient and hospital tests done automatically. It incorporates a search facility to know the current status of every understanding. User can look through details of a patient utilizing the id. The Hospital Management System can be entered using a username and secret word. It is available either by a manager or secretary. No one but they can add information into the data set. The information can be recovered without any problem. The interface is very easy to understand. The information's are all around ensured for individual use and makes the information preparing exceptionally quick.

Introduction

The project Hospital Management system incorporates enrollment of patients, putting away their subtleties into the framework, and furthermore modernized charging in the drug store, and labs. The product has the office to give a unique id for each patient and stores the subtleties of each tolerant and the staff consequently. It consolidates a pursuit office to know the current status of each room. Customer can look through availability of a subject matter expert and the subtleties of a patient using the id.

The Hospital Management System can be entered utilizing a username and secret key. It is open either by an executive or assistant. No one but they can add information into the database. The information can be recovered without any problem. The interface is very easy to use. The information's are all around secured for individual use and makes the information preparing quick.

Hospital Management System is incredible, adaptable, and simple to utilize and is planned and created to convey genuine possible advantages to hospitals.

Hospital Management System is a product item suite intended to improve the quality and the executives of emergency clinic the board in the space of clinical cycle investigation and movement-based costing. Hospital Management System empowers you to build up your association and improve its adequacy and nature of work. Managing the key processes efficiently is critical to the success of the hospital helps you manage your processes.

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Chapter-1: Statement of Work

1.1 Purpose/Objectives

The feasibility study of this project gives an idea about the benefits that are most likely associated with it. The goal is to verify that all the resources invested in this project results in a positive outcome and that it is a successful one.

This study makes sure that all the investments needed for this project are met and also considers the factors that are not directly related to it. The project will move on to the next step after specifying the total cost required for completion.

Feasibility study helps companies understand which projects they should develop and which ones to abandon. Although this study absorbs a small portion of the available resources, it is still a better option than investing in a project that show no sign of producing profit. Otherwise a lot of time and money will be wasted on a project that has no value.

1.2 Scope

- To development **Hospital Management System** where Users will feel easy to get information.
- This system makes the administrative work easy.
- Multiple opportunities in one system like booking appointments and cabins etc.

1.3 Proposed System

This software is intended to make the life of patients much easier. Patients don't have to go through the traditional hassle of going to a hospital and booking appointment with doctors. They can easily sit at home and register online to book an appointment. They don't even have to meet their doctors on a regular basis as they can interact online and consult their problems. They can also change their doctors if they want. The payment system is also much easier for them as it will be done through Bkash or Debit card…

Below are the benefits of the system being developed:

- Online registration instead of traditional one.
- No hassle for booking appointment.
- Fast and safe booking.
- Online payment options.
- Efficient time management.
- Customization of the generated report.
- Online interaction instead of meeting doctors on daily basis.
- Option of changing doctors if desired.
- Schedule and appointment history.
- Patient satisfaction.
- Email and SMS notification updates.

1.4 System Features

There are 6 types of Users here. They are:

- Admin
- Doctor
- Hospital Manager
- Store Manager
- Accountant
- User/ patient/ public

In this project, the "Admin" has the following features:

- Login
- Add store manager
- Delete store manager
- Add hospital manager
- Remove hospital manager
- Add doctor
- Remove Doctor
- Add Accountant
- Remove Accountant
- Fix salary
- Can recover password
- Can add notice
- Read complain
- logout

In this project the "Doctor" has the following features:

- Login
- See how many patient has taken appointment
- See patient details who has taken appointment of him
- Write prescription
- Update appointment info
- Update personal information
- Update availability
- Change password
- Logout

In this project the "Hospital Manager" has the following features:

- Login
- View hospital info
- Can modify any info of hospital
- Update notice on hospital notice section
- Can recover password
- See doctor's info
- See doctor's availability

- Add new service
- Update service
- Remove service
- Add discount service
- Remove discount
- Logout

In this project the "Store Manager" has the following features:

- Login
- Add new medicine
- Modify or delete medicine
- Can fix medicine price
- Can change password
- Change personal info
- Modify medicine list
- Add/remove discount
- Logout

In this project the "Accountant" has the following features:

- Login
- See patient bill info
- Update patient bill info
- Give clearance of patient payment
- Update personal profile
- Logout

In this project the "User" has the following features:

- Login
- Apply for appointment
- Consult with online doctor
- Order medicine
- Book cabin
- Can view notices
- Update profile

- See bill info
- Check discount
- Can text admin for any complain
- Emergency cabin book without login
- logout

1.5 Environment

1.5.1 Organizations Involved

Project Client ████████████████
Developer: Hospital Management System.
User: Online Users or Customers.

1.5.2 Processing

- There will be graphical user interface (GUI) for view purpose
- Any browser will be able to view the website or web application
- There will be a database which will store all type of information regarding patient
- The database information of the patients can be viewed by their assigned doctors
- Admin can view all type of information on the system and modify it
- Patients can view their own information as well
- The login and logout system will be completely authenticated and secure
- The data transmission for all type of users will be secure
- The records of all previous transaction are stored

1.5.3 Security

System's security requirements:

- The application demands authentication from the users for access
- Registered users need to provide their email and mobile number for verification

- In case users forget their password, they can reset it after confirming their identity through verification
- Identity confirmation can be verified through the registered email address or mobile number
- Every time a user logs in from a new device, they will be sent a notification on their email or mobile

1.6 Assumptions

For this project, web browsers like Google Chrome, Mozilla Firefox etc will be used to get access to the user interface. Third party software might also be used to develop the project. These software are open source so there is no scope for anything being illegal here. All the contents of the project are completely genuine.

The software and libraries used for this project are as follows:
- PHP ZIP files Library for compressing files
- PHP Session for user login verification
- Ajax library for dynamic interface.
- MOO tools, JavaScript, JQuery etc

1.7 Constraints

- Usage outside regulation: For this project, the data transmission occurs through TCP/IP. Encryption services like SSL are not being used here. This might lead to some constraints regarding data passing. Problems like confidentiality and integrity might occur. Both registered and unregistered users can use the software through client application with help of internet browser on server side. In case of any missing password found by an unknown user, the responsibility goes to valid user.

- Bandwidth limitations: Server connection might be lost due to technical error. This includes both hardware and internet connection. In such cases, the query needs to be run again.

- Databases: MySQL will be used as the database software for this project. If the user queries exceed the database limitation then the database table will have to be checked again in case of lack of database caching.

- Parallel operations: If other internet applications are run along with this software then it might slow the connection speed. This might hamper the project as well.

- Language requirements: PHP will be used as the main programming language of this software. In case anyone wants to use oracle then bind technique variables will have to be used.

- Security considerations: If users are not willing to purchase SSL security then there will be no public key encryption service for the client applications. This will lead to some problem in case of passing data.

In case of internet security, the following issues might be seen –

- Authentication problem: Server might not recognize valid registered users

- Confidentiality problem: Both user and server fail to understand the message contents

- Integrity problem: Server might not be able to ensure that there is no alteration of message without detection

- Impersonation: There might be fake source address in packet

- Hijacking: The connection might be hacked by a hacker and the valid user might be replaced

- Denial of service: Services might be prevented from being used by others

1.8 Proposed System

This software is intended to make the life of patients much easier. Patients don't have to go through the traditional hassle of going to a hospital and booking appointment with doctors. They can easily sit at home and register online to book an appointment. They don't even have to meet their doctors on a regular basis as they can interact online and consult their problems [6]. They can also change their doctors if they want. The payment system is also much easier for them as it will be done through Bkash or Debit card.

Below are the benefits of the system being developed:
- Online registration instead of traditional one
- No hassle for booking appointment
- Fast and safe booking
- Online payment options
- Efficient time management
- Customization of the generated report
- Online interaction instead of meeting doctors on daily basis
- Option of changing doctors if desired
- Schedule and appointment history
- Patient satisfaction
- Email and SMS notification updates

1.8.1 Description/Improvements of Proposed System

- Satisfaction of patients
- Low labor cost
- Low error regarding data passing and data entry
- Authenticated transaction
- Fast paced transaction
- Efficient monitor performance
- Reduced system loading time

1.8.2 Resources

All the resource needed is provided below.

1.8.3 Hardware

➤ Minimum requirements for server:

- ➢ Processor: Xeon based microprocessor.
- ➢ RAM: 16 GB.
- ➢ System Type: Linux (64 bit).
- ➢ Storage: 256 GB SSD.
- ➢ For Storage Service: Network File System (NFS)

➢ Minimum requirements for client:

  ➢ Processor: Dual-core.
  ➢ RAM: 2 GB.
  ➢ System: Windows, MAC OS X, Linux.
  ➢ Web Browser: Firefox, Google Chrome, Opera

1.8.4 Software

- Notepad++ / Sublime Text.
- PHP, MySQL.
- Apache

1.8.5 Operating Environment

The system will be operated from the external (your preferred data center) Linux Server in which site will be hosted. Hosting server has 99% Uptime. This website is platform independent. User application is accessible through various kinds of browsers like Opera, Mozilla Firefox, and Google Chrome etc. This website is a web application where client application has user interfaces through browser and main part is hosted on Apache Server. IBM or MAC any platform user can use. Operating System can be used Windows of any version from Windows 98, Windows XP/Vista to Windows 10, MAC OS X 10.5 or above.

1.9 Project Time & Cost

1.9.1 Project Period

- Expected time of completion of project is 4 months.

1.9.2 Project Schedule

Term Expansion

Term	Description
BA	Business Analyst
PM	Project Manager
D	Developer
QT	Quality Tester

Table 1.1

Effort Estimation

Phase	Effort	Estimate (in weeks)
Planning Phase	Scope definition	1-2
	Requirement gathering	4-7
	Development planning	3-4
	Test planning	4-5
	Maintenance planning	4-5
Designing Phase	Designing prototype	3-4
	Architecture developing	3-4
	Designing product	3-5
Execution Phase	Develop product	4-5
	Develop and execute tests	2-3
	Deployment	2-4
Closing Phase	Maintenance	Will be continued till life time

Table 1.2

1.9.3 Domain & Hosting Package

Domain:

➢ **.com** 950 tk/yr

Hosting Package: Will be upgraded later if required.

➢ Web Space: 1GB SSD Storage
➢ Bandwidth: 30GB/monthly
➢ RAID 10 SSD Server
➢ Unlimited Sub Domains
➢ Unlimited Email Accounts
➢ Unlimited Databases
➢ Tk. 1500/Year

1.9.4 Estimated Service Cost

Estimated service cost

Description	Cost Assumption
Site launch (hosting)	20,000 BDT
Maintenance (1 year)	50,000 BDT
Developers	1,25,000 BDT
Grand total	**1,95,000 BDT**

Table 1.3

1.10 Risk assessment

The project has identified 2/3 risk for the project as described below. Risk management, mitigation and monitoring plans are described in the following RISK (Risk Information Sheet) [3].

Risk Information Sheet

Risk ID	Description	Probability	Impact
Risk-1	Software team does not good experience distributed database management	60%	2
Risk-2	Requirements Inflation	80%	2
Risk-3	Employee turnover. So personnel leave the project taking critical information with them that significantly delays or derails the project.	60%	2
Risk-4	Fain timeline of project for poor productivity	80%	3
Risk-5	Insignificant Cost increase	50%	2
Risk-6	Quality degradation barely noticeable	50%	2
Risk-7	Project Contain with bug	80%	2
Risk-8	Project security system	60%	2
Risk-9	Un understandable for user.	50%	3
Risk-10	Weak algorithm	60%	2

Table 1.4

1.11 Assessing overall project risk

1. Have software engineer team formally committed to support the project?

Answer: Yes. All the members are formally committed to support the project. They also ensure that they will give all types of available facilities.

2. Are requirements fully understood by the software engineering team and their customers?

Answer: Yes. As the software engineering team or the developers has the sound knowledge about the requirements so it is easily understandable by the team. The requirements details are well organized also informative, so it is under stable by the customers.

3. Are end-users enthusiastically committed to the project and the system/product to be built?

Answer: Yes. Because the end-users are expecting that, they will be able to find all kind of information about Chain Store Management System.

4. Have user been involved fully in the definition of requirements?

Answer: Yes. The user has been fully involved in the definition of requirements. They are aware of the application requirements.

5. Is project scope stable?

Answer: Yes. Project scope is stable because the minimum and mandatory scope is almost covered by the software engineering team. If any further scope will arise then just adding it with the old ones.

6. Does the software engineering team have the right mix of skills?

Answer: Yes. The software engineering team has the right mix of skills. The team members have the capability of doing their work in a team, ability to work in pressure and also have sound knowledge according to the software implementation.

7. Are project requirements stable?

Answer: Yes. Currently all possible requirements are being listed, and seem that if anything would be added later to the list will not make the project unstable. All requirements for this project are easily available that will enthusiast the end-user to use it.

8. Does the project team have experience with the technology to be implemented?

Answer: Yes. The project team has experience with the technology to be implemented because they have the sound knowledge about the technologies and the technologies are also implemented by them before.

9. Does the project team and client are aware about the possible risks?

Answer: Yes. Project team prepare the possible risk assessment and aware of handling the risk. Client is also being notified

Chapter-2: Software Requirement Specification

2.1 Objectives and Scope

The project "Hospital management system" is aimed to develop to maintain the day –to-day state of admission/discharge of patients, list of doctors, reports generation, and etc. It is designed to achieve the following objectives:

1. To modernize all insights about tolerant subtleties and emergency clinic subtleties.

2. Planning the arrangement of patient with specialists to make it helpful for both.

3. Booking the administrations of particular specialists and crisis appropriately with the goal that offices given by clinic are completely used in powerful and productive way.

4. On the off chance that the clinical store issues medications to patients, it ought to diminish the stock status of the clinical store and the other way around.

5. It ought to have the option to deal with the test reports of patients led in the pathology lab of the medical clinic.

6. The stock ought to be refreshed consequently at whatever point an exchange is made.

7. The data of the patients ought to be stayed up with the latest and there record ought to be kept in the framework for verifiable purposes.

2.2 Overview of the Present System

Currently there are very few system like Square Hospital Ltd implemented in Bangladesh that are based only on finding and booking appointment with doctors.
The online website of square hospital ltd lets users find doctors and book appointment on a specific branch. There is no scope of interacting and consulting with the appointed doctors online. There is no scope of auto generating reports based on individual patient's data. Patients have to book appointment and visit the hospital for consulting.
Our project removes all these hassles and provides an easier and smoother service.

2.3 Data Flow Diagram of the Present System

Not required.

2.4 Weakness of the Present System

- Most of the links are not effective
- Less information and availabilty all kind of tests.
- No Itinerary Planner

2.5 Overview of the Proposed System

The proposed system will allow non registered users to view the site only. If a user is registered then they will be able to check the availability of doctors and book appointments. After confirming the booking, they will be given a time schedule to interact and consult with the appointed doctor online. They will receive an auto generated report based on the data they provide like how much physical exercise they should take, what type of food and medicine they should consume etc. The patient can discuss with their doctor and customize the report later on according to their own comfort.

2.6 Benefits of Proposed System

- No hassle for booking appointment
- Client will define their plan and system will find the best doctors and schedules
- Online interaction system between doctor and patient
- Recommends amount of physical exercise to take
- Recommends the type of food to eat
- Recommends the type and amount of medicine to take
- Give suggestion of doctor list to every client according to their budget
- Choices from the best doctors
- Fast & safe booking
- Client satisfaction
- Compliance with time

2.7 System Features

There are 6 types of Users here [6]. They are:

- Admin
- Doctor
- Hospital Manager
- Store Manager
- Accountant
- User/ patient/ public

In this project, the "Admin" has the following features:

- Login
- Add store manager
- Delete store manager
- Add hospital manager
- Remove hospital manager
- Add doctor
- Remove Doctor
- Add Accountant
- Remove Accountant
- Fix salary
- Can recover password
- Can add notice
- Read complain
- logout

In this project the "Doctor" has the following features:

- Login
- See how many patient has taken appointment
- See patient details who has taken appointment of him
- Write prescription
- Update appointment info
- Update personal information
- Update availability
- Change password
- logout

In this project the "Hospital Manager" has the following features:

- Login
- View hospital info
- Can modify any info of hospital

- Update notice on hospital notice section
- Can recover password
- See doctors info
- See doctors availability
- Add new service
- Update service
- Remove service
- Add discount service
- Remove discount
- Logout

In this project the "Store Manager" has the following features:

- Login
- Add new medicine
- Modify or delete medicine
- Can fix medicine price
- Can change password
- Change personal info
- Modify medicine list
- Add/remove discount
- Logout

In this project the "Accountant" has the following features:

- Login
- See patient bill info
- Update patient bill info
- Give clearance of patient payment
- Update personal profile
- Logout

In this project the "User" has the following features:

- Login
- Apply for appointment
- Consult with online doctor

- Order medicine
- Book cabin
- Can view notices
- Update profile
- See bill info
- Check discount
- Can text admin for any complain
- Emergency cabin book without login
- logout

2.8 Hardware and Software Requirements

2.8.1 Hardware

➢ Minimum requirements for server:

  ➢ Processor: Xeon based microprocessor.
  ➢ RAM: 16 GB.
  ➢ System Type: Linux (64 bit).
  ➢ Storage: 256 GB SSD.
  ➢ For Storage Service: Network File System (NFS)

➢ Minimum requirements for client:

  ➢ Processor: Dual-core.
  ➢ RAM: 2 GB.
  ➢ System: Windows, MAC OS X, Linux.
  ➢ Web Browser: Firefox, Google Chrome, Opera

2.8.2 Software

- Notepad++ / Sublime Text.
- PHP, MySQL.
- Apache

2.9 Human Resource Requirements

The total human resource needed for implementing and operating the system is mentioned below.

- ➢ **Hardware Specialist**: A part time hardware specialist is needed to manage all the computers of the center. So, in case of any hardware failure, he/she may come and solve the problem.
- ➢ **Computer operator/Data entry operator**: A computer operator is needed to upload the online question to the system in case specific user lacks the systems know how.

2.10 Constraints and Limitations

Assumptions and Dependencies

- The users have sufficient knowledge of computers.

- The user's computer should have Internet connection and Internet server capabilities.

- The users know the English language, as the user interface will be provided in English.

Constraints

- Bandwidth limitations: It may lose server connection for technical error (Depends on Hardware/Internet connection). We need to run query again.

- Databases: Databases we are using Oracle Database. User queries more than server's limitations we need to check databases and refresh table data.

- Parallel operations: Parallel use of other Internet application with this software may hamper in bandwidth, may occur taking time for a query for slow connections.

- Language requirements: If any user wants to use any language other that what we used for Oracle Database, we need to use bind variable technique.

- Communications protocols: Communication protocols we are using- TCP/IP to interact with the server. Other protocol is not considerable, if user wants.

2.11 Budget

<u>Budget</u>

Description	Cost Assumption
Site launch (hosting)	20,000 BDT
Maintenance (1 year)	50,000 BDT
Developers	1,25,000 BDT
Grand total	**1,95,000 BDT**

Table 2.1

2.12 Conclusion

This Requirement Specification Document has been developed based upon by the studying common scenario and previous experience of the project manager. Thus any unusual circumstances rise on the process of development may derail the values and time frame mention in this document.

Chapter-3: Diagrams

3.1 Diagrams

3.1.1 Login Use Case Diagram

By id and password user can login. Here Admin, Doctor, Hospital manager, Store manager, Patient, Accountant inherit the person [4].
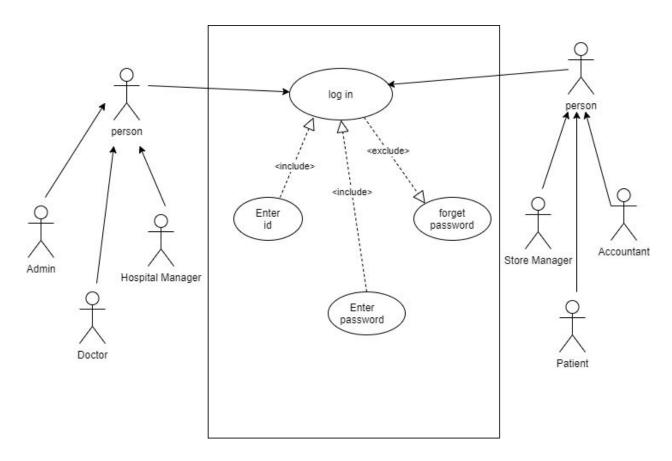

Figure-1: Login use case diagram.

3.1.2 Admin Use Case Diagram

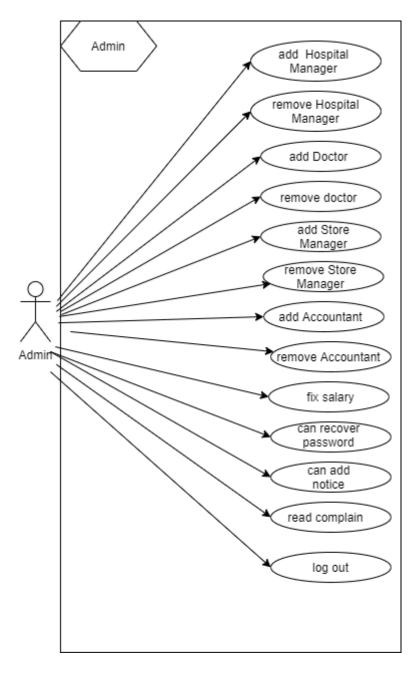After login Admin can do the task mentioned below in the use case diagram.

Figure-2: Admin use case diagram.

3.1.3 Doctor Use Case Diagram

After login Doctor can do the task mentioned below in the use case diagram [5].

Figure-3: Doctor use case diagram.

3.1.4 Hospital Manager Use Case Diagram

After login Hospital manager can do the task mentioned below in the use case diagram [2].
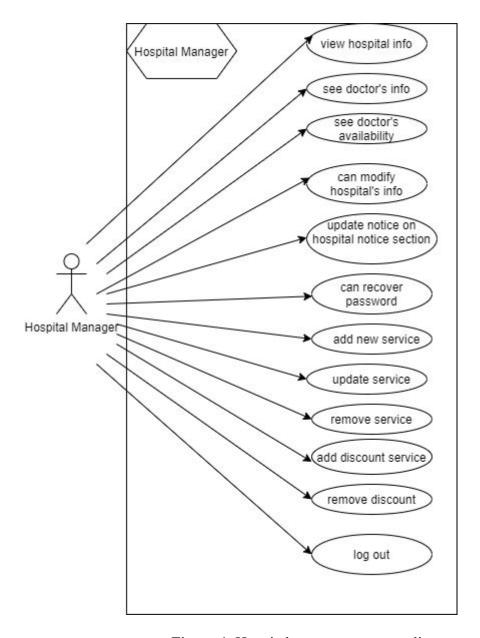
Figure-4: Hospital manager use case diagram.
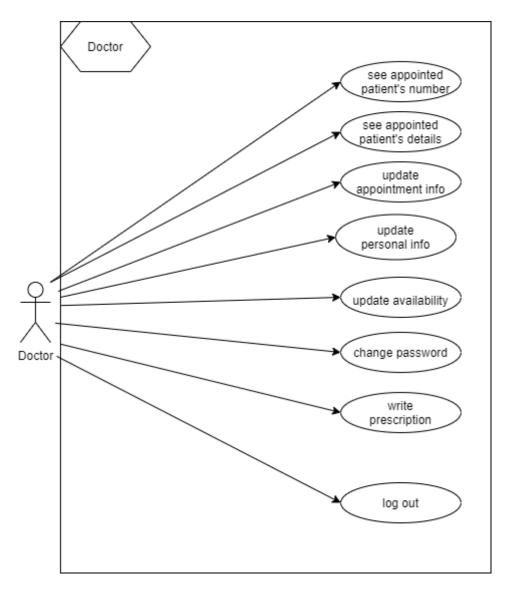
3.1.5 Store Manager Use Case Diagram

After login Store manager can do the task mentioned below in the use case diagram.

Figure-5: Store manager use case diagram.

3.1.6 Accountant Use Case Diagram

After login Accountant can do the task mentioned below in the use case diagram.
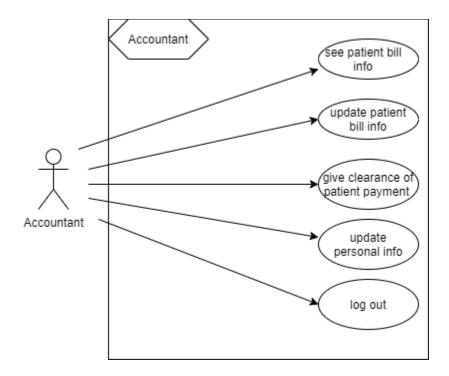
Figure-6: Accountant use case diagram.

3.1.7 Patient Use Case Diagram

After login Patient can do the task mentioned below in the use case diagram. Here only patient can book emergency cabin without login.
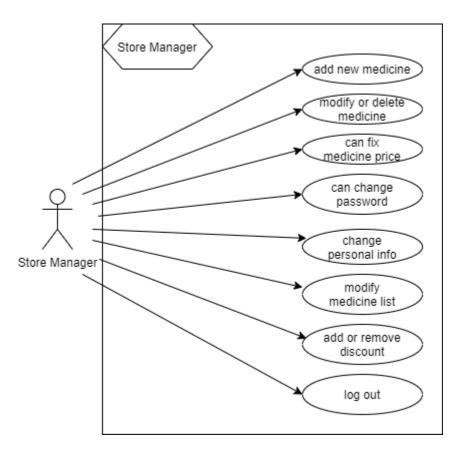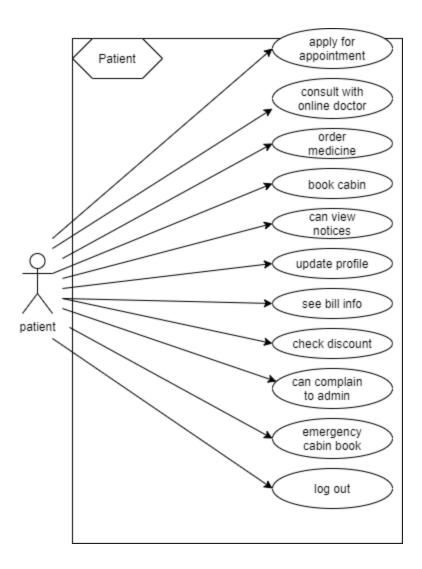
Figure-7: Patient use case diagram.

3.1.8 Activity Diagram

After login Admin can access all the information, modify all the information; Doctor can see the patients' information, update appointment info and availability; Store manager can access medicine table, modify medicine table; Patient can see doctor information, notice, bill information, can order medicine, can book cabin or emergency cabin, text complain to Admin; Hospital manager can access information of doctor, store manager, accountant, patient, view hospital information, modify hospital information, access the service; Accountant can access patient bill information, receive the payment of patient and give clearance.
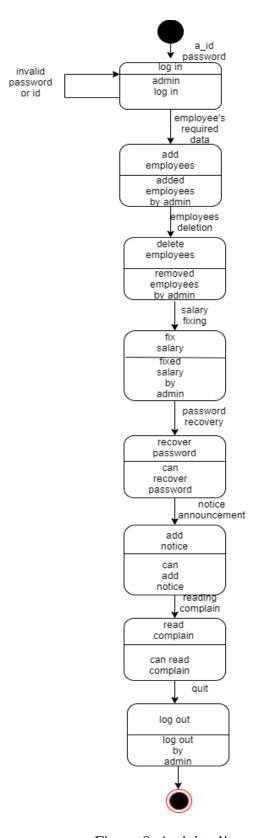
Figure-8: Activity diagram.

3.1.9 Class Diagram

Here we can see the classes of Admin, Doctor, Hospital manager, Accountant, Store manager, Patient, login. There are also attributes and methods of each class [1].
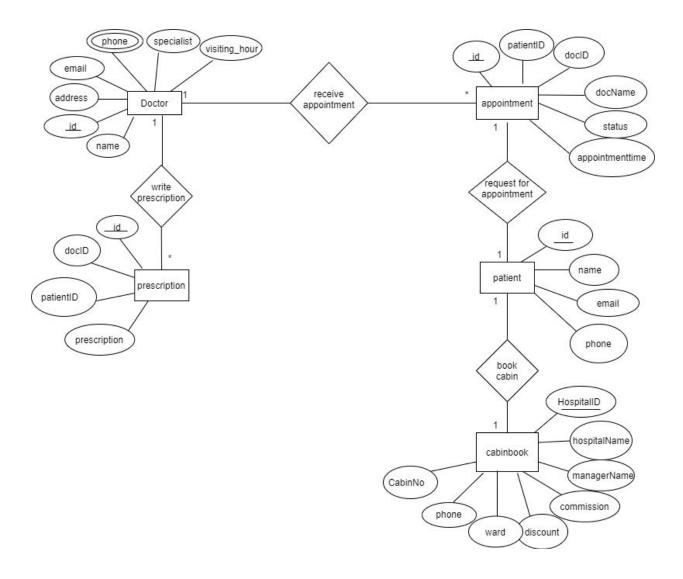
Figure-9: Class diagram.

Chapter-4: Software Project Management Plan

4.1 Document History and Distribution

4.1.1 Revision History

The development of Hospital Management System is a knowledge-based system where user can get all kind of information of particular hospital. Also, users can enjoy premium services. Users can benefit from this service by saving valuable time.

Revision History

Time Duration	Revision date	Descriptions of changes	Authors
3 months	02/05/21	N/A	████████
4 months	06/05/21	Major Fixes	████████

Table 4.1

4.1.2 Distribution

<u>Distribution</u>

Recipient Name	Recipient Organization	Distribution Method
████████	███	Soft Copy

Table 4.2

4.2 Overview

4.2.1 Purpose, Objectives and Project Scope

The essential mark of our endeavor is to give a paper-less hospital up to 90%. It moreover targets giving minimal effort depending robotization of the current structures. The structure moreover gives superior security of data at every level of both customer and worker system. Further advantages like secure inside correspondence and protection moreover gives good and reliable limit and support in different associated workplaces [7].

4.2.2 Project Scope

- To develop **Hospital Management System** where Users will get the information very easily.
- This system makes the administration work easy.
- Several facilities in one system like booking appointments and cabins etc.

4.2.3 Assumptions and Constraints

The assumptions during the projects are-

➤ The development team has not quite enough experience as a whole to complete the project.
➤ Additional resources (people or money) are not available for the project.

The constraints during the project are-
➤ Technical support.
➤ Promotional support.

4.3 Project Deliverables

4.3.1 The list of project deliverables is:

1. Statement of Work (SOW).
2. Software Requirements Specification (SRS).
3. Software Project Management plan (SPMP).
4. Software Design Plan (SDP).

4.3.2 Schedule and Budget Summary

SCHEDULE	
MILESTONE OR MAJOR PROJECT DELIVERABLE	PLANNED COMPLETION DATE(DAY)
SOW	February 7th, 2021

SRS	February 11th, 2021
SPMP	February 22nd, 2021
SDP	March 5th, 2021
Soft testing plan	March 17th, 2021
Presentation & project progress	April 3rd, 2021
Technical documentation	With completed product
Software evaluation report	Along with final submission

Table 4.3

4.4 Evolution of the Software Project Management Plan

The preliminary drafts of the SPMP will be submitted to the project manager and after approval; copies of the same will be distributed to the members of the group on the date as referred to in table 4.3.

4.4.1 Definitions

Definitions

Terms	Description
SOW	Statement of Work
SRS	Software Requirement Specification
SPMP	Software Project Management Plan
SDP	Software Design Plan

🗁 🗐 SQATP	Software Quality Assurance and Testing Plan
1. Impact	1-catastrophic 2-critical 3-marginal 4-negligible

Table 4.4

4.5 Project Organization

Project organization depends on two major Structures.

4.5.1 External Structure

The system user relationship would be responsible for the developer's community and the client contact's formal association. Everyone in the community will be able to communicate with the client, but all communications with the client will be recorded. All client requests for administrations or modifications to setup items will be written down and approved by the venture's Configuration Control Board (CCB), which is made up of all employees. Any procedure will be carried out under the supervision of the project manager and according to the schedule.

4.5.2 Internal Structure

For this project, there are five developers. Everyone has their own areas of responsibility, and everyone contributes equally to the project. Since there are only five people in the party, each part has several responsibilities. All will be held equally accountable for any progress achieved in the project.

If necessary, the members of the team will switch sections over the course of the project, and each part will continue to perform multiple tasks. Both of these techniques will be recorded for future use.

4.6 Managerial Process Plans

4.6.1 Project Start-up Plan

This section describes the materials and resources required to start the project. Because most of this information was pre-defined for the team, this section will not describe the rationale for many of these choices [7].

4.6.2 Estimation Plan

As previously stated in that, the total development time is estimated to be within 4-5 weeks and the total internal cost to be BDT. These figures were obtained by expert judgment by analogy, that is, by comparison with similar projects.

4.6.3 Staffing Plan

Each team member will be available for 8 hours per day as the project purpose. This time includes the team and supervisor meetings, document preparation and inspection, and tool development.

4.6.4 Resource Acquisition Plan

All resources for the project will be available at the start of the project and will not change substantially over time. Below are the planned changes:
- The technical writer will change after completing a documentation.
- The team member's roles will change according to project needs.
- Available work hours will change according to the needs.

4.6.5 Project Staff Training Plan

No additional staff training is needed for this project. Provided document will assist them.

4.7 Work Plan

Work Activities and Schedule Allocation.

4.7.1 Budget Allocation

Budget Allocation		
	HOURS	**COSTS**
Agency Labor	2	1500 BDT
Contract Labor	0	0 BDT
Non-Labor Costs	7	2500 BDT
TOTAL HOURS / IMPLEMENTATION COST	9	4000 BDT

Table 4.5

4.8 Control Plan

4.8.1 Requirements Control Plan

When modifications to the requirements are required after the Software Requirement Specification has been delivered, the changes will be brought to the developers' attention and reviewed. Any changes that are to be made can only be made with the manager's prior approval and only if they are possible and permissible within the constraints of the mission and available resources in terms of knowledge and engineering capacity. A refreshed adaptation of the Software Requirement Specification will be delivered once the advancements to the Software Requirement Specification archive have been made.

4.8.2 Schedule Control Plan

If the work scheduled in table 4.3 gets behind, the developers will be ready to spend extra time on the project in between and after the schedules to make up for the lost time and deliver the final project on time.

4.8.3 Budget Control Plan

By adding up all profit for the year and isolating by 12, the average month-to-month income will be regulated. Following these uses would result in normal month-to-month spending. The investment funds would be the difference between "Financial strategy" and "Current Spending." If the usage exceeds the pay, steps can be taken to reduce the use, depending on the reserve funds goals. The project director keeps track of costs, which are reported and tracked in the Weekly Status Report.

4.8.4 Quality Control Plan

Any significant changes that influence the achievements or the spending should be affirmed by all and archived [3]. All will be answerable for guaranteeing that the task will be finished on schedule and inside financial plan. This will be refined through every day gatherings of the colleagues with the administrator. At each gathering, designer group will introduce the day's advancement and issues. All will decide if they are advancing true to form and whether they are

following the determination archive and the venture the executive plan. Any serious issues looked by the colleagues will promptly be accounted for to all.

4.8.5 Reporting Plan

The updated Software Project Management Plan will be circulated as referenced in the timetable of table 4.3. Each of preliminary versions of all the documents and updates and status reports will be sent and talked about with the guide and upon endorsement the affirmed record will be circled to different individuals from the group. The report on the situation with the task will be shipped off the individuals from the group.

4.8.6 Metrics Collection Plan

As the system based on object oriented so the metrics focus on measurement that can be applied to the class and the design characteristics—localization, encapsulation, information hiding, inheritance, and object abstraction techniques—that make the class unique.

4.9 Risk Management Plan

Risk Management Plan

Risks	Probability	Impact	Rating	RMMM
Project Manager Availability	50%	3	Medium	R-1
Schedule slips	70%	1	High	R-2
System goes hour	60%	3	Medium	R-3

Project canceled	30%	4	Low	R-4
False feature rich	40%	2	Low	R-5
Programmers doesn't have good experience	50%	3	Medium	R-6
Late delivery	50%	3	Medium	R-7
Customer Participation in Beta Testing	30%	4	Low	R-8

Table 4.6

4.10 Closeout Plan

At the end of the project, the following actions will occur:
- The developers team will make a hard copy file of all documents, source code, plans, etc. generated by the team.
- The developer's team will also copy all electronic materials in an electronic format on a CD-ROM.

4.11 Technical process plans

The Software Project Management Plan will specify the development process model, technical models, tools and techniques that will be used to develop the work products, project infrastructure and product acceptance plan.

4.12 Process Model

The XP (extreme Programming) agile process model will be followed during the project implementation.

4.13 Methods, Tools and Techniques

The project, Hospital Management System, adapts the system on Personal Computer using HTML, PHP, Visual Studio 2012 and MySQL for database management system. Additional tools that will be used are: Adobe Dreamweaver, Adobe Photoshop etc.

4.14 Infrastructure Plan

The hardware resources are three Intel Core i7 Personal Computers running Windows 10 or UBUNTU operating system. The project using software resources are like Notepad ++, Adobe Illustrator, Adobe Photoshop, Adobe Flash, XAMPP, Wamp etc.

4.15 Product Acceptance Plan

The project manager will officially approve each project milestone by signing required approval documents. The project manager will conduct an approval test at the end of each process. This could lead to more demands for changes and enhancements. The project manager will conduct approval testing on the final product/application.

4.16 Supporting Process Plans

The arrangements for the supporting processes that are part of the software project will be included in the Software Project Management Plan. Configuration management, testing and evaluation, software documentation, quality assurance, evaluations and audits, issue resolution, and subcontractor management are also included in these plans.

4.17 Configuration Management Plan

Every deliverable from a project should be considered a configuration entity. The configuration object and its file will be called after the document, such as SOW or SRS, and the version number will be included. The abbreviation would be preceded by 0.1, 0.2 in all early versions submitted to the project manager for approval, for example. After the project manager accepts the basic SPMP, this baseline document will be circulated to team members as version 1.0.

Informal reports from the project manager will be numbered 1.1, 1.2, etc., and the next full distribution to the committee will be version 2.0, etc.

4.18 Verification and Validation Plan

This project's Software Project Management Strategy would include the software project's verification and validation plan, as well as resources, procedures, and responsibilities for the verification and validation work activities. The verification and validation plan will be kept separate from the rest of the document and will be updated as required.

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4.19 Documentation Plan

The IEEE standards would be followed for all documentation purposes. All the documents would be discussed and reviewed with project manager before their baseline versions are issued and distributed to the members of the committee on the due dates.

4.20 Quality Assurance Plan

The quality of our project will be maintained and checked by the project manager. He will assure that this project is maintaining the quality [3].

4.21 Reviews and Audits Plan

Review and Audits would be addressed as a part of the Software Quality Assurance and Verification & Validation Plan that would be developed following recommended departmental standards.

4.22 Problem Resolution Plan

All problems would be resolved informally the developer and the project manager. That is, there is no specific plan. But The Software Project Management Plan will be updated accordingly should the need for such a plan arises.

4.23 Subcontractor Management Plans

The project does not have any plan for managing subcontractors that may contribute work products to the software project.

4.24 Process Improvement Plan

After the development, the project will be regularly checked by the project manager and he will suggest the developers if any kind of improvement is needed.

Chapter-5: Conclusion & References

5.1 Conclusion

This Software Requirement Specification Document was developed based on the basic medical service situation and the previous experience of experienced doctors and other medical staff. As

a result, any unanticipated occurrence or situation may throw the values and time frame in this document off. Aside from that, the project will be reported and executed in a timely manner. In the event of a pause, additional work hours and services will be assigned with the approval of the authorities.

5.2 References

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