HOSPITAL MANAGEMENT SYSTEM

LAB REPORT

Submitted by

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Under the Guidance of

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In partial satisfaction of the requirements for the degree of

BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING

with specialization in Cloud Computing

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR - 603203

MAY 2023

COLLEGE OF ENGINEERING & TECHNOLOGY
SRM INSTITUTE OF SCIENCE & TECHNOLOGY
S.R.M. NAGAR, KATTANKULATHUE – 603 203
Chengalpattu District

BONAFIDE CERTIFICATE

Register Now. **RA2111028010142** Certified to be the bonafide work done by **PRASANTH SAI** of II Year/IV Sem B.Tech Degree Course in the **Practical Software, Software Engineering, and Project Management 18CSC206J** in SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Kattankulathur during the academic year 2022 – 2023.

10/05/23

Signature

Dr. K Nimala

Associate Professor

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Dr. Annapurani Panaiyappan K

Professor and Head

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SRM Institute of Science and Technology

Date:

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF ABBREVIATIONS

PHP	Hypertext Preprocessor
SQL	Structured Query Language
IDE	Integrated Development Environment
WBS	Work Breakdown Structure
SWOT	Strengths, Weakness, Opportunities, Threats
API	Application Programming Interface
UML	Unified Modeling Language
ERD	Entity Relationship Diagram
DFD	Data Flow Diagram
UI	User Interface
UX	User Experience
RMMM	Risk Mitigation Monitoring Management
RAID	Risk, Assumptions, Opportunities, Threats
PHP	Hypertext Preprocessor
SQL	Structured Query Language
IDE	Integrated Development Environment
WBS	Work Breakdown Structure
SWOT	Strengths, Weakness, Opportunities, Threats
API	Application Programming Interface
UML	Unified Modeling Language
ERD	Entity Relationship Diagram
DFD	Data Flow Diagram
UI	User Interface
UX	User Experience
RMMM	Risk Mitigation Monitoring Management
RAID	Risk, Assumptions, Opportunities, Threats

ABSTRACT

Our project Hospital Management system includes the registration of patients, storing their details in the system, and also booking their appointments with doctors. Our software can give a unique id for every patient and automatically stores the details of every patient and the staff. Users can search for a doctor's availability and patient details using the id. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data to the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and make the data processing very fast.

It is having mainly two modules. One is at Administration Level and the other is of users I.e., patients and doctors. The Application maintains authentication to access the application. Administrator task includes managing doctors' information, and patient's information. To achieve this aim a database was designed one for the patient and the other for the doctors which the admin can access. The complaints which are given by users will be referred by authorities. The Patient modules include checking appointments, and prescriptions. Users can also pay doctor's Fees online.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	1
Title of Experiment	To identify the Software Project, Create Business Case, Arrive at a Problem Statement
Name of the candidate	PRASANTH SAI
Team Members	Sumith Sai, Prasanth Sai, Manjunatha Reddy, Pintu Harsha
Register Number	RA2111028010142
Date of Experiment	03/02/2023

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To Identify the software project, Arrive at a problem statement , create the project description and Business case Template.

Team Members:

S. No	Register No	Name	Role
1	RA2111028010164	SUMITH SAI	**Lead/Rep**
2	RA2111028010140	MANJUNATHA REDDY	**Member**
3	RA2111028010142	PRASANTH SAI	**Member**
4	RA2111028010152	CHALLA PINTU	**Member**

Project Title:

HOSPITAL MANAGEMENT SYSTEM

Project Statement: Our project includes registration of patients, storing their details including medical details into system and computerized billing in the pharmacy and Labs.

Project Description:

The Hospital Management System is a comprehensive software solution designed to manage and organize the various operations of a hospital. The system is built to automate and streamline tasks such as appointment scheduling , patient registration ,billing and medical records management .

The ultimate goal of a hospital management system is to improve the efficiency and effectiveness of hospital operations, while also providing better patient care and experience. The hospital management system also includes a range of security measures to protect patient data and ensure compliance with relevant questions

This includes the ability to restrict access to a certain areas of system based on user roles and permissions , as well as the ability to restrict access to certain areas of the system base on the user roles and permissions, as well as the ability to audit the user actions and track changes to patient data.

Overall ,a hospital management system is a powerful tool that can help hospitals to improve their operations and provide better patient care. By automating and streamlining various tasks , the system can help hospitals to become more efficient and effective ,while also providing valuable insights into their operations.

ONE PAGE BUSINESS CASE TEMPLATE

DATE	03/02/2022
SUBMITTED BY	SUMITH SAI
TITLE / ROLE	TEAM LEAD

THE PROJECT:

What is the purpose of online appointment?

Online systems make patient management easier and more efficient. Some online scheduling systems for appointments also have management of patient health records as part of the package. The organization can create a single point from which to save, update, manage and analyze patient information.

In bullet points, describe the problem this project aims to solve or the opportunity it aims to develop.

THE HISTORY:

In bullet points, describe the current situation.

Without the online systems Hospitals as well as patients have to face the following problems:--

1. Overcrowding.
2. Mishandling of important medical informations.
3. Waiting time for patients are very long.
4. Not getting the doctor of their choice.
5. Getting less time to consult with the doctor.
6. Coming to the hospital multiple times.

LIMITATIONS

List what could prevent the success of the project, such as the need for expensive equipment, bad weather, lack of special training, etc.

Networks and computers have different maintenance problems, lack of no standards for Data entry a data retrieval, difficulties in training users technically to use HMS.cost constraints, technical limitations standardization limits, attitudinal constraints-behavior of individuals, and organizational constraints.

APPROACH

List what is needed to complete the project.

Critical path method: Similar to the Waterfall methodology, the critical path method is a sequential approach that allows project managers to prioritize resources, putting more emphasis and investment into the most important work and rescheduling lower-priority tasks that may be slowing down the team.

BENEFITS

In bullet points, list the benefits that this project will bring to the organization.

1. Maintain Digital Records
2. Better Department Coordination
3. Revenue Cycle Management
4. Great Customer Experience
5. Track Process Without Errors
6. Effective and Time-Saving
7. Patients Self Involvement
8. Create Better Marketing Strategies

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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	02
.Title of Experiment	Identification of Process Methodology and Stakeholder Description
Name of the candidate	PRASANTH SAI
Team Members	SUMITH SAI, PRASANTH SAI, MANJUNATHA REDDY, PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	10-02-2023

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

HOSPITAL MANAGEMENT SYSTEM

Aim:

To identify the appropriate Process Model for the project and prepare stakeholder and user description.

Team Members:

Sl No	Register No	Name	Role
1	RA2111028010164	SUMITH SAI	LEAD
2	RA2111028010140	MANJUNATHA REDDY	Member
3	RA2111028010142	PRASANTH SAI	Member
4	RA2111028010152	CHALLA PINTU	Member

Project Title: Hospital Management System

Selection of Methodology

The Agile model is highly suitable to the Hospital Management System (HMS) process due to its focus on collaboration, flexible planning, and rapid delivery. Here are some specific ways that the Agile model can be applied to an HMS project:

1. Collaboration with stakeholders: Agile methodology encourages close collaboration between the development team and stakeholders, including physicians, nurses, administrators, patients, and others. This collaboration allows the team to gather requirements and make necessary adjustments throughout the project, ensuring that the final product meets the needs of all stakeholders.
2. Incremental delivery: In the Agile model, the development process is divided into short sprints, during which the team works on specific components of the HMS. This approach allows for the delivery of functional components in a timely manner and enables the team to respond quickly to changing requirements and make adjustments as needed.
3. Flexible planning: Agile teams work in an adaptive and flexible way, continuously adjusting their plans as they learn more about the project and as the needs of stakeholders evolve. This allows the team to respond to changing priorities and requirements, and to incorporate new information and feedback throughout the project.
4. Continuous improvement: Agile methodology emphasizes continuous improvement, which is essential in a complex and dynamic environment like a hospital. The iterative

process of sprints and feedback allows the team to identify areas for improvement, make adjustments, and continuously improve the quality of the HMS.

In conclusion, the Agile model is highly applicable to the HMS process because it supports collaboration with stakeholders, incremental delivery, flexible planning, and continuous improvement. These elements are critical to the success of an HMS project and can help ensure that the final product meets the needs of the hospital and its patients.

Information regarding stakeholders of the project

Stakeholder Name	Activity/ Area/Phase	Interest	Influence	Priority
Patients	User of the system	Access to medical records, efficient treatment	High	1
Hospital Management	Overall project management	Effective and efficient management of hospital operations, improved patient outcomes, and reducing costs	High	1
IT Management	System design and implementation	Effective and efficient development and deployment of HMS, data security	High	1
Regulatory bodies	Compliance and Certification	Compliance with regulations and standards, protection of patient data and privacy	Medium	2
Insurance companies	Partner in payment processing	Access to medical records claims processing	Low	5
Vendors and Suppliers	Provider of equipment, software ,etc	Business opportunities and revenue for sales and support	Low	4
Pharmaceutical Executives	Potential partners in drug development and distribution	Efficient and effective management of pharmaceuticals within the hospital, compliance with regulations related to the use of their products	Medium	3

Result:
Thus, the Project Methodology was identified and the stakeholders were described.

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SRM IST, Kattankulathur – 603203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	3
Title of Experiment	Hospital Management System
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	17-02-2023

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To identify the system, functional and non-functional requirements for the project.

Team Members:

Sl No	Register No	Name	Role
1	RA2111028010164	SUMITH SAI	LEAD
2	RA2111028010140	MANJUNATHA REDDY	Member
3	RA2111028010142	PRASANTH SAI	Member
4	RA2111028010152	CHALLA PINTU	Member

System Requirements:

Hardware Requirements:

Processor	i5 processor (dual core processor with a clock speed of at least 2.4GHz)
RAM	4GB
Disk Space	1TB

Software Requirements:

Operating System	Windows 7 or above/Mac OS X/Linux
Database server	MySQL
Web server	Microsoft IIS 10.00 or higher/Apache HTTP 2.4 or higher
Application Server	Apache Tomcat 9 or higher/JBoss EAP 7.2 or higher
Security Software	Microsoft Active Directory

Functional Requirements

R1: Registration

Description : The user has to sign in to his account, if he/she has already created an account. The new users will have to sign up.

R1.1: Sign in

Input: User Id and password

Output: Accessibility to HMS

R1.2: Sign up

Input: User name, age, gender, phone number, email address

Output: User Id and password

R2: Booking an appointment

Description: Patients who want to make an appointment at the hospital must describe their health problem in detail, and a specialised doctor will be assigned to them based on their medical condition/disease.

R2.1: Diagnosis of disease

Input: Patient's symptoms in details

Output: Specialized doctor suggested for the disease.

R2.2: Booking a slot

Input: Specialized doctors searched on the basis of their time of availability

Output: Appointment Id generated along with time slot

R2.3: Online payment

Description: Patients can pay online or offline, depending on their preferences. They must choose a specific payment gateway to pay online in the HMS, and a payment receipt will be provided upon successful payment.

Input: Patient asked to choose their preferred payment gateway and enter details.

Output: Payment receipt generated

R3: Viewing health records

Description - Patients once logged in with their respective patient ids will be able to see health records like - Hospitalization, Test Reports, Doctor Consultations etc.

R3.1: Hospitalization

Input: Patients can choose to see hospitalization details, test reports, prescription etc.

Output: The respective information showed to the patient.

R3.2: Test Reports

Input: Patients can upload test reports for ease of consultation.

Output: Respective doctor mapped with the patient Id gets the test report.

R3.3: Doctor Consultation

Input: Patients can upload prescriptions obtained from consultation with previous doctor

Output: Respective doctor mapped with the patient Id gets the previous prescriptions.

R4: Ordering online medicines

Description: Patients who want to order medicines from hospital can upload (Required) or select their prescription from health records and on verification of that prescription medicines will be delivery to the patient

R4.1: Verification of prescription

Input: Patient asked to upload new prescription/select their prescription from health record

Output: Verification of prescription

R4.2: Ordering medicines

Input: Medicines required

Output: Order from patient taken and based on medicine availability order id generated.

R4.3: Online payment (Medicines)

Description - Patients have the choice to pay online/offline according to their convenience. For paying online in the HMS, they have to choose a specific payment gateway and on successful payment, payment receipt will be generated.

Input: Patient asked to choose their preferred payment gateway and enter details.

Output: Payment receipt generated

R5: Emergency admission

Description - Admission of a patient in case of medical emergency and identification of the medical condition and specialized doctor along with ICU/CCU allocated according to availability.

R5.1: Registration of patient

Input: User needs to sign in/sign up depending on whether he/she is new/existing user

Output: Patient ID generated/patient details fetched from existing database

R5.2: Identification of Medical Emergency

Input: The medical condition identified according to the symptoms.

Output: Patient allocated to available ICU/CCU along with specialized doctor according to availability.

R6: Discharge and settlement of bills:

Description - Deals with discharge of patients and Mediclaim related issues.

R6.1: Settlement of bills

Input: Patient ID to fetch all expenses incurred starting from date of admission till current date .

Output: Bill generated and handed over to patient for payment

R6.2: Discharge

Input: Patient Id to check whether bill has been settled

Output: Patient discharged /checks-out with a discharge certificate

R7: Viewing patient's prescription

Description – Doctors can view prescription of only those patients who are currently undergoing treatment under him/her for ease of diagnosis of patient's disease.

R7.1: Sign in/Sign up

Input: Doctor logs in with his credentials if he/she is an existing user or signs up with needed information.

Output: Doctor can see list of only those patients currently undergoing treatment under him/her.

R7.2: Search and see patient's prescription from list

Input: Doctor searches patient from list using patient ID

Output: Doctor views patient's prescription

R8: Viewing patient's test reports

Description – Doctors can view test reports of only those patients who are currently undergoing treatment under him/her for ease of diagnosis of patient's disease.

R8.1: Sign in/Sign up

Input: Doctor logs in with his credentials if he/she is an existing user or signs up with needed information .

Output: Doctor can see list of only those patients currently undergoing treatment under him/her.

R8.2: Search and see patient's test reports from list

Input: Doctor searches patient from list using patient ID

Output: Doctor views patient's test reports

Non-Functional Requirements:

- **Correctness Requirement**

  The system should accurately provide real time information taking into consideration various issues.

- **Efficiency Requirement**

  The software is highly efficient and various tasks in its various modules and sub-modules can be performed simultaneously. It can work with many users logged in at the same time and is an efficient solution to the complete HMS.

- **Usability Requirement**

  The software has a simple but efficient user interface, which can be used by all types of users, both technically sound as well as people not having so much knowledge about technology.

- **Reliability Requirement**

  The system is extremely reliable as there are proper measures to protect the private data of the users like prescription and other health records.

- **Maintainability Requirement**

  Back Up: The system shall provide the capability to back-up the data.

  Data Errors: The system shall keep a log of all the errors.
- **Availability requirement**

  The software will be available online 24/7 and would be able to do its functions at any time of the day.
- **Performance Requirement**

  The database can accommodate a high number of users without any fault. As the latest technologies have been used, the system would be very responsive and the response would be extremely fast. With high-speed internet connectivity the various operations should not take much time.

Result:

Thus, the requirements were identified and accordingly described.

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School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	4
Title of Experiment	Prepare Project Plan based on scope, Calculate Project effort based on resources and Job roles and responsibilities.
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	24-02-23

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To Prepare Project Plan based on scope, Calculate Project effort based on resources, Find Job roles and responsibilities

Team Members:

Sl No	Register No	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

1. Project Management Plan

Describe the key issues driving the project. **[Min 3 Focus Areas]**

Focus Area	Details
Integration Management	• Develop a governance framework with defined roles and responsibilities of stakeholders • Develop a change management plan with a change control process and issue management processes • Develop a plan for project closure with lessons learned and transition of the system to maintenance and support
Scope Management	• Define the project scope, including features and functionalities of the Hospital Management System • Establish a scope change control process to manage changes and obtain stakeholder approval
Schedule Management	• Develop a project schedule with key milestones and deadlines for each phase of the project • Monitor and control the project schedule, taking corrective action as needed to keep the project on track
Cost Management	• Develop a project budget, including software development, hardware, and other expenses

	• Monitor and control project costs, taking corrective action as needed to keep the project within budget
Quality Management	• Develop a plan for quality assurance, including testing and validation of the Hospital Management System • Establish quality metrics to measure system performance and take corrective action as needed to improve quality
Resource Management	• Identify the resources needed for the project, including developers, testers, and project managers • Allocate resources to the project and monitor resource utilization to ensure the project has the resources it needs to succeed
Stakeholder	• Identify the stakeholders for the project, including hospital administrators, doctors, nurses, and patients • Develop a stakeholder management plan, including communication protocols and strategies for managing stakeholder expectations
Communication Management	• Develop a communication plan for the project, including the frequency and format of project updates and the stakeholders who will receive them • Monitor project communication and take corrective action as needed to ensure all stakeholders are informed and engaged
Risk Management	• Identify potential risks to the project and develop a risk management plan to mitigate those risks • Monitor and control project risks and take corrective action as needed to minimize their impact
Procurement Management	• Develop a procurement plan for the project, including the procurement of hardware, software, and selection of vendors and suppliers • Monitor and control project procurement, taking corrective action as needed to ensure the project has the resources it needs to succeed

2. Estimation

2.1. Effort and Cost Estimation

Activity Description	Sub-Task	Sub-Task Description	Effort (in hours)	Cost in INR
Requirements Gathering	E1R1A1T1	Meet with hospital administrators to determine overall project goals and requirements	8	4000
	E1R1A1T2	Meet with doctors and nurses to determine their specific requirements for the Hospital Management System	16	8000
	E1R1A1T3	Meet with patients to gather feedback on user-experience and ease-of-use requirements	8	4000
Design	E1R2A1T1	Develop a high-level design for the Hospital Management System, including system architecture and software components	80	40000
	E1R2A1T2	Develop detailed designs for each component of the Hospital Management System, including user interfaces, database schema, and application logic	160	80000
Development	E1R3A1T1	Develop software components for the Hospital Management System, including coding, testing, and debugging	800	400000
Testing	E1R4A1T1	Develop test cases for the Hospital Management System, including functional, performance, and security testing	160	80000
	E1R4A1T2	Execute tests and document results	80	40000

Deployment	E1R5A1T1	Develop plan for deploying the Hospital Management System, including hardware and software requirements and installation procedures	40	20000
	E1R5A1T2	Install and configure the Hospital Management System, including data migration and system configuration	120	60000
Project Management	E1R6A1T1	Develop and manage project plan, including budgeting, scheduling, and risk management	160	80000
Documentation	E1R7A1T1	Develop user manuals and help files for the Hospital Management System	40	20000
	E1R7A1T2	Develop technical manuals and system documentation	80	40000

Effort (hr)	Cost (INR)
1	500

2.2. Infrastructure/Resource Cost [CapEx]

Infrastructure Requirement	Qty	Cost per qty	Cost per item
Server hardware	2	100000	200000
Network equipment	1	50000	50000
Network equipment	1	150000	150000
Backup system hardware	1	75000	75000
Security system hardware	1	100000	100000
Total			575000

2.3 Maintenance and Support Cost [OpEx]

Category	Details	Qty	Cost per qty per annum (INR)	Cost per item (INR)
People	IT Support Staff	3	35,00,000	1,05,00,000
	System Administrator	1	42,00,000	42,00,000
	Data Base Administrator	1	49,00,000	49,00,000
	Total		1,26,00,000	1,96,00,000
License	Hospital Management Software Commercial License	1	35,00,000	35,00,000

	Antivirus Software Commercial License	50	6,000	3,00,000
	Operating System Commercial License	50	7,500	37,50,000
	Database Management System Commercial License	1	5,00,000	5,00,000
	Total		40,13,500	80,50,000
Infrastructures	Server	5	5,00,000	25,00,000
	Database server	2	10,00,000	20,00,000
	Backup Server	1	5,00,000	5,00,000
	Total		20,00,000	50,00,000

3. Project Team Formation

3.1. Identification Team members

Name	Role	Responsibilities
Sumith Sai	Key Business User (Product Owner)	Provide clear business and user requirements
Sumith Sai	Project Manager	Manage the project
Prashanth Sai	Business Analyst	Discuss and Document Requirements
Manjunatha Reddy	Technical Lead	Design the end-to-end architecture
Pintu Harsha	UX Designer	Design the user experience
Sumith Sai	Frontend Developer	Develop user interface
Manjunatha Reddy	Backend Developer	Design, Develop and Unit Test Services/API/DB
Prashanth Sai	Cloud Architect	Design the cost effective, highly available and scalable architecture
Prashanth & Pintu Harsha	Cloud Operations	Provision required Services
Pintu Harsha	Tester	Define Test Cases and Perform Testing

3.2. Responsibility Assignment Matrix

RACI Matrix	Team Members			
Activity	**Name (BA)**	**Name (Developer)**	**Name (Project Manager)**	**Key Business User**
User Requirement Documentation	A	C/I	I	R
Create use cases and user stories	C	R	C	A
Develop Software`	C	R	C	A
Test the Software	C	R	C	A
Design the database	C	R	C	A
Create the user interface	C	R	C	A
Write user manuals and stop generating	R	R	C	A

custom documentation				
Deploy the system to the production environment	C	C	R	A

A	Accountable: The team member who is ultimately accountable for the activity. This person has the final say and is responsible for making sure that the activity is completed to the required standard.
R	Responsible: The team member who is responsible for completing the activity. This person is accountable for ensuring that the activity is completed successfully.
C	Consult: The team member who is consulted for their input and expertise on the activity
I	Inform: : The team member who is kept informed of progress and any changes related to the activity.

Reference

1. https://www.pmi.org/
2. https://www.projectmanagement.com/
3. https://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/ti-it/ervcpgpm-dsfvpmpt-eng.html

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	05
Title of Experiment	Píepaíe Woík bíeakdown stíuctuíe, Ɪ'imeline chaít, Risk Identification table
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	03-03-23

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

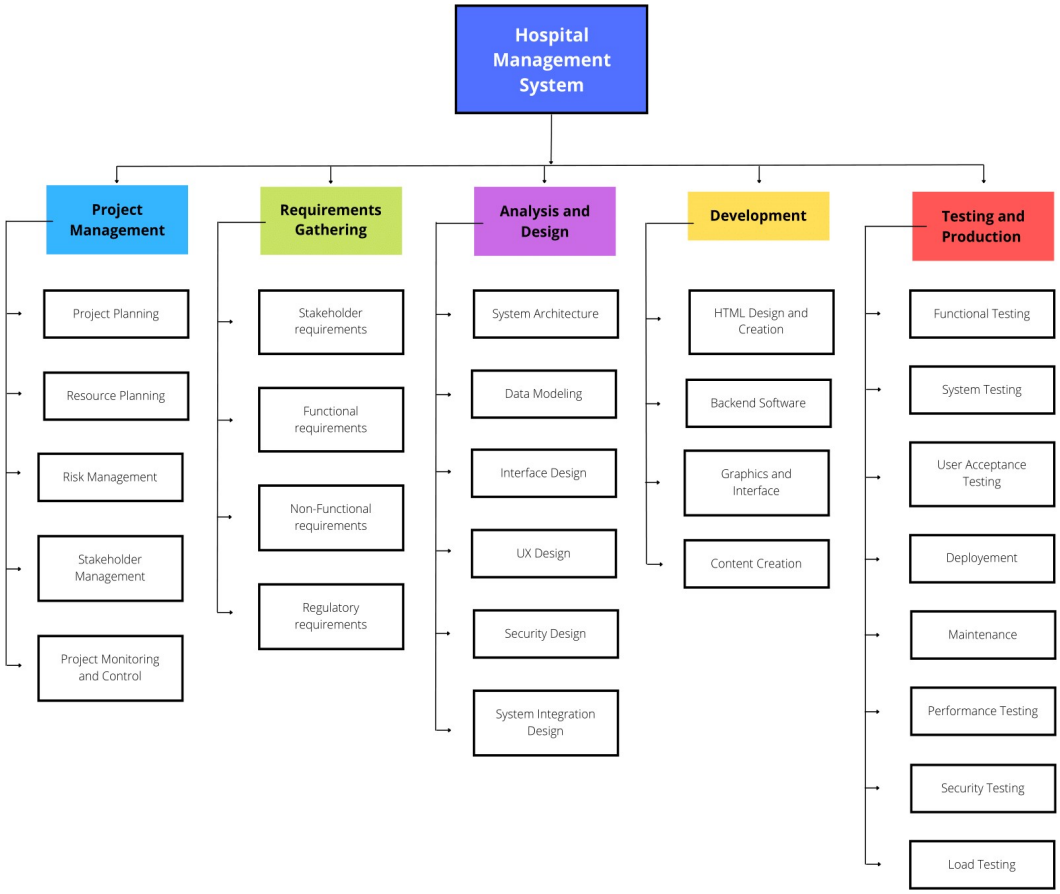
Aim

To Prepare Work breakdown structure, Timeline chart and Risk identification table

Team Members:

Sl No	Register Number	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

Work Breakdown Structure:



- Hospital Management System
  - 1.0 Project Management
    - 1.1 Project Planning
    - 1.2 Resource Planning
    - 1.3 Risk Management
    - 1.4 Stakeholder Management
    - 1.5 Project Monitoring and Control
  - 2.0 Requirements Gathering
    - 2.1 Stakeholder Requirements
    - 2.2 Functional Requirements
    - 2.3 Non-Functional Requirements
    - 2.4 Regulatory Requirements
  - 3.0 Analysis & Design
    - 3.1 System Architecture
    - 3.2 Data Modeling
    - 3.3 Interface Design
    - 3.4 User Experience Design
    - 3.5 Security Design
    - 3.6 System Integration Design
  - 4.0 Site Software Development
    - 4.1 HTML Design and Creation
    - 4.2 Backend Software
      - 4.2.1 Database Implementation
      - 4.2.2 Middleware Development
      - 4.2.3 Security Subsystems
      - 4.2.4 Patient Management System
      - 4.2.5 Appointment Management
      - 4.2.6 Billing and Payment System
      - 4.2.7 Inventory Management System
      - 4.2.8 Staff Management System
    - 4.3 Graphics and Interface
    - 4.4 Content Creation
  - 5.0 Testing and Production
    - 5.1 Functional Testing
    - 5.2 System Testing
    - 5.3 User Acceptance Testing
    - 5.4 Deployment
    - 5.5 Maintenance
    - 5.6 Performance Testing
    - 5.7 Security Testing
    - 5.8 Load Testing

TIMELINE – GANTT CHART

RISK ANALYSIS – SWOT & RMMM

❖ SWOT ANALYSIS:

Strengths:

- Improved efficiency in hospital operations
- Enhanced patient care and satisfaction
- Streamlined communication and collaboration among hospital staff
- Improved data accuracy and accessibility
- Potential cost savings over time

Weaknesses:

- High initial cost and resource investment
- Potential resistance to change from hospital staff
- Potential technical difficulties during implementation and maintenance
- Dependence on technology may lead to system downtime or data loss

Opportunities:

- Increased demand for digital health solutions
- Potential for revenue growth through increased efficiency and patient satisfaction
- Potential for research and development opportunities
- Potential for collaboration with other healthcare providers

Threats:

- Cybersecurity risks and data breaches
- Legal and regulatory compliance requirements
- Potential for interoperability issues with existing hospital systems
- Potential for system errors or malfunctions during critical patient care situations

❖ **RMMM:**

Risk:

- Technical difficulties during implementation and maintenance
- Dependence on technology may lead to system downtime or data loss

Mitigation:

- Conduct thorough testing and quality assurance during development and prior to go-live
- Develop and implement disaster recovery and business continuity plans
- Provide ongoing technical support and maintenance to prevent system downtime and data loss

Monitoring:

- Monitor system performance and availability using system monitoring tools
- Conduct regular audits and assessments of data backup and recovery processes
- Continuously evaluate and improve disaster recovery and business continuity plans

Management:

- Assign responsibility for system maintenance and support to qualified and experienced staff
- Develop and implement clear policies and procedures for data backup, recovery, and system maintenance
- Provide ongoing training and professional development opportunities for staff to maintain technical proficiency and knowledge

Result:

Thus, the work breakdown structure with timeline chart and risk table were formulated successfully.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	6
Title of Experiment	Design a System Architecture, Use Case and Class Diagram
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	13-03-23

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

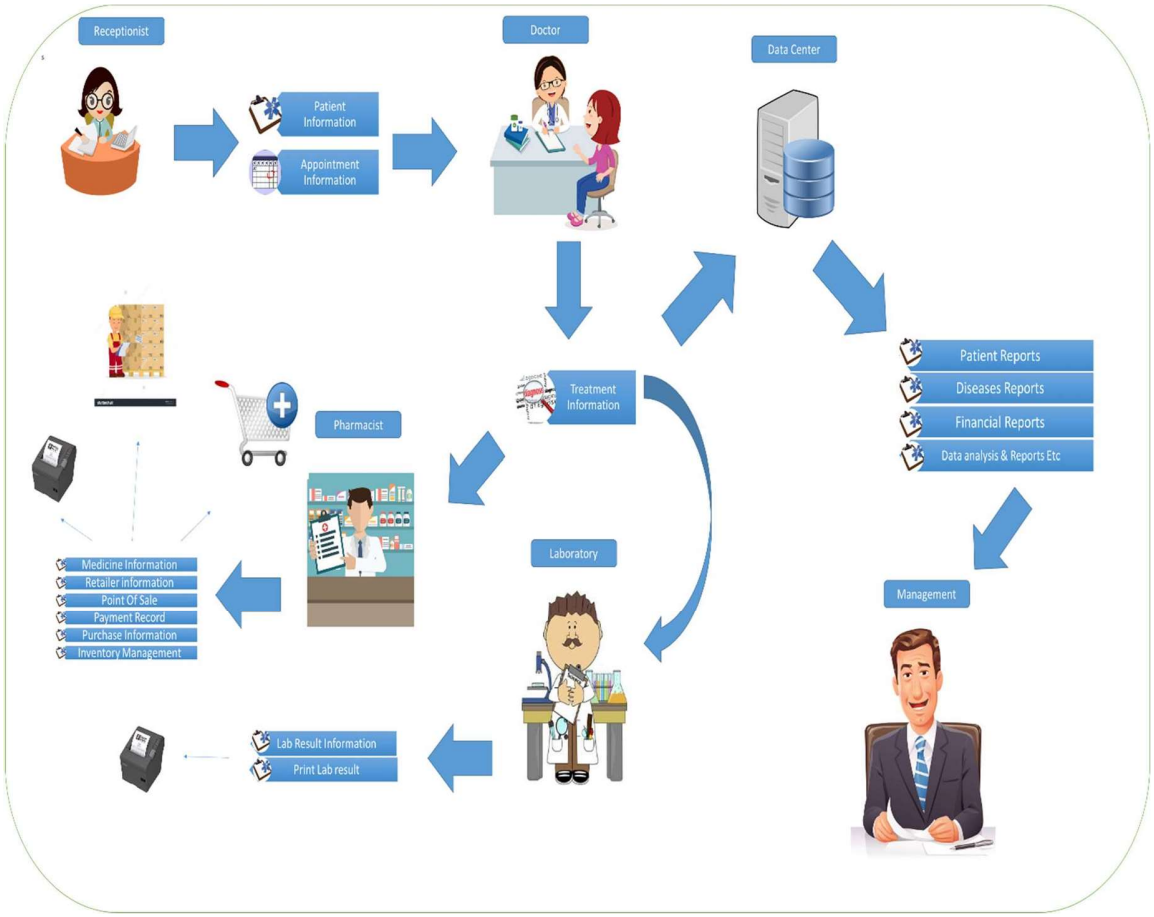
Aim:

To Design a System Architecture, Use case and Class Diagram

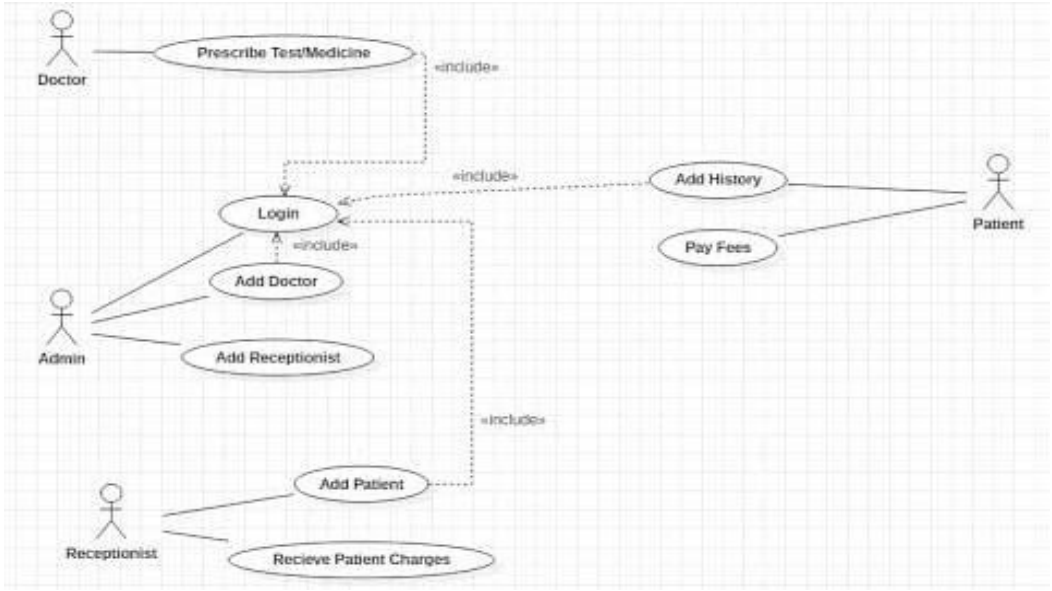
Team Members:

Sl No	Register Number	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

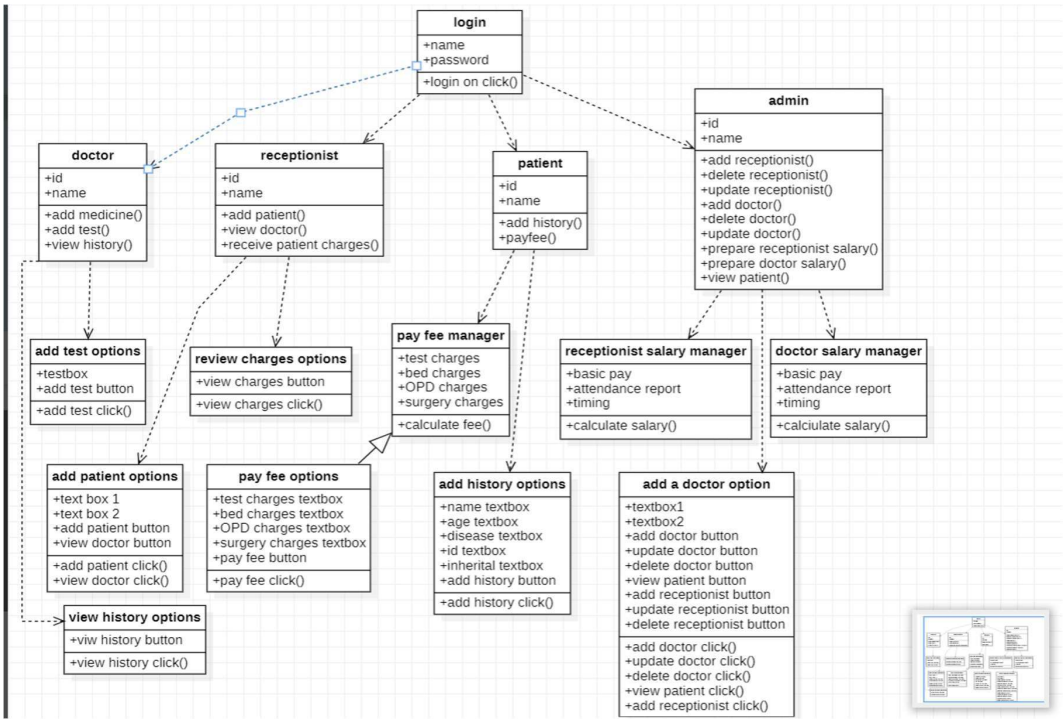
SYSTEM ARCHITECTURE:



USE CASE DIAGRAM:



CLASS DIAGRAM:



Result:

Thus, the system architecture, use case and class diagram created successfully.

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School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	7
Title of Experiment	Design a Entity relationship diagram
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	20-03-23

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

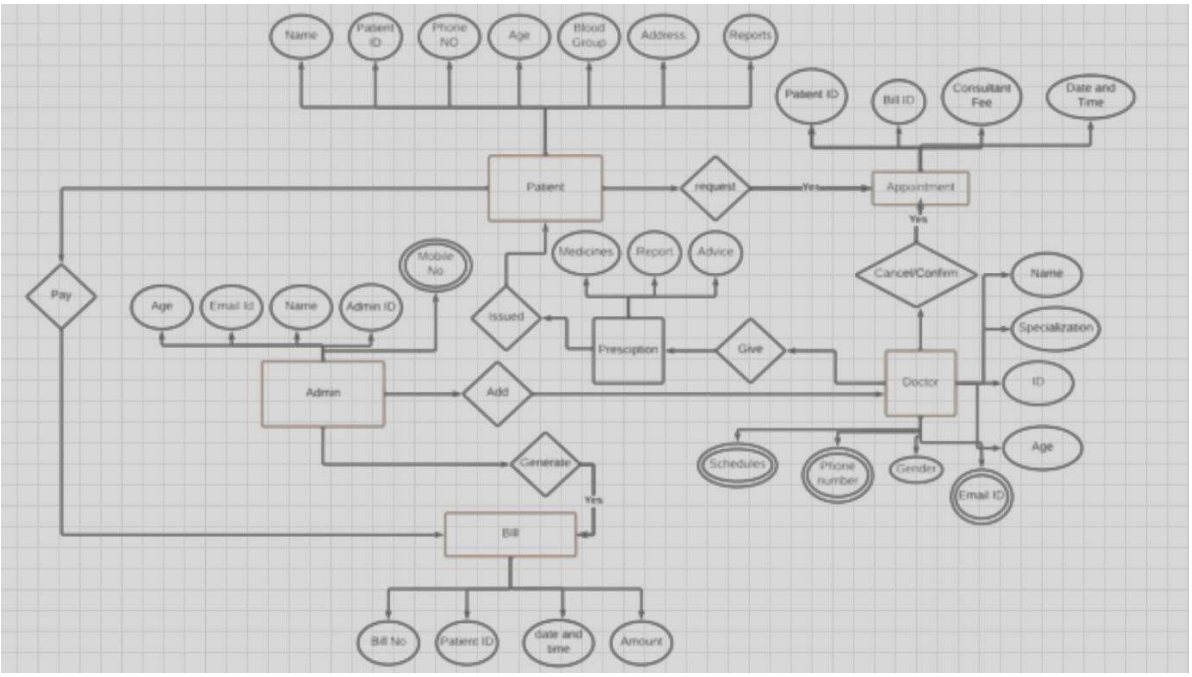
Aim

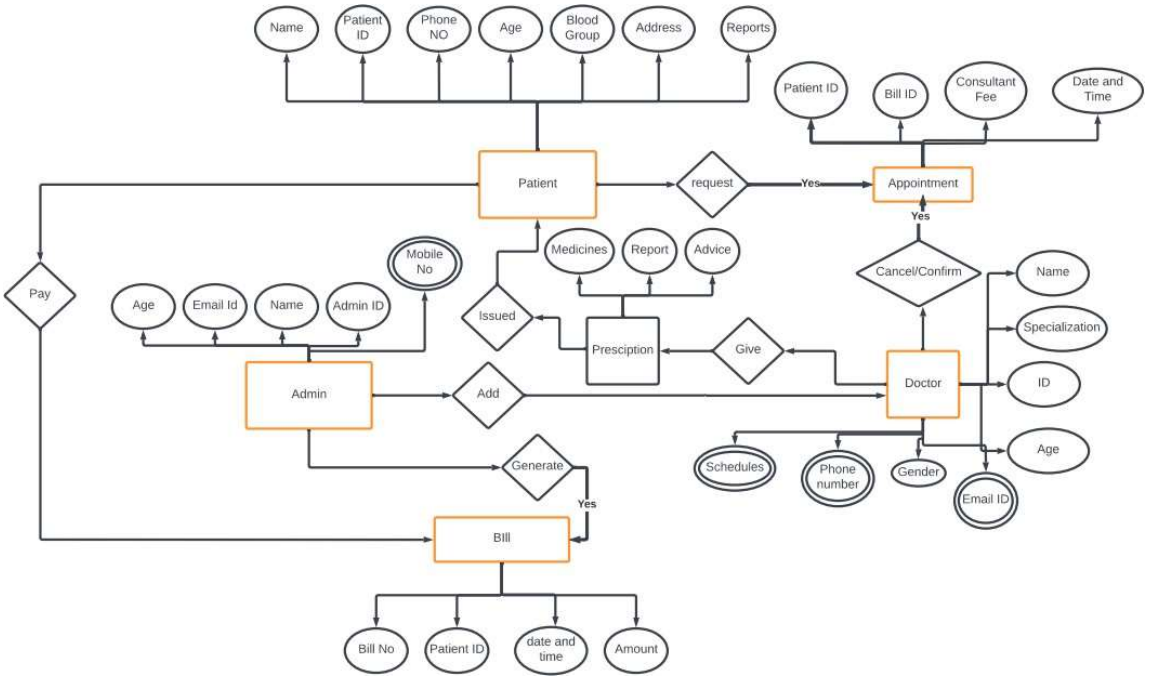
To create the Entity Relationship Diagram

Team Members:

Sl No	Register Number	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

ER DIAGRAM:-





NOTE:- This picture is added again for proper visibility of the entity types and their relations with an updated resolution of the previous above picture.

Result:

Thus, the entity relationship diagram was created successfully.

<u>*/ ER Diagram, Notation and Example</u>

What is ER Diagram?

- ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.
- ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.
- At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.

What is ER Model?

- ER Model stands for Entity Relationship Model is a high-level conceptual data model diagram. ER model helps to systematically analyze data requirements to produce a well-designed database.
- ER Model represents real-world entities and the relationships between them. Creating an ER Model in DBMS is considered as a best practice before implementing your database.
- ER Modeling helps you to analyze data requirements systematically to produce a well-designed database. So, it is considered a best practice to complete ER modeling before implementing your database.

Why use ER Diagrams?

Here, are prime reasons for using the ER Diagram

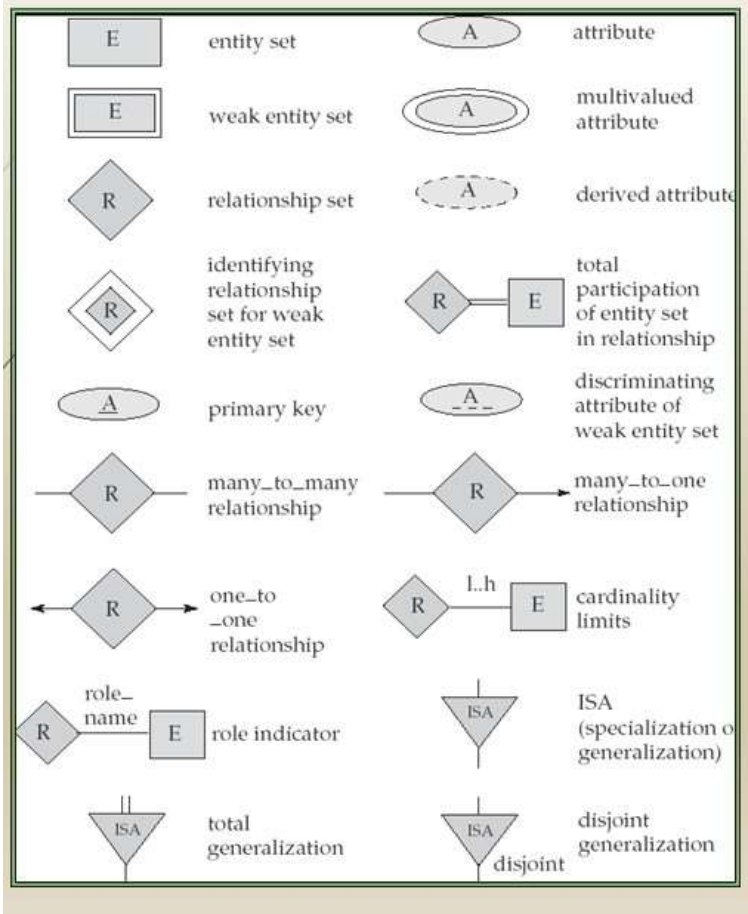
- Helps you to define terms related to entity relationship modeling
- Provide a preview of how all your tables should connect, what fields are going to be on each table
- Helps to describe entities, attributes, relationships
- ER diagrams are translatable into relational tables which allows you to build databases quickly
- ER diagrams can be used by database designers as a blueprint for implementing data in specific software applications
- The database designer gains a better understanding of the information to be contained in the database with the help of ERP diagram
- ERD Diagram allows you to communicate with the logical structure of the database to users

Components of the ER Diagram

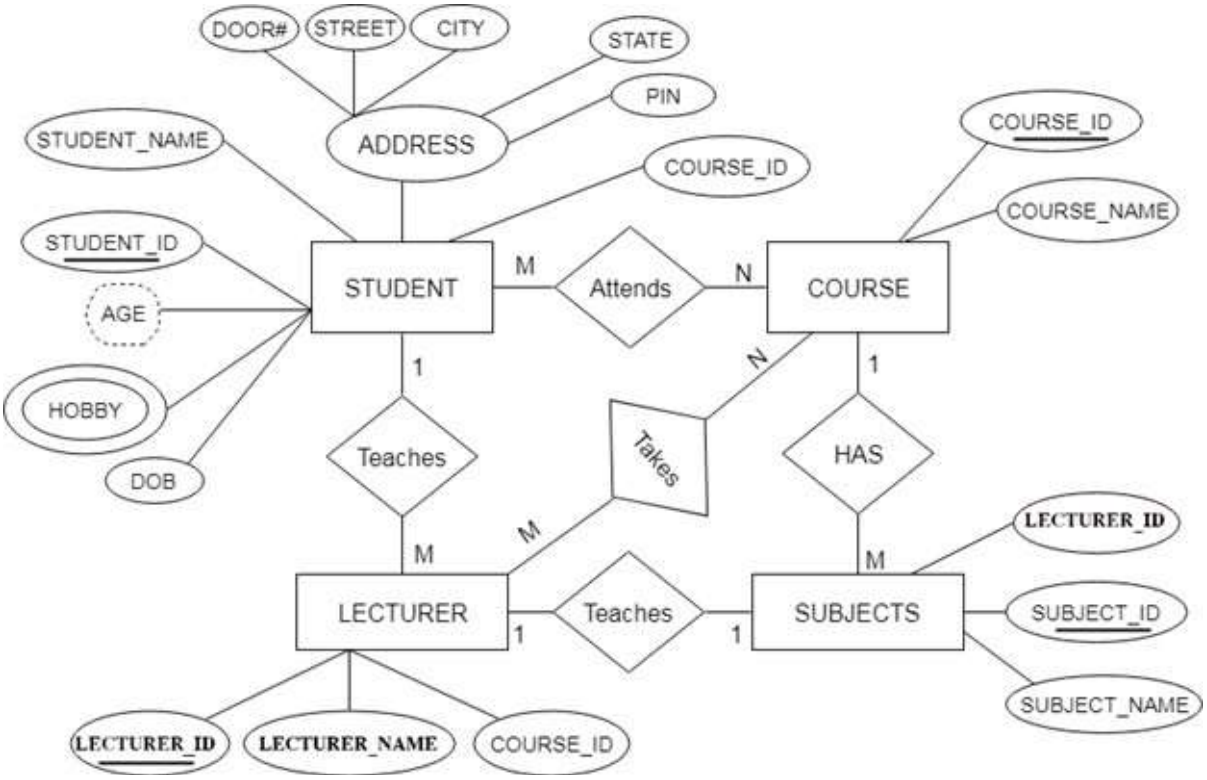
This model is based on three basic concepts: Entities, Attributes, Relationships

ER Diagram – Notations

- Rectangles represent entity sets.
- Diamonds represent relationship sets.
- Lines link attributes to entity sets and entity sets to relationship sets.
- Ellipses represent attributes
- Double ellipses represent multivalued attributes.
- Dashed ellipses denote derived attributes.
- Underline indicates primary key attributes



ER Diagram of University Database



ADDITIONAL NOTES

- A database can be modeled as a collection of entities, relationship among entities.
- An entity is an object that exists and is distinguishable from other objects.
Example: specific person, company, event, plant
- Entities have attributes.
Example: people have names and addresses
- An entity set is a set of entities of the same type that share the same properties.
Example: set of all persons, companies, trees, holidays

- Express the number of entities to which another entity can be associated via a relationship set.
- Most useful in describing binary relationship sets.
- We express cardinality constraints by drawing either a directed line (->), signifying "one," or an undirected line (—), signifying "many," between the relationship set and the entity set.

- An entity is represented by a set of attributes, that is descriptive properties possessed by all members of an entity set.
Example: customer = (customer-id, customer-name, customer-street, customer-city)
loan = (loan-number, amount)
- Domain – the set of permitted values for each attribute
- Attribute types:
1. Simple and composite attributes.
2. Single-valued and multi-valued attributes
E.g. multivalued attribute: phone-numbers
3. Derived attributes-Can be computed from other attributes
E.g. age, given date of birth

Cardinality

- For a binary relationship set the mapping cardinality must be one of the following types:

1. One to one

A customer is associated with at most one loan via the relationship borrower. A loan is associated with at most one customer via borrower

2. One to many

A loan is associated with at most one customer via borrower, a customer is associated with several (including 0) loans via borrower

3. Many to one

A loan is associated with several (including 0) customers via borrower, a customer is associated with at most one loan via borrower

4. Many to many

A loan is associated with several (including 0) customers via borrower, a customer is associated with several loans (including 0) via borrower

Weak Entity Set

- An entity set that does not have a primary key is referred to as a weak entity set and represented by double outlined box in E-R diagram.

Example : Consider the entity set payment which got three attributes : payment_number, payment_date and payment_amount. Payment numbers are sequential starting from 1 generally separately for each loan. Although each payment entity is distinct, payments for different loans may share the same payment number. Thus this entity set does not have a primary key.

Discriminator

- The discriminator (or partial key) of a weak entity set is the set of attributes that distinguishes among all the entities of a weak entity set

Example: discriminator of weak entity set payment is the attribute payment_number since for each loan a payment number uniquely identifies one single payment for that loan.

Specialization-Generalization-ISA

- E-R model provides means of representing these distinctive entity groupings
- Process of designating subgroupings within an entity set is called specialization depicted by triangle component labelled ISA (“is a”)
- Bottom up design process in which multiple entity sets are synthesized into higher level entity set - Generalization
- ISA relationship may also be referred to as superclass-subclass relationship
- Higher and lower level entity sets are designated by the terms superclass and subclass.
- Specialization and generalization are simple inversions of each other; they are represented in an E-R diagram in the same way.

Total & Partial Participation

- Total participation (indicated by double line): every entity in the entity set participates in at least one relationship in the relationship set

E.g. participation of loan in borrower is total, every loan must have a customer associated to it via borrower

- Partial participation: some entities may not participate in any relationship in the relationship set

Example: participation of customer in borrower is partial

Cardinality limits
- Cardinality limits can also express participation constraints
- Minimum and maximum cardinality is expressed as l..h where l is the minimum and h is the maximum cardinality
- Minimum value of 1 indicates total participation of entity set in relationship set
- Maximum value of 1 indicates entity participates in atmost one relationship set.
- Maximum value of * indicates no limit

Role indicator
- Entity sets of a relationship need not be distinct
- The labels “manager” and “worker” are called roles; they specify how employee entities interact via the works-for relationship set.
- Roles are indicated in E-R diagrams by labeling the lines that connect diamonds to rectangles.
- Role labels are optional, and are used to clarify semantics of the relationship

Disjoint Generalization
- Disjointness constraint requires that an entity belong to more than one lower level entity set. Example: account entity can satisfy only one condition for account_type attribute ; entity can either be savings or chequing account but not both.

School of Computing

SRM IST, Kattankulathur – 603 203 Course

Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	8
Title of Experiment	Develop a Data Flow Diagram (Process-Up to Level 1)
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	28-03-23

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To develop the data flow diagram up to level 1 for the Hospital Management System

Team Members:

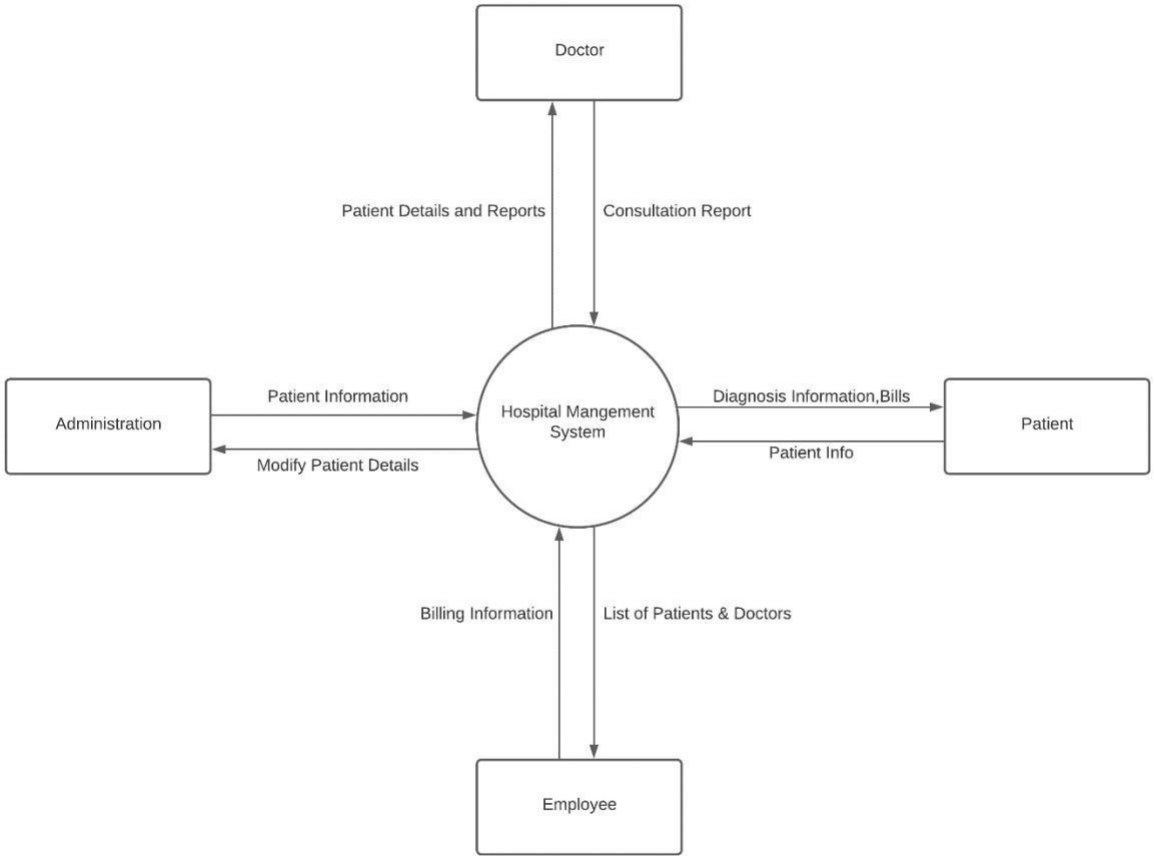
S No	Register Number	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

Data Flow Diagram

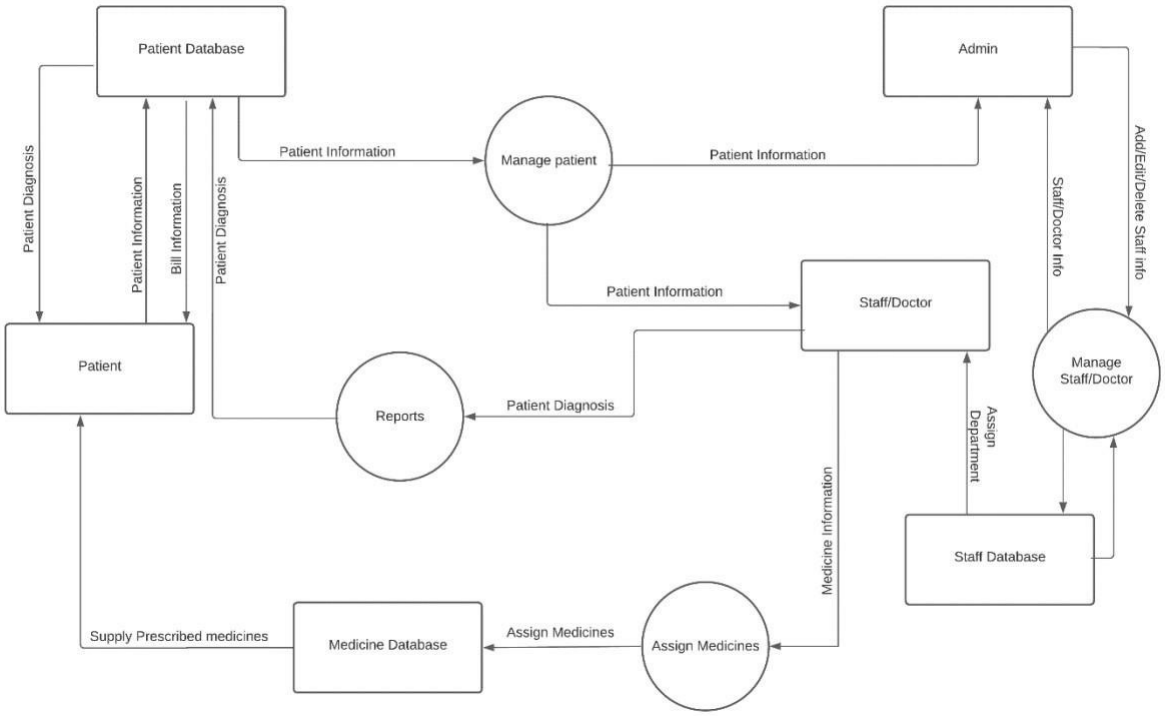
The DFD takes an input-process-output view of a system. That is, data objects flow into the software, are transformed by processing elements, and resultant data objects flow out of the software. Data objects are represented by labeled arrows, and transformations are represented by circles (also called bubbles). The DFD is presented in a hierarchical fashion. That is, the first data flow model (sometimes called a level 0 DFD or context diagram) represents the system as a whole. Subsequent data flow diagrams refine the context diagram, providing increasing detail with each subsequent level.

The data flow diagram enables you to develop models of the information domain and functional domain. As the DFD is refined into greater levels of detail, you perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of data as it moves through the processes that embody the application.
A few simple guidelines can aid immeasurably during the derivation of a data flow diagram:
(1) Level 0 data flow diagram should depict the software/system as a single bubble;
(2) Primary input and output should be carefully noted;
(3) Refinement should begin by isolating candidate processes, data objects, and data stores to be represented at the next level;
(4) All arrows and bubbles should be labeled with meaningful names;
(5) Information flow continuity must be maintained from level to level and
(6) One bubble at a time should be refined. There is a natural tendency to overcomplicate the data flow diagram. This occurs when you attempt to show too much detail too early or represent procedural aspects of the software in lieu of information flow.

DFD Level 0


Doctor
Patient Details and Reports
Consultation Report
Administration
Patient Information
Modify Patient Details
Hospital Mangement System
Diagnosis Information,Bills
Patient Info
Patient
Billing Information
List of Patients & Doctors
Employee

DFD Level 1



Result:

Thus, the data flow diagrams have been created for Hospital Management System

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	09
Title of Experiment	Design a Sequence and Collaboration Diagram
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	04-04-2023

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

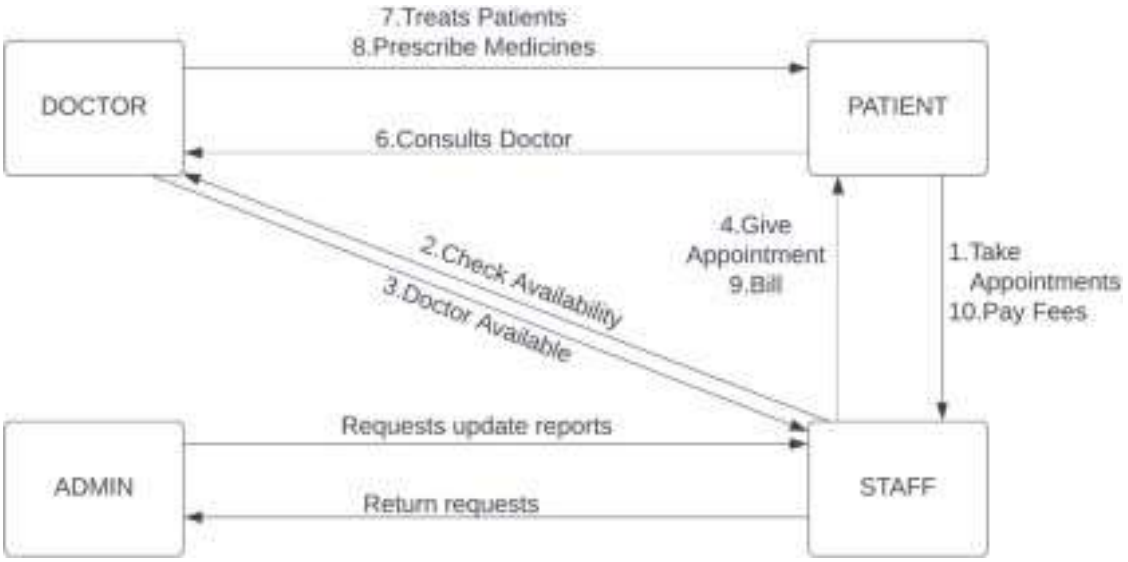
Aim

To create the sequence and collaboration diagram for the Hospital Management System

Team Members:

S No	Register Number	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

COLLABORATION DIAGRAM



Result:

Thus, the collaboration diagrams were created for the Hospital Management System.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	10
Title of Experiment	Develop a Testing Framework/User Interface
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	12-04-2023

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim

To develop the testing framework and/or user interface framework for the Hospital Management System.

Team Members:

Sl No	Register Number	Name	Role
1	RA2111028010164	SUMITH SAI	Lead
2	RA2111028010142	PRASANTH SAI	Member
3	RA2111028010140	MANJUNATHA REDDY	Member
4	RA2111028010152	CHALLA PINTU	Member

Executive Summary Test Plan

This test plan defines the scope, objective, and approach to testing the Hospital Management System project. The scope of testing includes functional and non-functional requirements. The approach to testing will be a combination of manual and automated testing, and the tools required for functional testing will be Test Management software and Automated Testing tools.

Scope of Testing

Functional Testing: The scope of functional testing includes testing all modules of the Hospital Management System. The critical path test cases will be included in the regression test suite. The automation will cover all functional test cases except for the modules that require manual testing. Any exceptions for any modules will be documented and addressed.

Non-Functional Testing: The scope of non-functional testing includes testing all nonfunctional requirements such as performance, scalability, usability, security, and compatibility.

Types of Testing, Methodology, Tools

Category	Methodology	Tools Required
Functional Requirements	Manual	Test Management software, Word Template
Non-Functional Requirements	Automated and Manual	Load Testing tools (JMeter), Security Testing tools (OWASP ZAP), Compatibility Testing tools (various browsers, devices, operating systems)
Integration Testing	Automated and Manual	Integration Testing tools, Test Management software
User Acceptance Testing	Manual	Test Management software, User Acceptance Test cases
Regression Testing	Automated	Automated Testing tools (Selenium, Appium), Test Management software
Performance Testing	Automated	Load Testing tools (JMeter), Test Management software
Security Testing	Automated	Security Testing tools (OWASP ZAP), Test Management software
Database Testing	Automated	Database Testing tools (SQL scripts), Test Management software
Accessibility Testing	Automated and manual	Accessibility Testing tools (axe, WAVE), Test Management software
Usability Testing	Automated	Usability Testing tools (user feedback surveys, heatmaps), Test Management software

Result:

Thus, the testing framework/user interface framework has been created for the Hospital Management System.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	11
Title of Experiment	Test Cases
Name of the candidate	PRASANTH SAI
Team Members	Sumith Sai, Manjunath Reddy, Prasanth Sai, Pintu Harsha
Register Number	RA2111028010142
Date of Experiment	19-04-2023

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	10	

Staff Signature with date

Aim: To develop the test cases manual for the Hospital Management System

Team Members:

S No	Register No	NAMES	Role
1	RA2111028010164	Sumith Sai	Lead
2	RA2111028010140	Manjunath Reddy	Member
3	RA2111028010142	Prasanth Sai	Member
4	RA2111028010152	Pintu Harsha	Member

Test Case Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
T1	Booking Appointment	Valid email, password, and sign-up information	1. Launch the E-Doctor App 2. Login using valid credentials.	Successful sign-up	Successful sign-up	Pass	Success

T2	View hospıtals, Doctors and Discounts	Valid email and password	1. Launch the E-Doctor App 2. Login using valid credentials 3. Browse through the app to view available hospitals, doctors and discounts	Successful logın	Successful logın	Pass	Success
T3	View Booking History	User clicks on logout button	1. Launch the E- doctor App. 2. Login using valid credentials. 3. Go to the booking history section o the app.	Successful logout	Successful logout	Pass	Success

T4	Search for Hospitals	User updates profile information	1. Launch the E-doctorApp. 2. Login using valid credentials. 3. Use the search function to search for a specific product. 4. Verify that the search results display the correct hospital with its respective Doctors and discounts	Profile information is updated	Profile information is updated	Pass	Success

T5	Search for Doctors	User updates hospital information	1. Launch the E-doctorApp. 2. Login using valid credentials. 3. Use the search function to search for a specific product. 4. Verify that the search results display the correct details of the doctor	Search results are displayed	Search results are displayed	Pass	Success
T6	View Appointment Details	User searches for timing and venue of Confirmed Appointment	1. Launch the E-doctor App. 2. Login using valid credentials. 3. Select the Appointment from the app. 4. Verify the Appointment details including its time and venue	Search results are displayed	Search results are displayed	Pass	Success

Non-Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
T1	Performance	Test the response time	Perform searching and booking at different speeds and observe response time	Searches are recognized and translated into info of doctors and hospital	Searches are recognized and translated into info of doctors and hospital	Pass	Success
T2	Security	Test the security measures in place to protect user data	Attempt to access user data without proper authentication or authorization	User data is properly protected with appropriate security measures, and unauthorized access is prevented	User data is properly protected with appropriate security measures, and unauthorized access is prevented	Pass	Success
T3	Reliability	Test the system's reliability and stability under normal and stressful conditions	Perform stress testing, load testing, and endurance testing on the system	System remains stable and reliable even under stressful conditions, with no unexpected crashes	System remains stable and reliable even under stressful conditions, with no unexpected crashes	Pass	Success

T4	Error Handling	Test the system's ability to handle and display errors gracefully	Trigger various error scenarios, such as invalid input or network errors	System handles errors gracefully, providing meaningful error messages and proper handling	System handles errors gracefully, providing meaningful error messages and proper handling	Pass	Success
T5	sability	Test the userfriendliness of the app interface	Perform common tasks such as signing up, logging in, and accessing learning modules	App interface is intuitive and easy to use, with clear navigation	App interface is intuitive and easy to use, with clear navigation	Pass	Success
T6	Scalability	Test the system's ability to handle a large number of simultaneous users	Simulate a high number of concurrent users accessing the system	System can handle a large number of concurrent users without performanc e degradation	System can handle a large number of concurrent users without performanc e degradation	Pass	Success

Result:

Thus, the test case manual has been created for the HOSPITAL BOOKING AND APPOINTMENT SYSTEM.

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	12
Title of Experiment	Manual Test Case Reporting
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Number	RA2111028010142
Date of Experiment	26-04-2023

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

Aim:- To prepare the manual test case report for the Hospital Management System

Team Members:

S No	Register No	Name	Role
1	RA2111028010164	Sumith Sai	Lead
2	RA2111028010140	Manjunath Reddy	Member
3	RA2111028010142	Prashanth Sai	Member
4	RA2111028010152	Pintu Harsha	Member

Category	Progress Against Plan	Status
FUNCTIONAL TESTING	Green / Amber / Red	Not-Started / In-Progress / Completed
Unit testing integration testing system testing	Amber Red Green	in progress not started completed
NON FUNCTIONAL TESTING performance testing	green	completed
security testing	red	not started
compatibility testing	amber	in progress

Functional	Test Case Coverage (%)	Status

Module ID	30%	Not-Started / In-Progress / Completed
APPOINTMENT DETAILS	100%C	OMPLETED
DOCTOR ALLOCATION	80%	IN PROGRESS
BILL GENERATION	50%	IN PROGRESS

FUNCTIONAL TEST CASE COVERAGE REPORT:

Module ID: 30%

Description: Hospital Management System

Total Number of Test Cases: TI
Number of Test Cases Completed: 6
Number of Test Cases In-Progress: 2
Number of Test Cases Not-Started: 2
Functional Test Case Coverage: 30%
Status: In-Progress

Notes:

1: The completed test cases have been executed successfully and have passed.
2: The in-progress test cases are currently being executed and the results are pending,
The not-started test cases will he executed once the in-prooress test cases are completed.
4: The functional test case coverage is currently at 30%, indicating that there is still work to be done in terms of testing.
5: The status of the test case coverage is in-progress, as there are still pending test cases.
Overall, it's important to continue tracking the progress of the testing effort and updating the test case coverage report accordingly. This helps ensure that the system is thoroughly tested and any issues or defects are caught and addressed before the system is released to users.
Conclusion:-
Thus, the test case report has been created

Result: Thus, the test case report has been created for the Hospital Management System

School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	13
Title of Experiment	Hospital Management System
Name of the candidate	PRASANTH SAI
Team Members	PRASANTH SAI, MANJUNATHA REDDY , PINTU HARSHA
Register Numbers	RA21110280101
Date of Experiment	03-05-2023

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	**10**	

Staff Signature with date

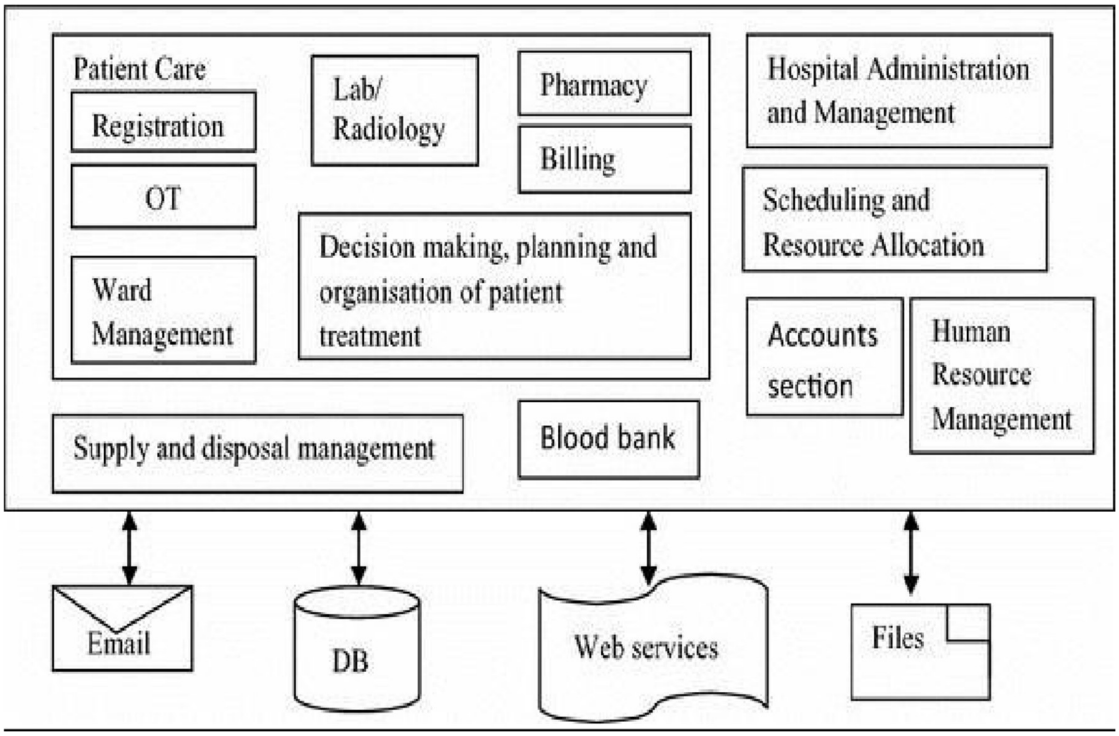
Aim

To provide the details of architectural design/framework/implementation for Hospital Management System.

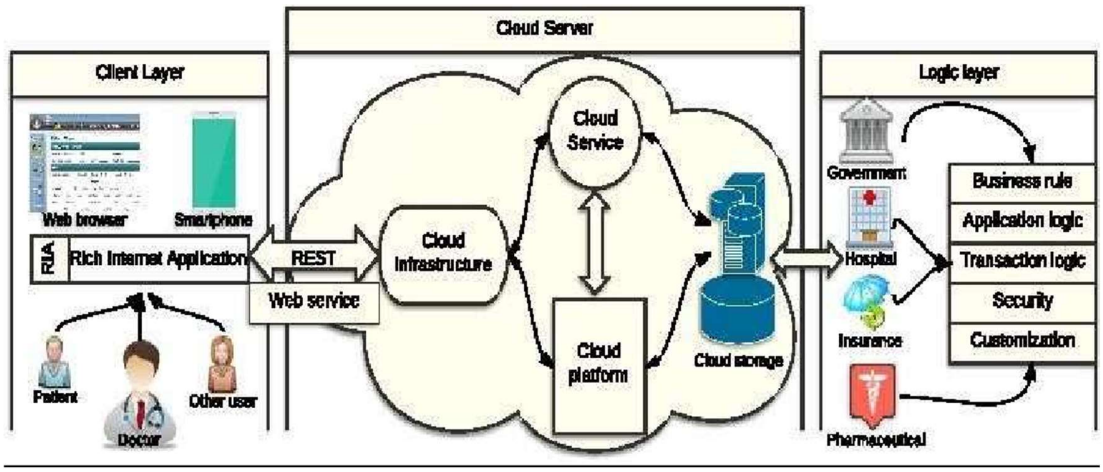
Team Members:

S No	Register No	Name	Role
1	RA2111028010164	Sumith Sai	Lead
2	RA2111028010152	Pintu Harsha	Member
3	RA2111028010142	Prasanth Sai	Member
4	RA2111028010140	Manjunath reddy	Member

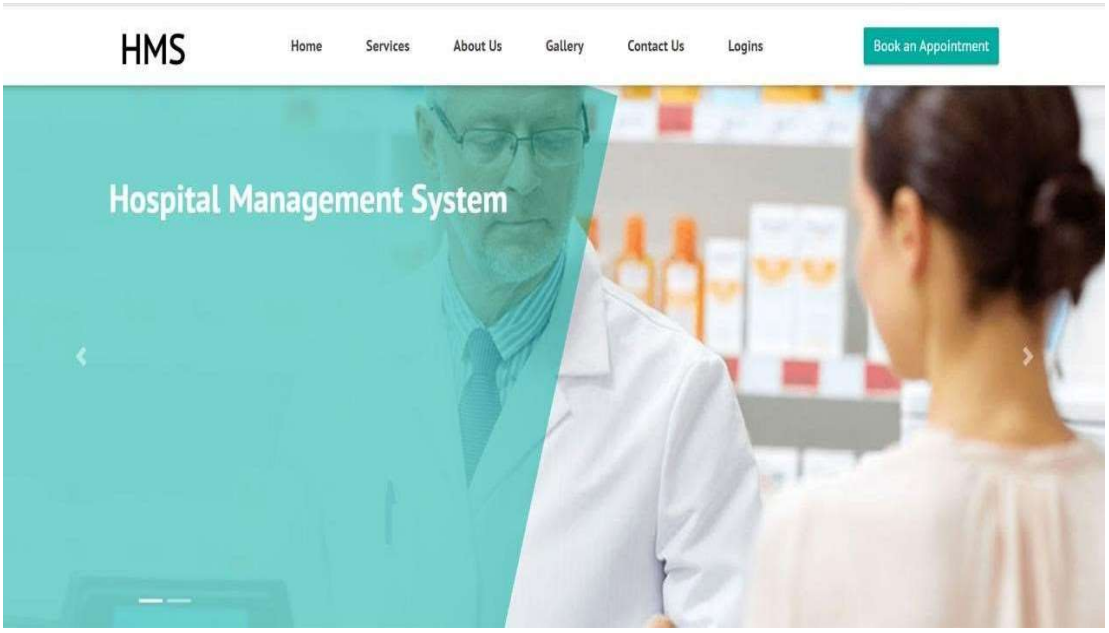
Architectural Design:



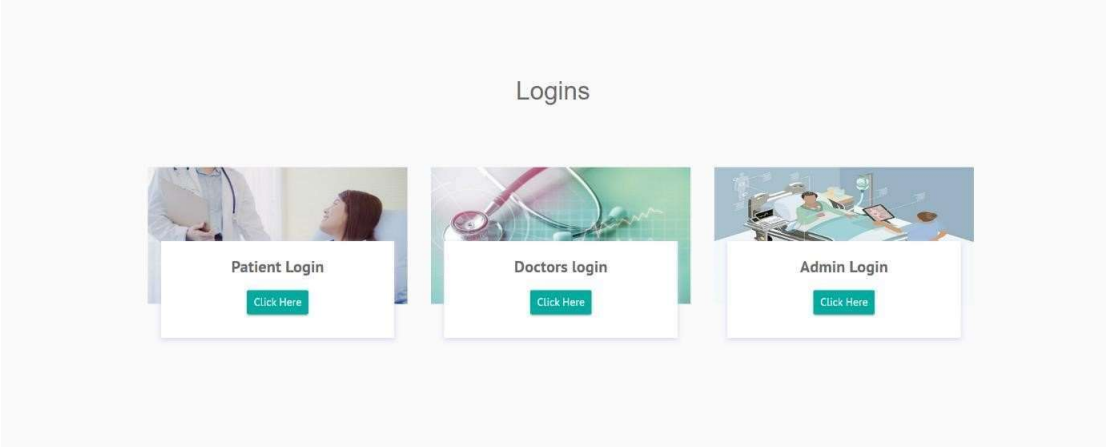
FRAME WORK



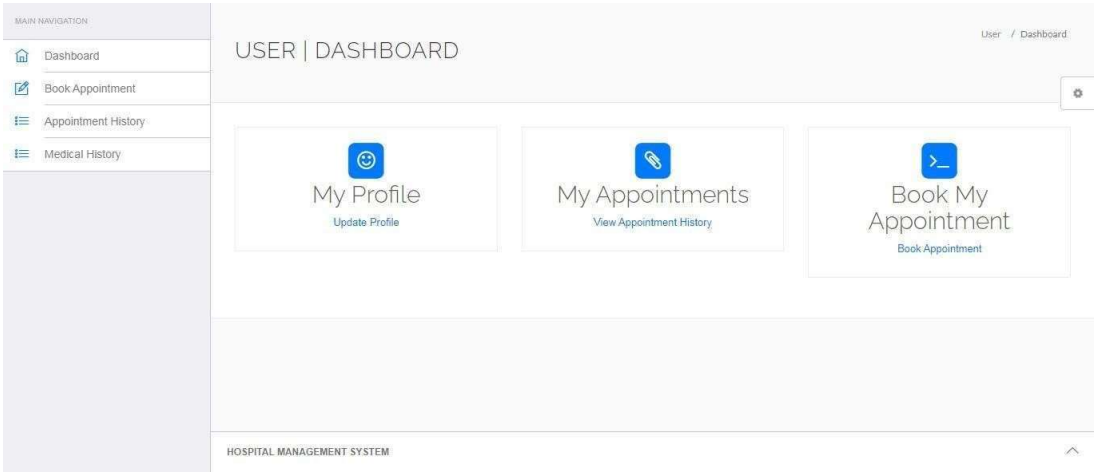
Implementation:



Login Dashboard



Patient login



Sample Codes:

Login Form:

Public Class Login

Dim form1 As New main menu

Private Sub OK_Click(ByVal sender As System.Object, ByVale As System.EventArgs) Handles OK.

Click

If PasswordTextBox.Text = "hospital" ThenMsgBox("Login Success",MsgBoxStyle.Information,"hospital management")

PasswordTextBox.Text = ""

Me.Hide()

mainmenu.Show()

Else MsgBox("Login Failed", MsgBoxStyle.Critical,"HospitalManagement")

```
PasswordTextBox.Text = ""
Me.Show()
 End If
End Sub
Private
Sub Cancel_Click(ByVal sender As System.Object,ByVal e As System.EventArgs) Handles Cancel.
click Me.Close()
End SubPrivate
Sub Button1_Click(ByValsender As System.Object,ByVal e As System.EventArgs) Handles Button1.
Click
End
End Sub
End Class
```

Impatient Login:

```
Imports System.Data.OleDb
Public Class inpatient
PrivateSub Button2_Click(ByValsender As System.Object,ByVal e As System.EventArgs) Handles
 Button2.Click
Dim cmd As New OleDbCommand
conn.open()
Dim sql As String = "insert into ipt values('" &TextBox6.Text & "','" & TextBox5.Text & "','" &
TextBox4.Text& "','" & RichTextBox4.Text & "','" & DateTimePicker1.Text &"','" & ComboBox1.Text &
"','" & TextBox2.Text & "','" &TextBox3.Text & "','" & TextBox7.Text & "','" & TextBox8.Text& "','" &
DateTimePicker2.Text & "')"
cmd = New OleDbCommand(sql, conn)
cmd.ExecuteReader()
MsgBox("Record Inserted", MsgBoxStyle.Information,"Hospital Management")
TextBox2.Text = ""
TextBox3.Text = ""
TextBox4.Text = "" RichTextBox4.Text = ""
TextBox5.Text = ""
TextBox6.Text = ""
TextBox7.Text = ""
TextBox8.Text = ""
ComboBox1.Text = ""
conn.close()
```

```
End Sub
Private Sub inpatient_Load(ByVal sender As System.Object,ByVal e As System.EventArgs) Handles
MyBase.Load
Me.ComboBox1.Items.Add("Male")
Me.ComboBox1.Items.Add("Female")
End Sub
PrivateSub Button1_Click(ByValsender As System.Object,ByVal e As System.EventArgs) Handles
Button1.Click
Me.Hide()
mainmenu.Show()
End SubPrivate Sub Button4_Click(ByValsender As System.Object,ByVal e As System.EventArgs)
Handles Button4.
Clickiptrecord.Show()
End Sub
End Class
```

Result:

Thus, the details of architectural design/framework/implementation along with the screenshots were provided.

Conclusion:

This can be a powerful tool to help healthcare organizations improve processes and streamline operations. It can provide an integrated, comprehensive solution to managing patient records, billing and scheduling, as well as provide real- time insights into hospital performance. When used correctly and effectively, a hospital management system can help hospitals ensure that their operations are as efficient and effective as possible.

As with any software project, thorough planning and testing are essential for success. The project team should collaborate closely with stakeholders to identify requirements and create a detailed development plan. It is also important to conduct extensive testing to ensure the application is functional and meets the needs of both customers and restaurants. Overall, an online food ordering application has the potential to provide significant benefits to both customers and restaurants, making it a valuable software project to consider.

References:

www.wikipedia.com

www.apollopharmacy.in

http://link.springer.com.portal.lib.fit.edu/book/10.1007%2F978-1-4614-5885-2