American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

Hospital Management System

A Software Requirement Engineering Project Submitted
By

Semester: Spring_22_23		**Section:**	**Group Number:**
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The project will be Evaluated for the following Course Outcomes

Evaluation Criteria	Total Marks (50)	
Introduction, Format, Submission, Defense	[10 Marks]	
System Overall Description & Functional Requirements	[10 Marks]	
System Quality Attributes and Project Requirements	[10 Marks]	
UML and E-R Diagram with Data Dictionary	[10 Marks]	
UI/UX Prototyping	[10 Marks]	

Software Requirements Specification

for

Hospital Management System

Version 1.0 approved

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Revision History

Name	Date	Reason for Changes	Version

1. Introduction

1.1 Purpose

The SRS will fulfill the following functions if it is written well. The contract between the client and the software developer is called the SRS. The "scoop-and-run" logic is a foundational component of the web-based medical management model. Its goal is to expedite patient transportation to a medical facility while requiring less prehospital care. The prehospital medical benefit typically works more closely with the police and local fire departments in the countries that adopt this model than it does with the health administrations and emergency medical services. Almost all patients in this model are transferred to designated crisis communities rather than emergency rooms. Helping with other Documentation-A number of other crucial documents, such as the Software Design Specification, are justified by the SRS.

1.1.1 Accuracy: We will make sure the software and data entered into the database are accurate.

1.1.2 Clarity: This SRS will specify in detail what the user desires from the software.

1.1.3 Completeness: The software requirement specification contains all the requirements stated in the business requirements documentation that the user specified.

1.1.4 Consistency: The entire document is logical from start to finish. It helps to the reader's understanding of the requirements.

1.1.5 Prioritizations of Requirements: The requirements will be fully satisfied in accordance with the priority and preference order.

1.1.6 Verifiability: At the end of the project, the user/client will be able verify that all agreed-upon deliverables have been generated and comply with the stated project management requirements.

1.1.7 Modifiability: When the user and development team see suitable, the SRS can be changed.

1.1.8 Traceability: Each requirement listed in the SRS is specifically linked to a source, like a use case, interaction document, etc.

1.2 Document Conventions

Time New Roman was used for the text style when organizing the archive in Microsoft Word 2010. This archive was typed using proper text size of 12pt and 1.5 line spacing. The report's headings are based on the intense property. With the exception of the cover page, all pages are numbered; the numbers are visible in the lower right corner of each page. Every image and data table has a number and is referenced in the main text. The format used by Alistair Cockburn is a use case scenario. IEEE specifications. The format is the structure used to group an archive's and its stream's presence.

1.3 Intended Audience and Reading Suggestions

The goal of this archive is to show and investigate the data, so its target audience will be the client and explicit employees like the manager and receptionist, specialists and system operators of the St. Joseph Hospital, and project group, manager. Regarding the project's requirements and the chosen solutions, the SRS document can be used in any case. The report would conclude by offering a logical thought about the framework that is emerging.

1.4 References

1. https://www.adroitinfosystems.com/products/ehospital-systems#:~:text=A%20Hospital%20Management%20System%20is,intelligence%2C%20and%20revenue%20cycle%20management.
2. https://codecanyon.net/item/smart-hospital-hospital-management-system/23205038
3. https://www.smartsoftware.com.bd/hospital-management

2. Overall Description :

The main function of a hospital management system, also known as HMS software, is to support the proper and simple management of all hospital operations. Clinical software is also a part of the hospital management system. Additionally, it helps to maintain record-keeping oversight of hospital operations. The hospital management system is a comprehensive piece of software that controls various clinic workflow processes. It supervises the effective administration of the healthcare system as well as administrative, medical, legal, and financial control. That is necessary for the efficient operation of the medical facility.

2.1 Product Perspective

This Hospital Management System is an independent system that handles hospital operations like bed assignment, operations scheduling, personnel management, and administrative challenges. There are many stakeholders involved in the hospital system.

2.2 Product Functions

There are three product functions.

Doctor Module:

- Add patients report.
- Delete patients report.
- Display reports.
- Give prescriptions.
- Search reports of patient.

Patients Module:

The different functionalities of the module are listed below:

- Search reports
- Search his/her records.

Receptionist Module:

- Add patient's data.
- Delete patient's data.
- Display records.
- Search the record of patients.
- Refer to different doctors.

2.3 Design and Implementation Constraints

- Be prepared for challenges and constraints in relation to system updates and improvements as a result of the coordination that will be necessary in order to cease clinical systems that require continuous operation.
- A significant number of transactions must be able to be processed at any given moment.
- As a result of the possibility that many health professionals would need to enter new information or amend existing data, a high rate of concurrent electronic transactions must be supported.

- Always record all transactions in order to be aware of what transpired, allowing you to replay occurrences, comprehend bugs, and preserve the integrity of data.
- Maintain the integrity of information at all times, including when conducting concurrent consultations.
- Always make information accessible, especially when concurrent consultations are taking place.
- Assure quick data display, regardless of the volume of information being searched for across numerous databases.

2.4 User Documentation

As a part of the system itself, users have access to user documentation that gives an overview of the system. The entire product description as well as all of the meticulously outlined installation procedures for the software will be provided. Users will be able to use the system without any problems. The user manual contains a list of our email addresses in case you need to get in touch with us. Cross-referenced indexes are frequently used to list tasks in an alphabetical or logical order, making it simpler for users to find the precise information they require.

3. System Requirements

3.1 Functional Requirements (System Features)

1. Appointment/Reception

- This function recovers patient information, adds a record to the patient file, and generates a patient register number.
- Patient hands in their paperwork to the front desk staff, who inputs it into the computer before referring the patient to the doctor.
- If the appointment is successful, the information of the patient will be displayed.
- If the patient information has been inserted wrong, the random verification code will be generated and sent to the patient email address by the system generator.

Priority Level: High
Precondition: Should login and be a register member of the system.

2. Issue OPD

- This function gets details of a patient and add a record to the patient file and generates a patient register.
- The user selects to generate a number at OPD Module. The system prompts you to select the clinic type
- If OPD generates the next available number to the available doctor and displays the number and user confirms it and gets printed.
- Patient channeling records should be updated with patient details.

Priority Level: Medium
Precondition: Patient must register to the system.

3. Bill calculation

- This function calculates total charge for the patient.
- Find the patient by entering their register number, and the patient's information, lab test results, X-ray results, and total fee are displayed. Choose to print the receipt, and then hand it to the patient.
- The payment details should be updated in the payments file.

Priority Level: High
Precondition: The patient must register to the system.

4. Employee service

- The employee can have different types and in case of their type, they have work. They come to hospital and they'll continue their work.
- Employee attendance will count.

Priority Level: Medium
Precondition: Employee should register to the system

5. Doctor consulting

- This function mange's counsellors charging details.
- User selects cancelling doctor form in employee module system prompts doctor's ID. user enters id system display councilor doctor details. user selects get visit hours and generated details. System calculates total counselor change paired and display
- Doctor can check the patient details.

Priority Level: Medium

Precondition: User sound login to the system

3.2 Non-Functional/Quality Requirements

1.Safety Requirements

Data that has been overwritten. any malware or virus. The most widely used and potentially harmful type of malware is viruses. The computer's data may be deleted, or the device may be taken over and used to send spam, host and distribute illegal content, or attack other systems. As a result, if there is significant damage to the software system, it is best to use the recovery technique that involves restoring a copy of the entire system. The ability to restore any information at any time is provided by the archive of all data.

Priority Level: Medium
Precondition: N/A

2. Security Requirements

Hospitals employ a variety of security measures, such as the use of CCTV cameras, duress alarms for staff members, and electronic access control systems for doorways, to keep staff, patients, and visitors safe. Security personnel are employed by some hospitals. Additionally, each administrative user and data entry operator has a different login so the system can identify who is currently logged in. Nobody other than the system administrator is permitted to alter records or sensitive data.

Priority Level: Medium
Precondition: N/A

3. Software Quality Attributes

- Adaptability: The software system to independently monitor its behavior and eventually modify the same according to changes in the operational environment or in the system itself.
- Availability: The system shall be available all the time.
- Correctness: A bug free software which fulfill the correct need/requirements of the client.
- Flexibility: The software is easy to make changes at any time.
- Maintainability: The ability to maintain, modify information and update fix problems of the system.
- Usability: software can be used again and again without distortion.

- Accessibility: Administrator and many other users can access the system but the access level is controlled for each user according to their work scope.
- Reusability: Capable of being used again or repeatedly.

4. Business Rules

- Implementation of recently government-mandated quality standards for healthcare provider requires them to modify or change their business processes, practices, and approach to healthcare delivery.
- The software warranty should be at least two years.
- For further service additional payment should be given.
- If any error occurs by authority the warranty will not applicable to it.
- No refund for the software.

3.3 Project Requirements

- **Tools:** The system developer needs selenium tools in perform testing activities in week 6

1. Hardware Requirements

Desktop/ laptop:

The purpose of this pc is to give information when Patients ask for information about doctors, their timetable, medicine available lab tests, etc. To perform such an Action, it needs a very efficient computer otherwise that reason patients have to wait for a long time to get what they ask for. Also, maintain the system process of the hospital. This process needs to

- Pc/laptop
- RAM-8GB
- Core i5 intel processor
- Keyboard
- Mouse
- 512 GB HDD/512GB SSD

2.Operating system:

For our system, we can choose the window operating system. Because it is easy to use for any system. Anyone can easily use this operating system.

- Windows -7/10/11

3.Display Unit (LED/LCD Monitor/TV:

This unit is for displaying the serial number of the patients who come to meet with the doctor for their problems. It will avoid chaos. And also display Hospital welcome screen, video, information etc.

- Monitor- LED/LCD

4. Wi-Fi router and printer:

A Wi-Fi router is used for internetwork operations inside of a hospital and simply data transmission from pcs to sever. A printer is needed because for the billing system or sometimes patient or doctors needs to photocopy their papers. If a printing machine Is available in the hospital, then many problems and time can be saved.

5. Software Interfaces

For Developer's Developing:

- Language-Java language.
- NetBeans IDE-7.0.1- Java is fast, secure, and reliable. From laptops to datacenters, game consoles to scientific supercomputers, and cell phones to the Internet.
- JDK-8 – JDK for Java development.
- MySQL server 2014 - Database connectivity and management
- Adobe Photoshop cs4 - Logo and other design such as User interfaces

For Client:

- OS-Windows 7/10/11- Very user-friendly and common OS. people can use it easily
- JRE for window- JAVA Runtime Environment for running Java Application and System
- MySQL server 2014- Database connectivity

4. Design and Interface Requirements

4.1 UML Diagrams

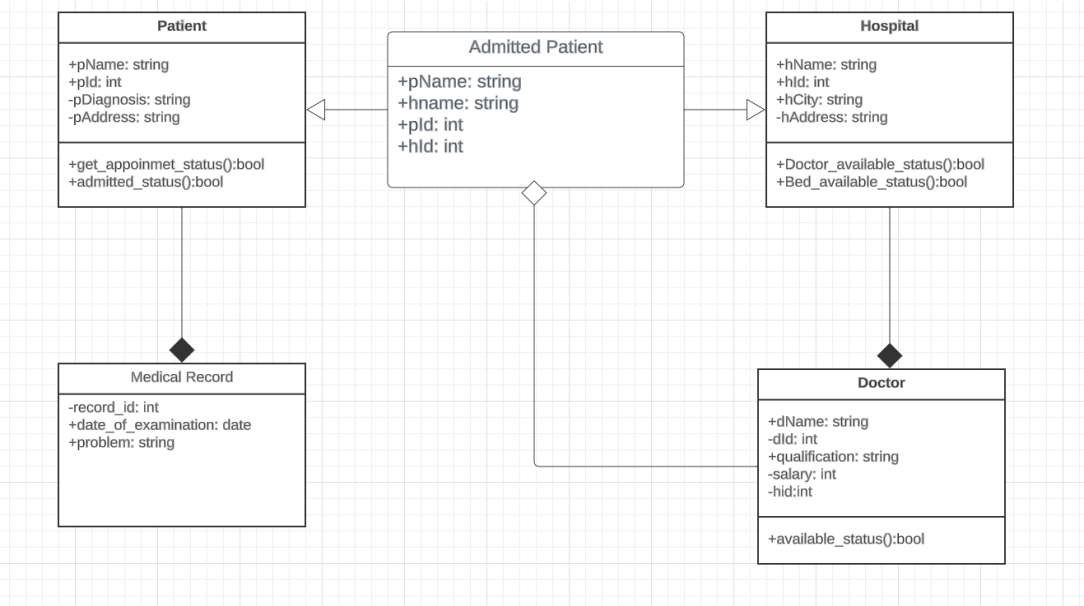


Fig : Class Diagram.

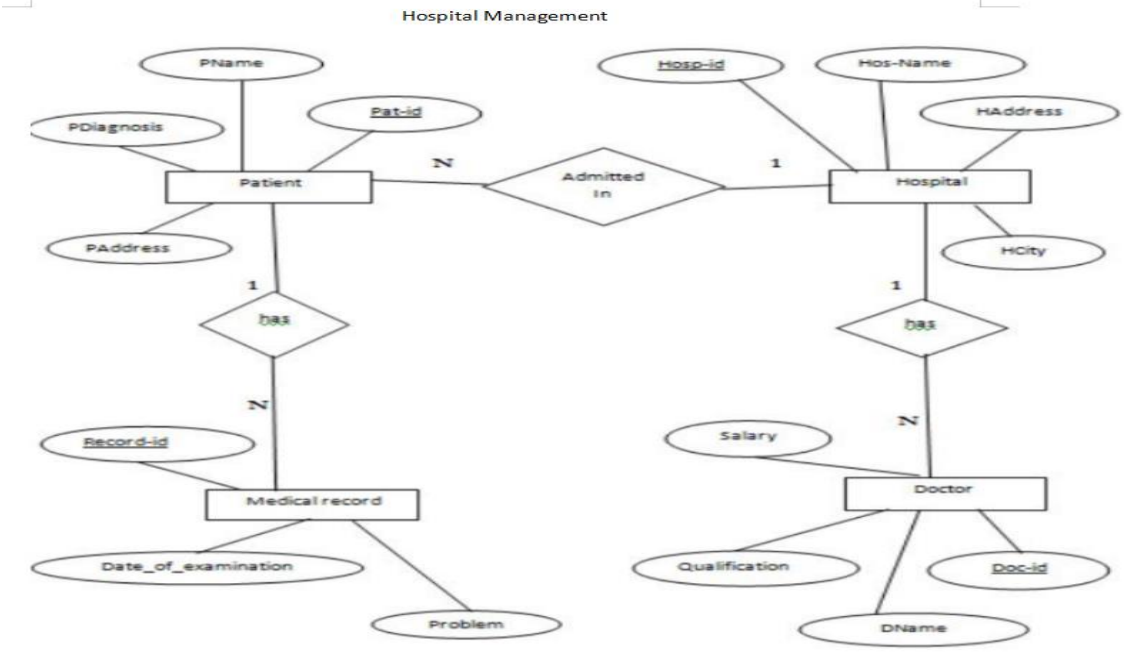


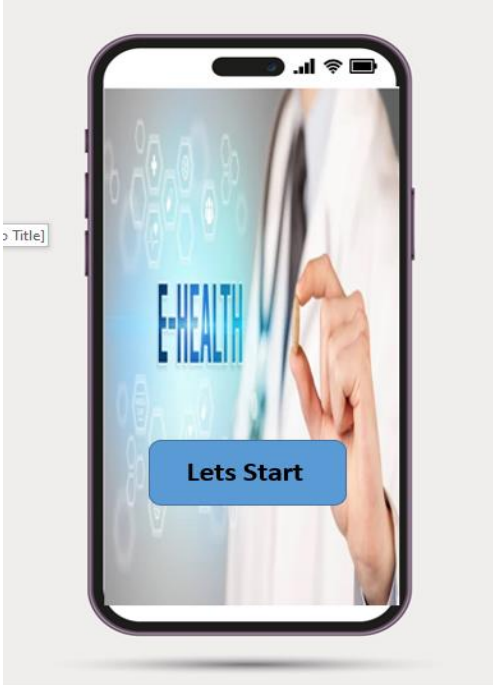
Fig : E-R Diagram.

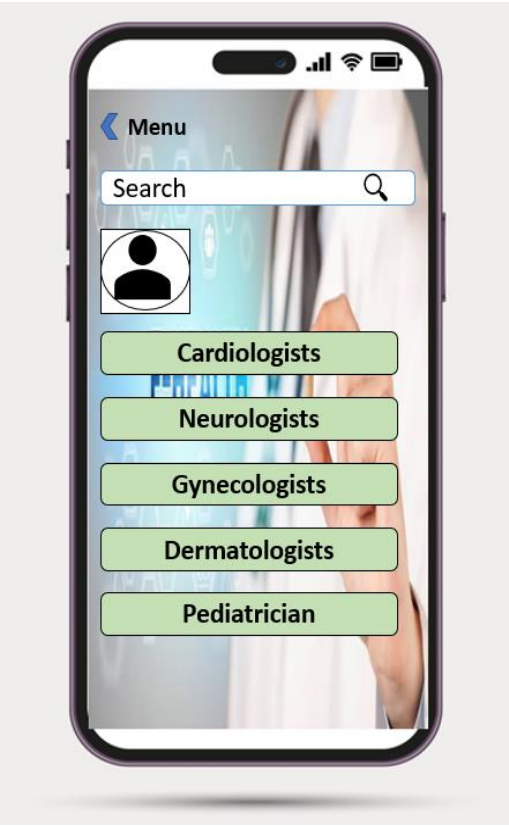
Fig : Use case Diagram.

4.2 Data Dictionary

Entity	Attribute	Type/Size	Validation	Key
Patient	pName	Text(10)	Required	
Patient	pId	Number(5)	10000-99999	Primary
Patient	pDiagnosis	Text(50)	Optional	
Patient	Record_id	Number(5)	10000-99999	
Patient	date_of_examination	Date(8)	Valid Date	
Patient	problem	Text(50)	Required	
Patient	pAddress	Text(30)	Required	
Hospital	hName	Text(10)	Required	
Hospital	hId	Number(5)	10000-99999	Primary
Hospital	hAddress	Text(30)	Required	
Hospital	hCity	Text(10	Required	
Doctor	dName	Text(10	Required	
Doctor	dId	Number(5)	10000-99999	
Doctor	qualification	Text(30)	Required	
Doctor	salary	Number(6)	000000-999999	

4.3 UI/UX Design Specification



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