18CSC265J-Software Engineering 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 <Business Systems>

SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

KATTANKULATHUR - 603203

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SRM INSTITUTION OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR-603203

BONAFIDE CERTIFICATE

Certified that this lab report titled **"18CSC265J-Software Engineering"** is the bonafide work done by <MSV Karthik> (RA2111042010058) who carried out the lab exercises under my supervision in SRM Institute of Science and Technology, Kattankulathur during the academic year 2022-2023.

Signature of Lab-In charge

Date: **Signature of Head of the Department**

Submitted for the University Practical Examination held on _____ at SRM Institute of Science and Technology, Kattankulathur, Chennai- 603 203

Examiner - 1 **Examiner - 2**

Name: **Class:**

Reg.no: **Branch/Year:**

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EXPERIMENT NO: 1A

Aim: TO EASILY ACCESSIBLE HEALTH CARE MANAGEMENT SYSTEM.

Team Members:

Sl No	Register No	Name	Role
1.	RA2111042010052	RIPUDAMAN VERMA	TEAM LEADER
2.	RA2111042010058	KARTHIK	TEAM MEMBER
3.	RA2111042010035	SHAHEER	TEAM MEMBER

Project Title: E-HEALTH CARE MANAGEMENT SYSTEM

DESCRIPTION: BASIC PROJECT WHICH CAN BE USED TO GET INFORMATION OF HOSPITALS AND DOCTORS NEARBY AND STORE YOUR PRESCRIPTIONS HISTORY.

- This E health care management system assists in management of staffs, doctors and patients in easy, comfortable and effective service.
- The proposed application aims to create a friendly working environment for any health care centres and to overcome the drawbacks in existing system of health care management. This system is very reliable and flexible from all aspects, so new features and modules can be easily integrated into the system in future.
- The system forms an online visiting platform for doctors and patients.
- Use of this application roots out the problems such as data missing, information miss-match, long lane of patients in hospital etc.
- It accurately analyses the usage percentage of hospital resources, bed occupation ratio, administration, Laboratory information etc.

- **MODULES:**
  - The project consists of two modules: administration module and client module. Administration module mainly deals with the all the Medicare Management such as department, ward, staff.
  - Client module, on the other hand, mainly includes doctors, patients etc.

Result: WITH THIS YOU CAN GET TO KNOW ABOUT HEALTH RECORD AND ALSO KEEP ALL YOUR PRESCRIPTIONS AT ONE PLACE.

.

EXPERIMENT NO: 1B

ONE PAGE BUSINESS CASE TEMPLATE

DATE	22/08/22
SUBMITTED BY	KARTHIK
TITLE / ROLE	TEAM MEMBER

LOGO

THE PROJECT

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

- To optimize bed occupation.
- To improve the use of operating theatres, avoiding the cancellation of operations.
- To optimize the allocation of human and material resources to wards and shifts.
- To detect the influence of certain diseases in the hospital's services.
- To find clusters of patients.

THE HISTORY

In bullet points, describe the current situation.

- In the existing health care system, there is a high chance of misinterpretation of data as well as occurrence of errors.
- With the increase in volume of patients in the health care institutes, traditional method of management has gone out of phase.
- As a result of this, an advanced Health Care Management System has been the demand of time.

LIMITATIONS

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

- Lack of special training on how to proceed after a certain stage
- Tracking location
- Managing records

APPROACH/ METHODOLOGY

List what is needed to complete the project.

- An interactive and responsive interface
- Creating a database for users and for managing the records of the hospitals
- To improve the security of the data stored

BENEFITS

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

- reduces staff stress.
- makes an efficient and accessible patient record.
- Time saving and reducing indirect works, that leads to more direct care delivery.

RESULT: Description of business case template has been done successfully.

EXPERIMENT NO: 2

Aim: To incorporate *Identification of Project Methodology and Stakeholder Description template*

Team Members:

Sl No	Register No	Name	Role
1.	**RA2111042010052**	**RIPUDAMAN VERMA**	**LEAD/RESOURCE INVESTIGATOR**
2.	**RA2111042010058**	**KARTHIK**	**IMPLEMENTOR**
3.	**RA2111042010035**	**SHAHEER**	**TECHNICAL HEAD**

Project Title: HEALTH CARE MANAGEMENT SYSTEM

Project Stakeholder Name	**Specific Information Needs** *Types & Frequency of Communication*	**Project Interests** *Specific Areas of Interest and Participation*	**Impact on Project** *Positive, Negative, Influencer, Supporter, Roadblock*	**Role** *Collaborator, Participant, Consultant, Information Recipient, Information Provider, Resource Investigator, Monitor, Implementor, Idea Creator, Shaper*
RIPUDAMAN VERMA	MOST FREQUENT	Manages all the work and gathers information on project changes and improvements.	Positive. Good at exploring and reporting back on ideas, developments and resources outside immediate group.	RESOURCE INVESTIGATOR
KARTHIK	IMPLEMENTOR	implementors are characterized by their practical approach and	Support. ready to put in a lot of effort to make sure everything is	IMPLEMENTOR

		possess higher than normal levels of self-control and discipline	completed in proper order.	
DR. SANGEETHA .M	frequent	Share their expertise and knowledge to help the project to attain goals and solve problems	Influencer. Understanding of business environments and commercial awareness Good interpersonal and Communication skills.	CONSULTANT MANAGER
PATIENTS	Having meetings once in a while	Share how the model is working and for suggesting improvements as they are the final users.	Influencer. Patients are final customers hence they help in shaping and reviewing the final product.	PARTICIPANT
HOSPITALS	Less meetings	Get to know about the response and changes required as they are the collaborators participates in providing data	positive	Collaborator

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

EXPERIMENT NO: 3

AIM: Identification of process model

PROCESS MODEL

The process model selected is AGILE MODEL.

AGILE MODEL

- The Agile software development methodology is one of the simplest and effective processes to turn a vision for a business need into software solutions.
- It is driven by customer descriptions of what is required.
- Recognizes that plans are short-lived
- Develops software iteratively with a heavy emphasis on construction activities
- Delivers multiple 'software increments'
- Adapts as changes occur
- When creating a software with an agile methodology, the project is divided into smaller, more manageable components and released gradually.
- the subtasks are divided into time slots such that working functionality is guaranteed with each build. Every component that is essential is present in the final product.

ADVANTAGES OF AGILE MODEL

The health care management industry is slowly adapting to agile model because:

- Improved employee engagement
- Reduced risks
- Improves customer satisfaction
- Ensures a quicker ROI
- More flexibility
- Enhanced transparency in performance

WHY AGILE OVER OTHERS??

- Agile model is preferred over waterfall model because:
  - ➔ not flexible
  - ➔ no feedback
  - ➔ no parallel work i.e., at a time only one team can work
  - ➔ high risk because changes/mistakes can't be solved until last phase
- Agile model is preferred over iterative - waterfall model because:
  - ➔ no backtracking
  - ➔ same as waterfall model but with feedback
- Agile model is preferred over prototyping model because:
  - ➔ time consuming
  - ➔ misunderstanding regarding the final version
  - ➔ high cost
- Agile model is preferred over spiral model because:
  - ➔ complex
  - ➔ expensive
  - ➔ too much risk analysis
  - ➔ takes more time

V - MODEL; INCREMENTAL MODEL AND AGILE COULD BE USED FOR THIS PROJECT. HENCE, WE CHOSE AGILE MODEL.

Result: HENCE THE PROJECT METHODOLOGY WAS IDENTIFIED

EXPERIMENT NO: 4

AIM: TO DESIGN PROJECT PLAN WITH EFFORT ESTIMATION

Project plan

Roles and Responsibilities

NAME	**ROLE**	**RESPONSIBILITY**
RIPUDAMAN VERMA	Specialist/Software Modifier	• Execute tests on software usability • Review software requirements • Analyse test results on database impacts, errors or bugs.
SHAHEER	Facilitator/Software Developer	• Participate in building the models and apps • Design the webpages and dynamic environment
KARTHIK	Resource Investigator/Software Planer	• Look over the entire quality of the deliverables • Design, implement and manage software programs • Write and implement efficient code

ESTIMATION OF PROJECT EFFORT:

The estimation technique to be used is Three Point Analysis (TPA).
Three-point estimation is the estimation method based on statistical data. In this, tasks are broken down into subtasks & three types of estimation are done on these sub pieces.

Information Domain Description:

Optimistic Estimate (O): Estimate for all favourable conditions with no risks or changes.

Pessimistic Estimate (P): Estimate for all unfavourable conditions with all negative risks occurring and no mitigation of negative risks.

Most Likely Estimate (M): Estimate for both favourable and unfavourable conditions, with some risks occurring.

COCOMO MODEL:

The Constructive Cost Model known as the COCOMO Model, has been designed in 1981 by Barry Boehm, to give an estimate of number of man months it will take to develop a software product. The model also estimates the development schedule for the project in months and gives us a schedule distribution for all the major phases of a project.
The COCOMO models are developed for three classes of software projects. They are as follows:

- **Organic Projects** - These are relatively small and simple software projects in which small teams with good application experience work towards a set of less than rigid requirements.
- **Semi – Detached Projects –** These are intermediate size software projects in which teams with mixed experience levels must meet a mix of rigid and less than rigid requirements.
- **Embedded Projects –** These are software projects that must be developed within a set of tight hardware, software and operational constraints.

The E-HEALTH CARE MANAGEMENT COCOMO model for estimating the cost of the system. It is regarded as a semidetached system. Since this project is somewhat small, COCOMO estimate might be inaccurate. COCOMO is designed for use on system larger than 2 KDL. This model estimates the total effort in term of person-month of technical project staff. It does not include the cost of the secretarial staff that might be needed. The basic steps in this model are:

(1) Obtain an initial estimate of the development effort from the estimate of thousands of delivered lines of source code (KDL).

(2) Determine a set of multiplying factors from different attribute of the project.

(3) Adjust the effort estimate by multiplying the initial estimate with the entire multiplying factor.

The initial estimate is determined by an equation of the form used in the static, single-variable modes, using KDL as measure of size. To determine the initial effort Ei in person-months the equation used is of the type

Ei = a*(KDL) b

There are 15 different attributes, called cost driver attributes that determine the multiplying factors. These factors depend on product, computer, personal, and technology. All 15 factors are multiplied together to get the effort adjustment factor (EAF). The final cost estimate, E, is obtained by multiplying the initial estimate by the EAF.

E = EAF * Ei

Cost estimation

The size estimates for these in lines of code are.

5634=5.634 KDL

Category of project is semidetached so constraint of a & b a follows

A=3.0 & b =1.12

So, Ei= 3.0(5.634)1.12

= 3.0(6.932)

= 20.789

Rating of multiplier for different cost drivers.

COST DRIVER	RATING	VALUES
Software reliability	Very high	1.40
Data base size	High	1.08
Product complexity	High	1.15
Computer turnaround time	Very high	1.15
Analyst capability	High	0.86
Application experience	Nominal	1.00
Programmer capability	High	0.86
Programming language exp.	High	0.95
Modern prog. Practice	High	0.95
Use of software tools	Low	1.10
Development schedule	Nominal	1.00

The effort adjustment factor (EAF) is

EAF = 1.4*1.08*1.15*1.15*.86*1*.86*.95*.95*1.1*1

=1.46

The initial effort of the project is E = Ei*EAF

= 1.46*20.789

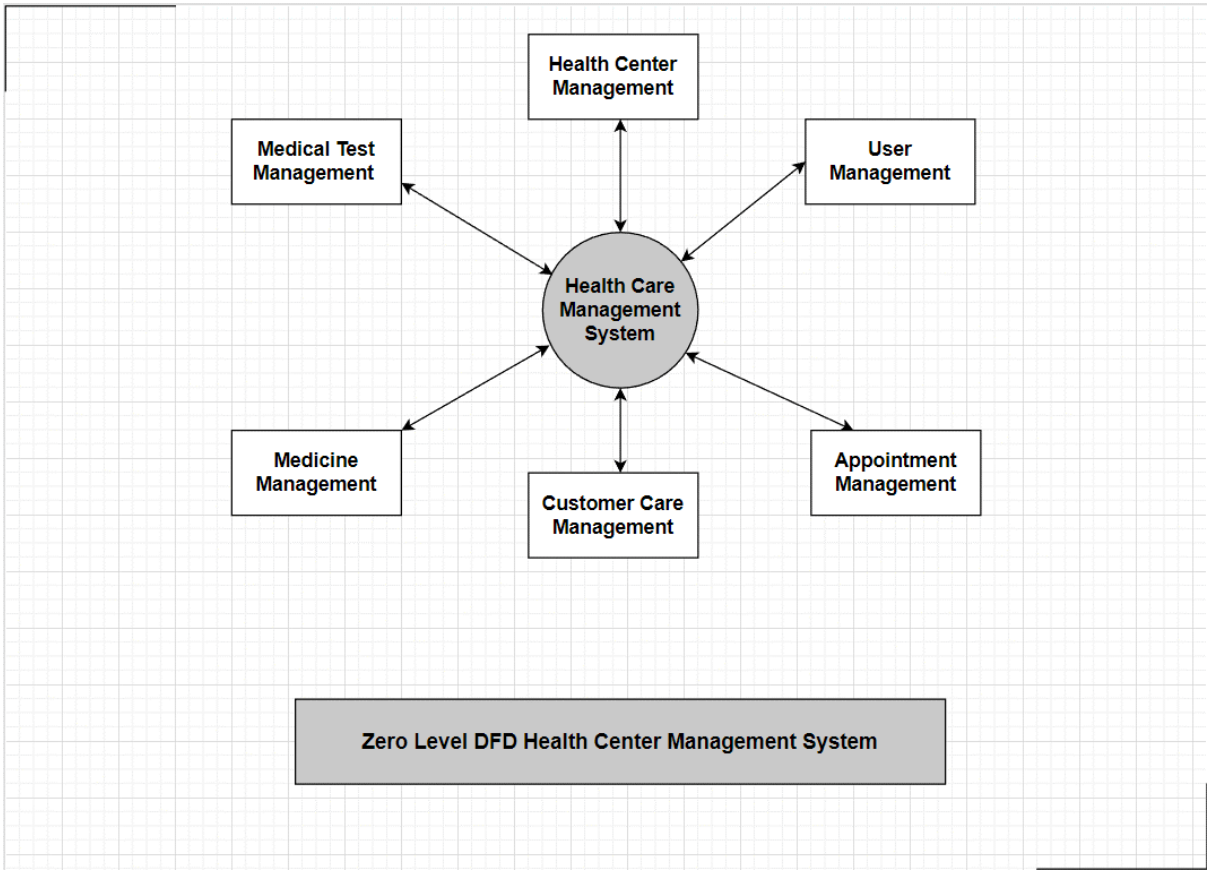
=30.52 PM

RESULT: Estimation of cost and assignment of job roles has been completed successfully.

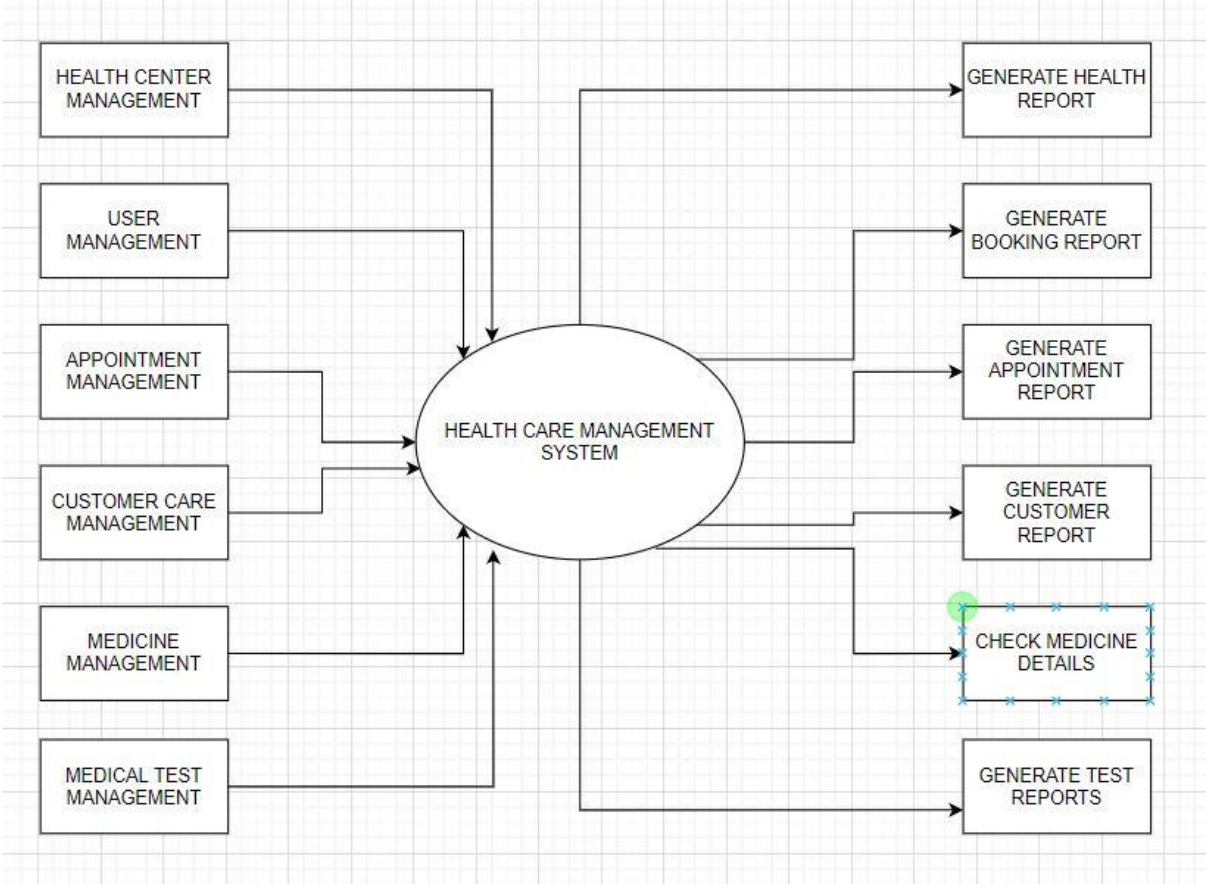
EXPERIMENT NO: 5

AIM: TO DESIGN DATA FLOW DIAGRAM FOR LEVEL 0,1,2

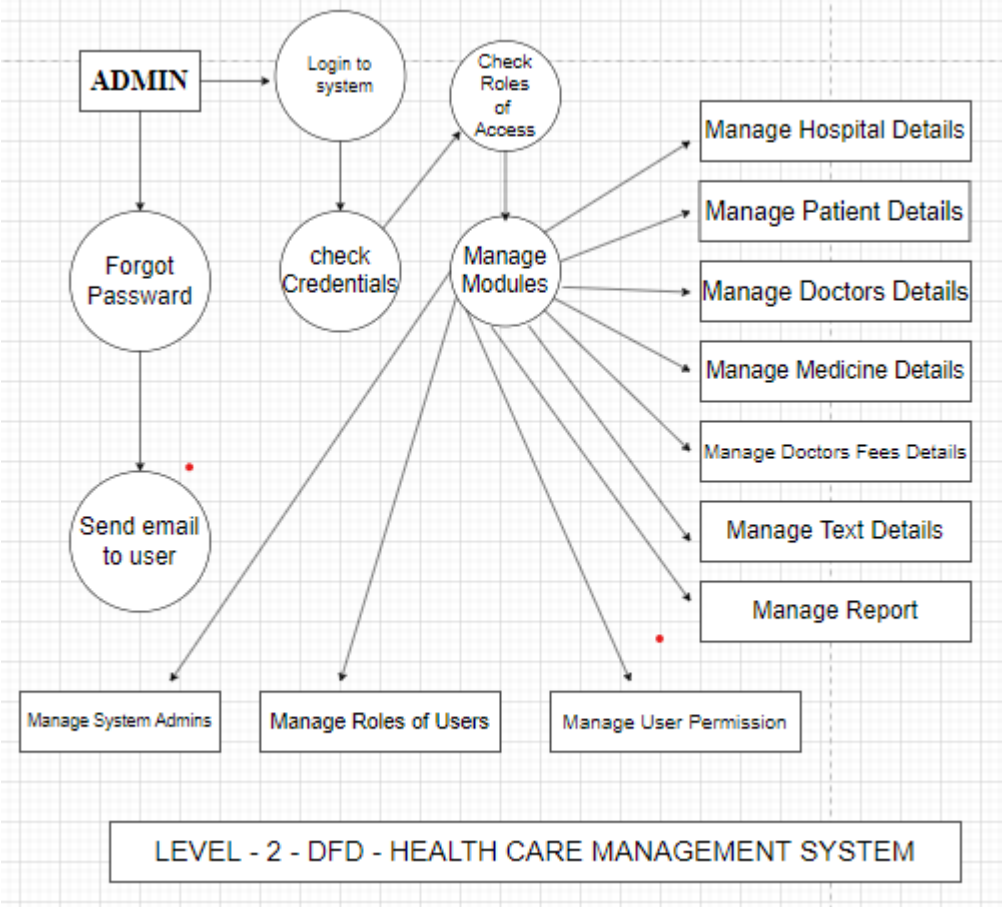
DATA FLOW DIAGRAM: LEVEL 0



DATA FLOW DIAGRAM: LEVEL-1



DATA FLOW DIAGRAM: LEVEL 2

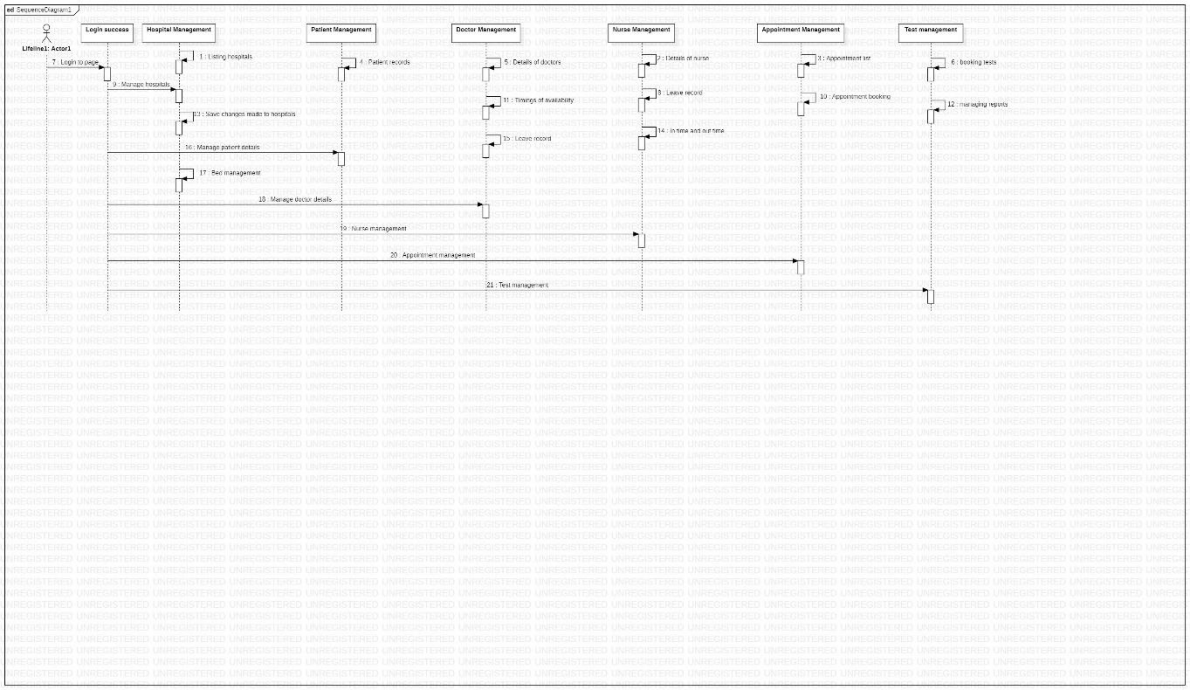


RESULT: Hence the data flow diagrams of levels 0,1,2 for E-health care management have been plotted.

EXPERIMENT NO: 6

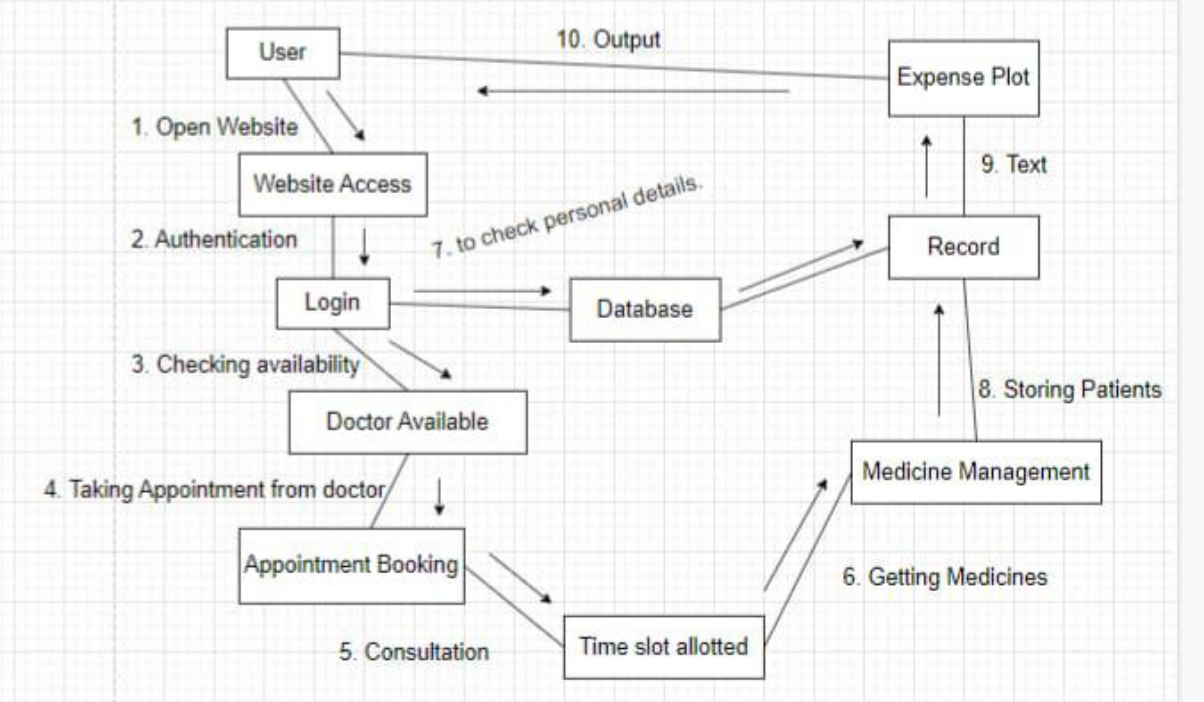
AIM: TO CONSTRUCT SEQUENCE AND COLLABORATION DIAGRAM

SEQUENCE DIAGRAM



1. Login: This case describes how a user logs into the E-Health Management System.
2. Registration (Account registration): This case describes how actor registers himself/ herself into the E-Health Management system.
3. Make profile: This case describes how users (Patients, doctors, Nurses, Student) make their profile into the E-Health Management system.
4. Book Appointment: This case describes how a patient can take appointment from his/her desired doctors.
5. View Prescription Reports (Medical history) this is a case in which patients can view their medical history (Previous prescription). Only registered patients can view their medical history and they can View Medical Tests In this case, patients can view his/her pathology test and their results.
6. Make Appointments slots (Create Schedule) this is a case in which a doctor can set Appointment slots to make sure his availability time in the clinic.

COLLABORATION DIAGRAM



1: User: The user opens the website and goes on to the authentication process.

2: Website Access: Login: This case describes how a user accesses the website in an user interface manner.

3: Login: This case describes how a user logs safely into the E-Health Management System with his credentials.

4: Doctor Available: Checking the availability of the doctor as per your desired schedule.

5: Appointment Booking: Booking a slot with your doctor and confirming the appointment.

6: Time slot allotted: Time has been allotted to the user.

7: Medicine Management: Getting the prescribed medicines from the pharmacy.

8: Record: Storing the patients record in the database.

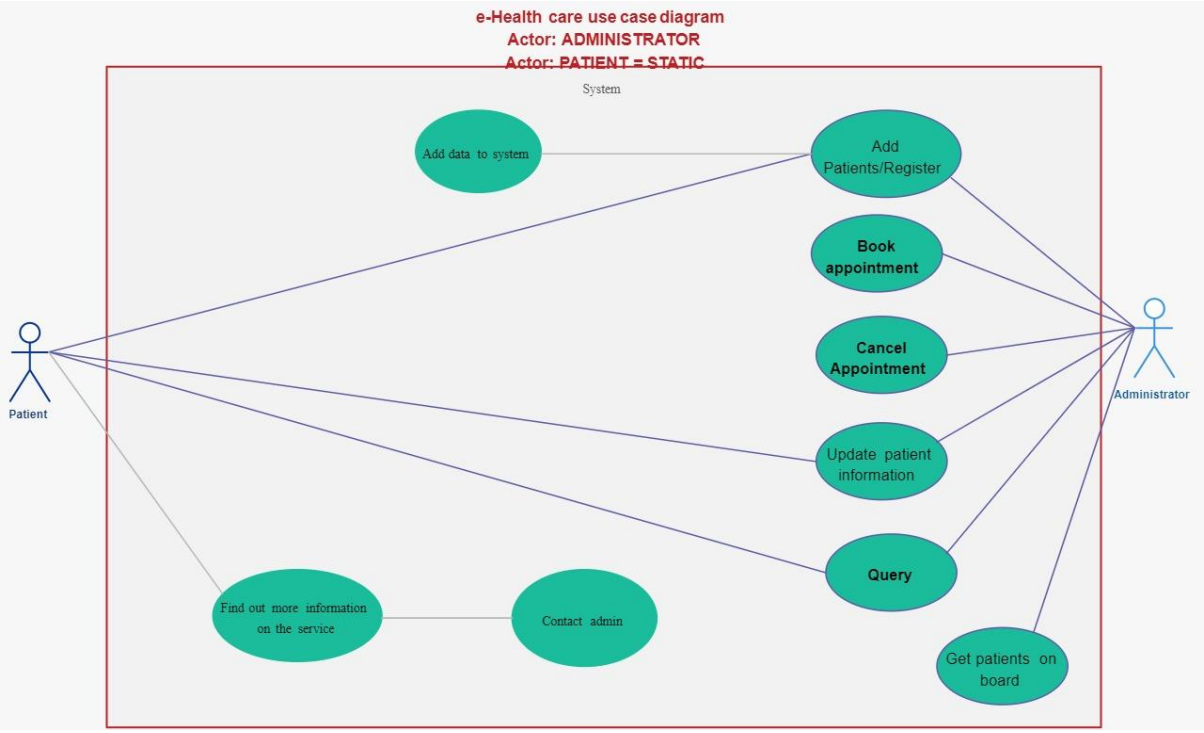
9: Expense Plot: Making a receipt and texting the user about his visit and getting his feedback.

RESULT: Construction of Sequence and collaboration diagram has been done successfully.

EXPERIMENT NO: 7

AIM: TO PREPARE USE CASE AND STATE CHART DIAGRAM

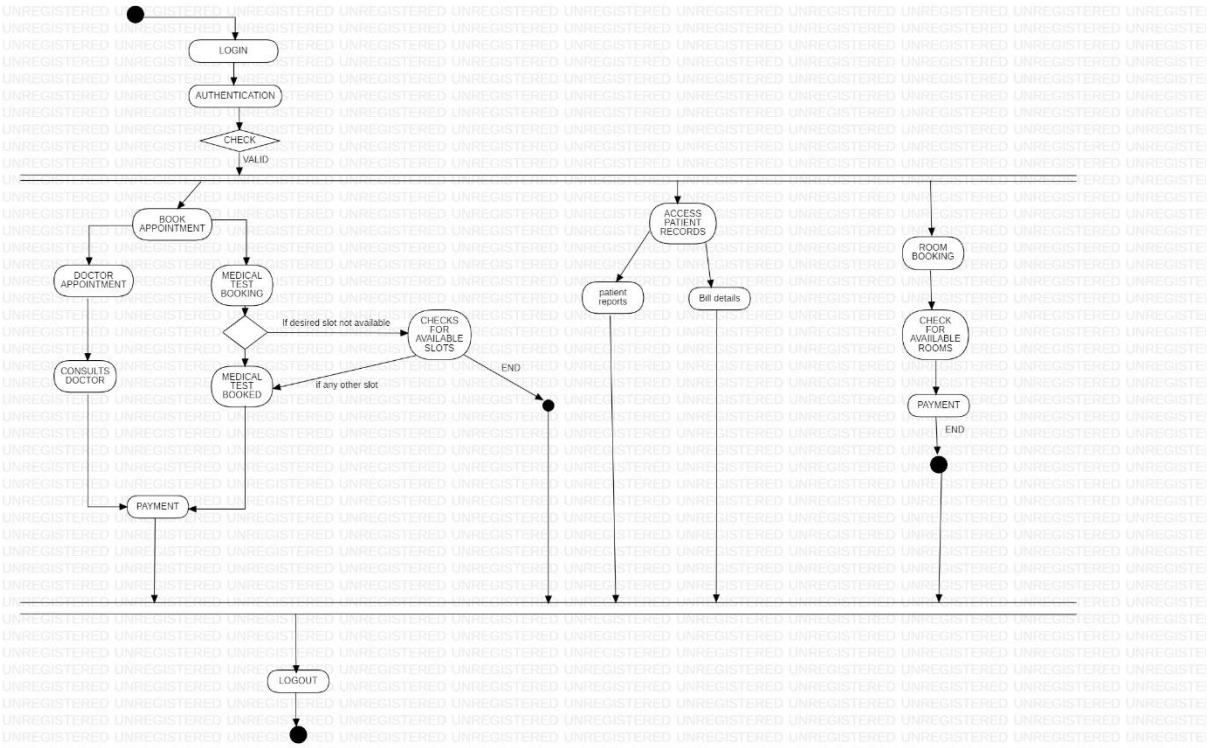
USE CASE DIAGRAM



This system is the subsystem of e-health care management system. The actors are patients and administrators. The patient is concerned with multiple use cases like login, check for availability of doctor, book appointment/beds/tests etc.

The UML use case diagram is designed to showcase the systematic process of the working of e-health care management system for users.

STATE CHART DIAGRAM



The e-health care management system project state chart diagram potential features:

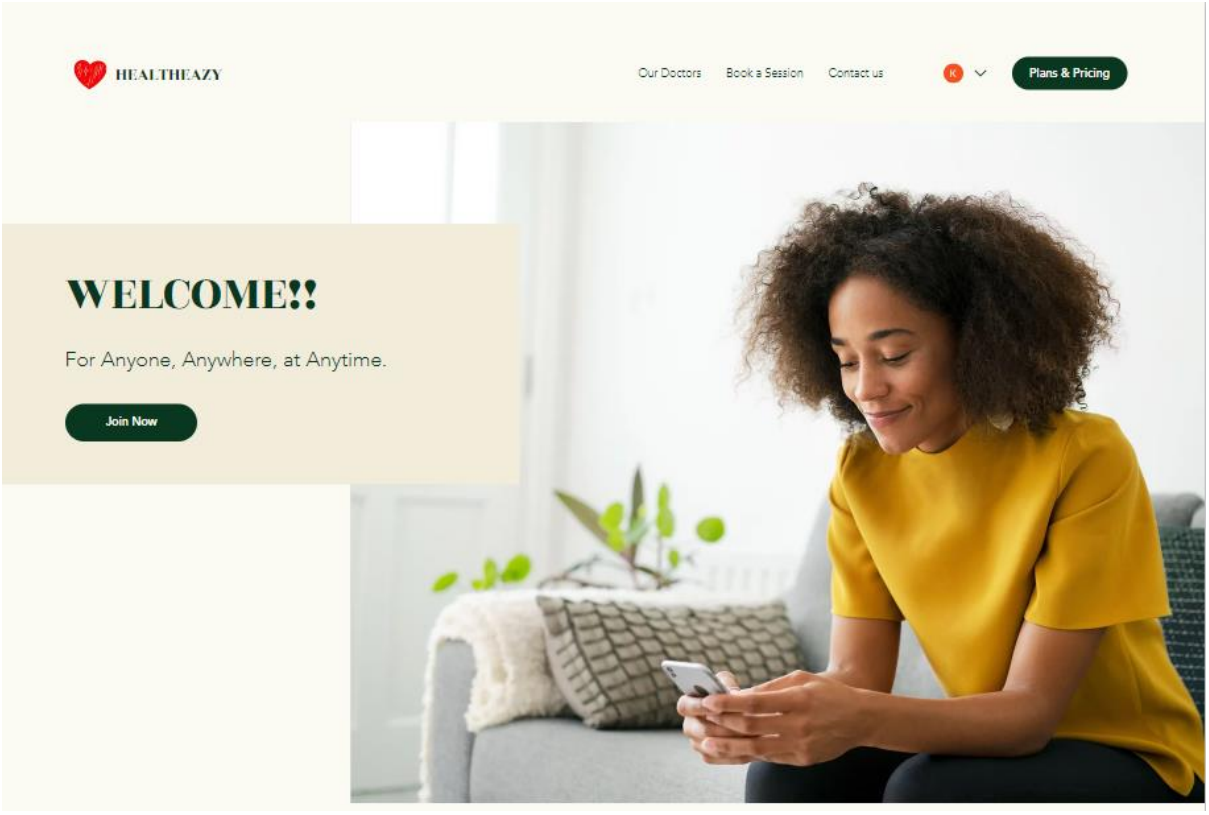
- manage patient's records
- book doctor appointments
- book medical test reports
- book hospital beds

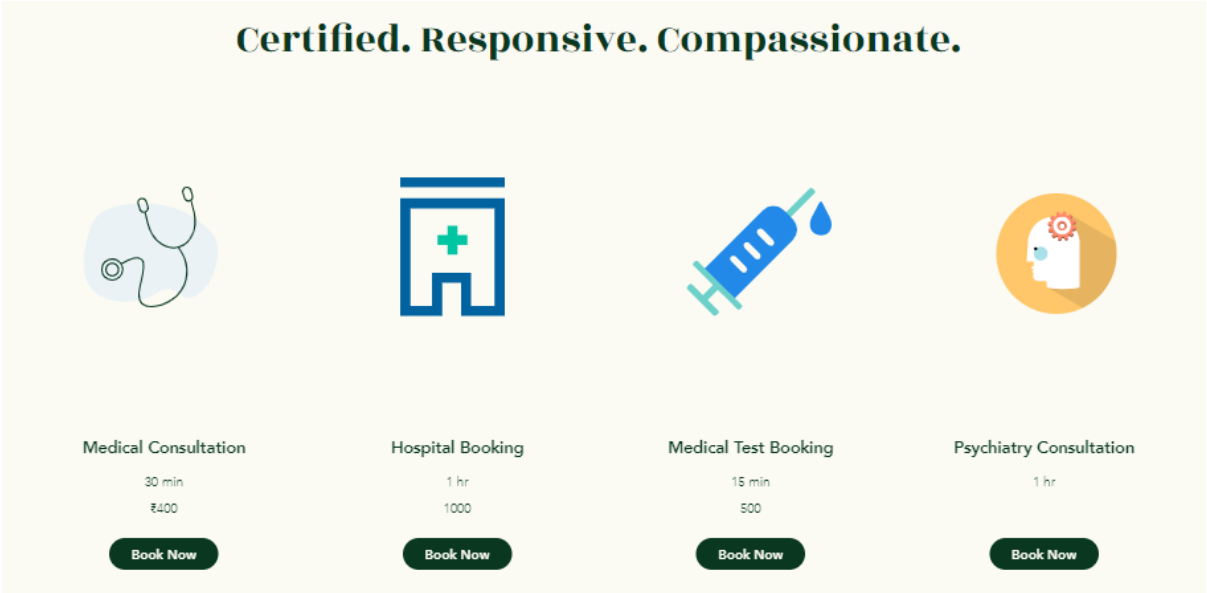
To define the flow of the system first you must determine the possible features of the e-health care management system by producing a state chart diagram. As a result, you can design the blueprint or core of the system's functionality.

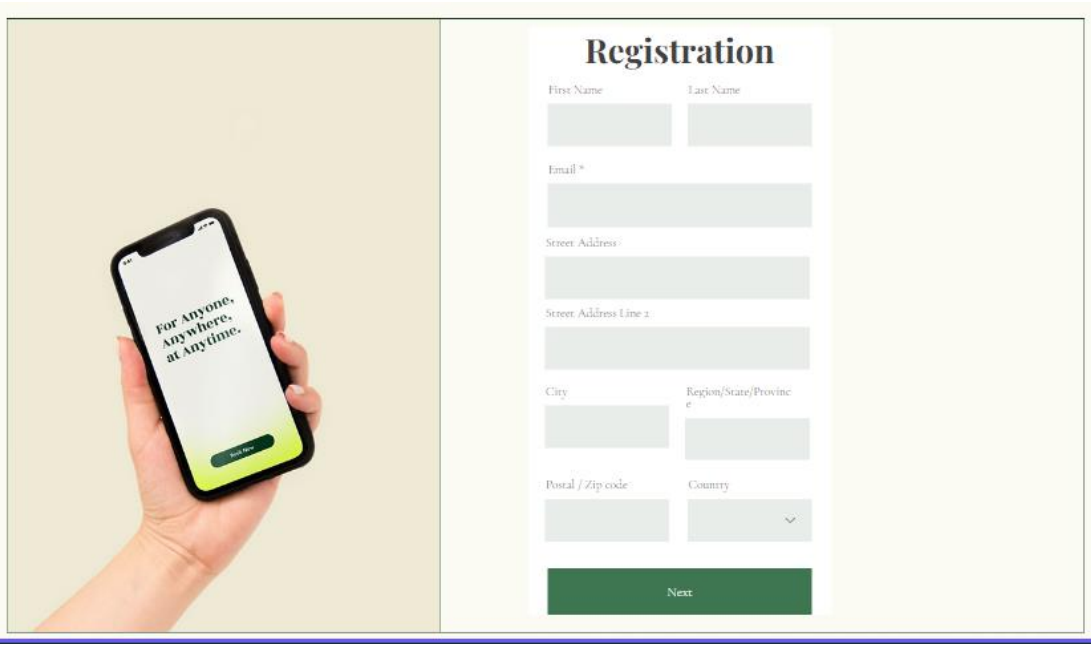
RESULT: Preparation of use case diagram and state chart diagram has been done successfull

EXPERIMENT NO: 8

AIM: TO DESIGN USER INTERFACE







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Description:

We will describe the implementation of E-Health Management System. This phase will reveal the process of coding and actual production of E-Health Management System.

Index Page GUI Registration Page Log in Page.

The Registration page of my E-Health Management System Which user can use to get them registered with E-Health Management System as patient.

The doctor panel of my E-Health Management System.

The profile of doctor. In this page, doctor can change his profile picture and details.

The web page where doctor has to select particular date to create a schedule for his availability

The web page where doctor will be shown all the possible slots which he has to select to create schedule according his availability.

The web page where doctor has to select today date to check all the booked appointments by patients. Then this web page will show all booked appointments

The web page where doctor will prescribe to patients.

RESULT: Designing of user interface has been done successfully.

EXPERIMENT NO: 9

AIM: TO PREPARE MANUAL TEST CASES

Module: LOGIN		
TEST CASE	TEST STEPS	EXPECTED RESULTS
1.	Verify the username and password for getting administrator authentication.	N/A
2.	Username- Valid, Password- Valid	Gives user authentication and shows the admin page.
3.	Username- Valid, Password- Invalid, Blank	Displays error message stating incorrect username or password.
4.	Username- Invalid, Blank, Password- Valid	Displays error message stating incorrect username or password.
5.	Username- Invalid, Blank, Password- Invalid, Blank	Displays error message stating incorrect username or password.

MODULE: BILLS

Test Case:	Test Steps:	Expected Results:
1.	Select category, payment method, date and value. Paid=yes/no. Click on: “save and add another” or “save”.	Display the bills list with the mentioned date, payment method and value with the status in the bills page. If not paid then displays the value in the home page with the details. Also updates the Total value, Paid value and the Remaining value.
2.	Add/Delete/Change a bill category	The category will be added/deleted/changed to (or in) the bill category options.
3.	Add/delete/change a Payment method	The method will be added/deleted/changed to (or in) the Payment method category options.

MODULE: PAYROLL

Test Case:	Test Steps:	Expected Results:
1.	Select category, Payment method, person, date and value. Paid=yes/no. Click on: “save and add another” or “save”.	Display the payroll list with the mentioned date, payment method and value with the status in the payroll page. If not paid then displays the value in the home page with the details. Also updates the Total value, Paid value and the Remaining value.
2.	Add/Delete/Change a payroll category	The category will be added/deleted/changed to (or in) the payroll category options.
3.	Add/delete/change a Payment method	The method will be added/deleted/changed to (or in) the Payment method category options.
4.	Add/delete/change a person	The person will be added/deleted/changed to (or in) the Payment method category options.

RESULT: Test cases have been implemented.

EXPERIMENT NO: 10

AIM: IMPLEMENTATION WITH LOGIN VALIDATION

MODULE IMPLEMENTATION

Sample Codes:

Doctor REGESTRATION

```
elif e==1:
    while error==1:
        i=input("\nEnter your ID - ")
        p=getpass.getpass("Enter your Password - ")
        cursor.execute("""select count(d_id) from doctor where d_id=(?)""",(i,))
        if cursor.fetchone()[0]==1:
            cursor.execute("""select count(password) from doctor where password=?""",(p,))
            if cursor.fetchone()[0]==1:
                print("\nSign in successful!")
                screen_clear()
                error=0
                e=0
                r=1
```

DOCTOR LOGIN

```
while e!=0:
    e=int(input("1. Sign In\n2. Create a New Doctor Account\n"))
    if e==2:
        did=int(input('\nEnter id - '))
        dnf=input('Enter first name - ')
        dnl=input('Enter last name - ')
        pas=getpass.getpass('Enter password - ')
        spec=input('Enter speciality - ')
        shf=input('Enter working shift - ')
        ph=int(input('Enter phone number - '))
        cursor.execute("""insert into doctor values(?,?,?,?,?,?,?)""",(did,dnf,dnl,pas,spec,shf,ph))
        screen_clear()
```

PATIENT REGESTRATION AND LOGIN

```
while r!=0:
   print("\n1. View Patient details\n2. Add a New Patient\n3. Delete Patient Details\n0. Exit")
   r=int(input())
   if r==1:
      access=input("\nEnter Patient ID:- ")
      cursor.execute("""select count(*) from patient where p_id=(?)""",(access,))
      if cursor.fetchone()[0]!=0:
         cursor.execute("""select * from patient where p_id=(?)""",(access,))
         print("\nPatient Details - ")
         for row in cursor.fetchall():
            print("Id: ", row[0])
            print("First Name: ", row[1])
            print("Last Name: ", row[2])
            print("City: ", row[3])
            print("Date of Birth: ", row[4])
            print("Age: ", row[5])
            print("Date of Admission: ", row[6])
```

RESULT: Implementation of Login has been done successfully.

EXPERIMENT NO: 11

AIM: Implementation with functionalities

MEDICAL CONSULTATION & HOSPITAL BOOKING

```
import getpass
import sqlite3
connection=sqlite3.connect('hospital.db')
cursor=connection.cursor()
error=1
from os import system, name
def screen_clear():
   if name == 'nt':
      _ = system('cls')
   else:
      _ = system('clear')
cursor.execute("""select count(name) from sqlite_master where type='table' and name='doctor'""")
if cursor.fetchone()[0]==0:
    cursor.execute("""CREATE TABLE doctor (
    d_id number primary key,
    dnamedfirst VARCHAR2(20),
    dnamedlast VARCHAR2(30),
    password varchar2(20) not null,
    speciality varchar2(40) not null,
    shift varchar2(10) not null,
    phone number(10) not null);""")
cursor.execute("""select count(name) from sqlite_master where type='table' and name='patient'""")
```

```
if cursor.fetchone()[0]==0:
    cursor.execute("""CREATE TABLE patient (
    p_id number primary key,
    pfirst VARCHAR2(20),
    pdlast VARCHAR2(30),
    City varchar2(20) not null,
    DOB date not null,
    age number not null,
    DOA date not null,
    number number(10) not null);""")
    cursor.execute("""CREATE TABLE virus (
    p_id number not null,
    dname VARCHAR2(20) primary key,
    vname VARCHAR2(20),
    treatment VARCHAR2(50),
    symptoms varchar2(50) not null);""")
    cursor.execute("""CREATE TABLE bacteria (
    p_id number not null,
    dname VARCHAR2(20) primary key,
    bname VARCHAR2(20),
    treatment VARCHAR2(50),
    symptoms varchar2(50) not null);""")
    cursor.execute("""CREATE TABLE injury (
    p_id number not null,
    iname VARCHAR2(20) primary key,
    idiagnosis VARCHAR2(50),
    type varchar2(50) not null);""")
```

```
    cursor.execute("""insert into patient values(101,'Mohit','Nayak','Bangalore','15-March-2001',18,'08-March-2020',9078435952)""")
    cursor.execute("""insert into patient values(102,'Anikiat','Saraf','Kolkata','22-Dec-2000','19','15-Feb-2020',9674825476)""")
    cursor.execute("""insert into patient values(103,'Rishank','Pratik','Orissa','22-Dec-2001','18','19-Nov-2015',9117854569)""")
    cursor.execute("""insert into patient values(104,'Risav','Jana','Nepal','06-Jan-2001',18,'25-Oct-2010',7854963284)""")
    cursor.execute("""insert into patient values(105,'Wilson','Vidyut','Mumbai','23-Nov-2001',18,'23-Nov-2005',7854129645)""")
    cursor.execute("""insert into patient values(106,'Dinesh','Sharma','Rajasthan','23-Feb-2000',20,'23-Feb-2000',8476423858)""")
    cursor.execute("""insert into virus values(103,'Ebola','Ebov','Oxygen Therapy, IV Fluids','Muscle Pain, Fever, Bleeding')""")
    cursor.execute("""insert into virus values(105,'Measles','Paramyxo','Vitamin A','Cough, Skin Rash')""")
    cursor.execute("""insert into bacteria values(101,'TB','Mycobacterium','Antibiotics','Cough and Sneezes')""")
    cursor.execute("""insert into bacteria values(106,'Cholera','Vibrio','IV Fluids, Antibiotics','Seizures, Diarrhoea')""")
    cursor.execute("""insert into injury values(102,'Hair line Fracture','Plaster, Pain Killer','Toe Fracture')""")
    cursor.execute("""insert into injury values(104,'bullet wound','Removal of Bullet','Wound')""")
    print("Databse created successfully")

```

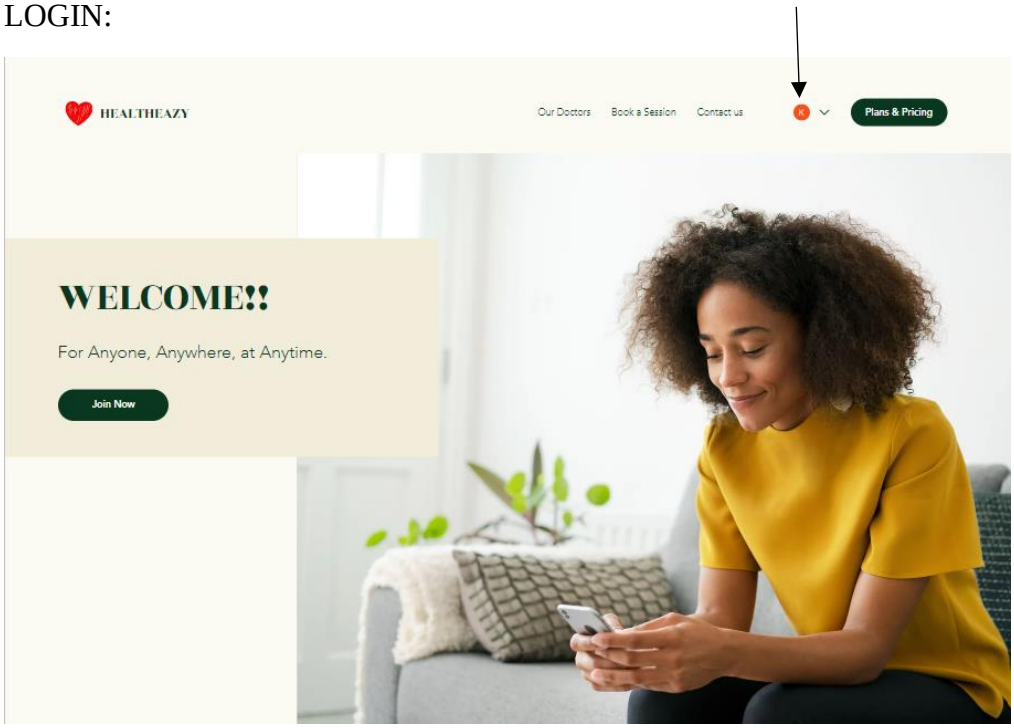
```
else:
    e=1
    while e!=0:
        e=int(input("1. Sign In\n2. Create a New Doctor Account\n"))
        if e==2:
            did=int(input('\nEnter id - '))
            dnf=input('Enter first name - ')
            dnl=input('Enter last name - ')
            pas=getpass.getpass('Enter password - ')
            spec=input('Enter speciality - ')
            shf=input('Enter working shift - ')
            ph=int(input('Enter phone number - '))
            cursor.execute("""insert into doctor values(?,?,?,?,?,?,?)""",(did,dnf,dnl,pas,spec,shf,ph))
            screen_clear()
            e=1
        elif e==1:
            while error==1:
                i=input("\nEnter your ID - ")
                p=getpass.getpass("Enter your Password - ")
                cursor.execute("""select count(d_id) from doctor where d_id=(?)""",(i,))
                if cursor.fetchone()[0]==1:
                    cursor.execute("""select count(password) from doctor where password=?""",(p,))
                    if cursor.fetchone()[0]==1:
                        print("\nSign in successful!")
                        screen_clear()
                        error=0
                        e=0
                        r=1
                        cursor.execute("""select d_id,dnamedfirst,dnamedlast,speciality,shift,phone from doctor where d_id=(?)""",(i,))
                        for row in cursor.fetchall():
                            print("ID -",row[0],"  Name -",row[1], row[2],"  Speciality -",row[3],"\nShift -",row[4],"  Phone Number -",row[5])
                        while r!=0:
                            print("\n1. View Patient details\n2. Add a New Patient\n3. Delete Patient Details\n0. Exit")
                            r=int(input())
```

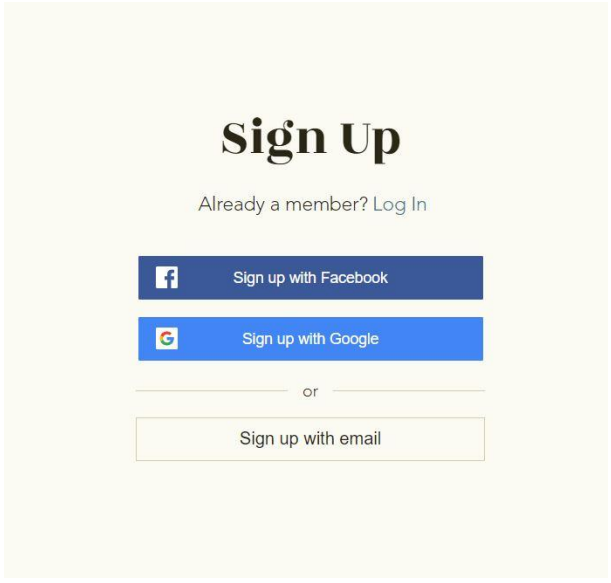
RESULT: Implementation of functionalities has been done successfully.

EXPERIMENT NO: 12

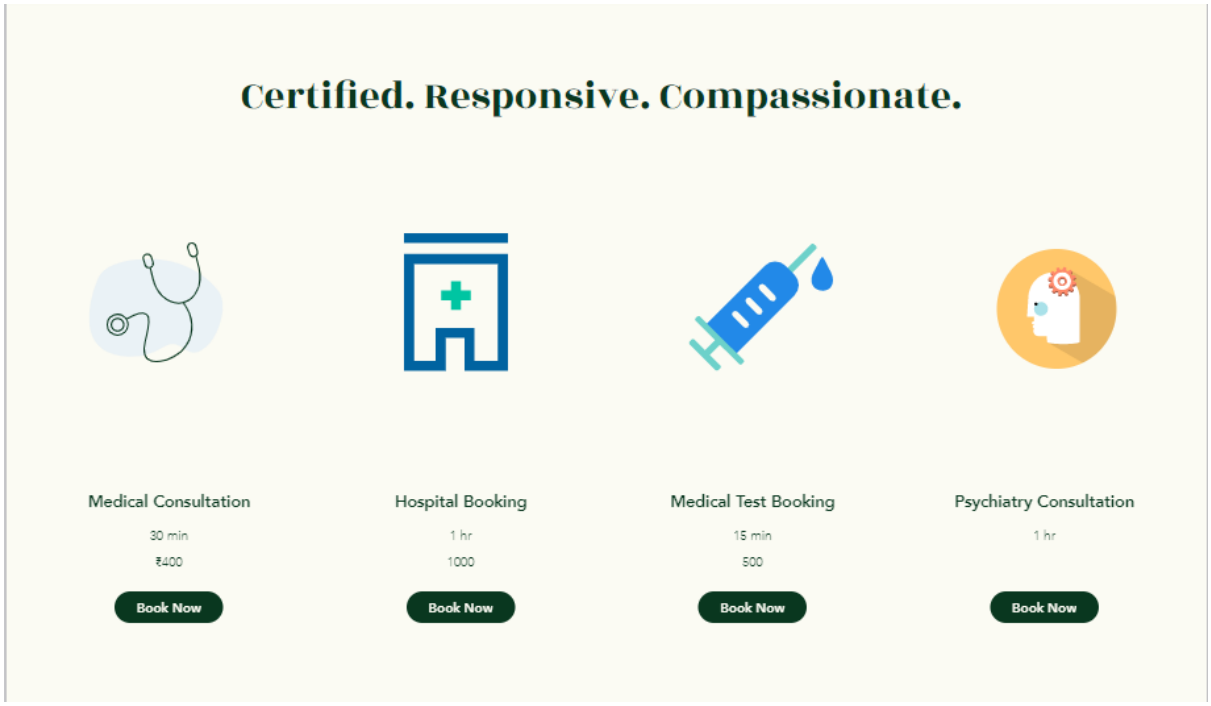
AIM: ARCHITECTURE/DESIGN/FRAMEWORK/IMPLEMENTATION

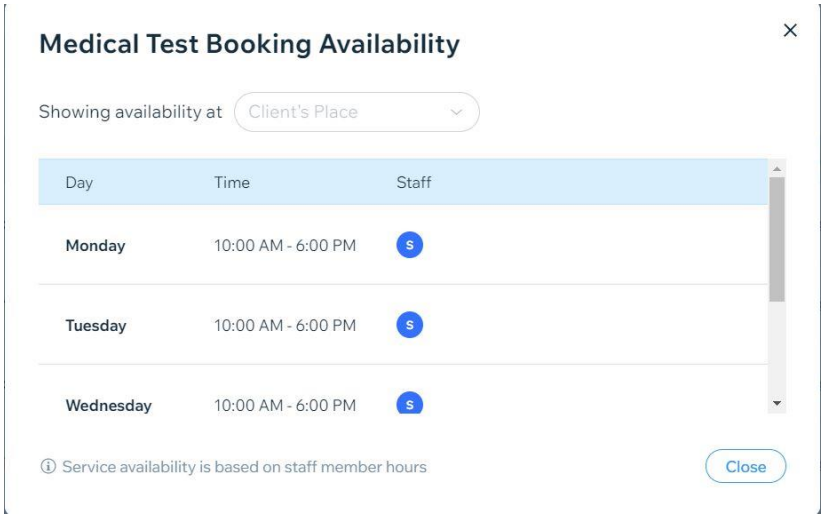
LOGIN:

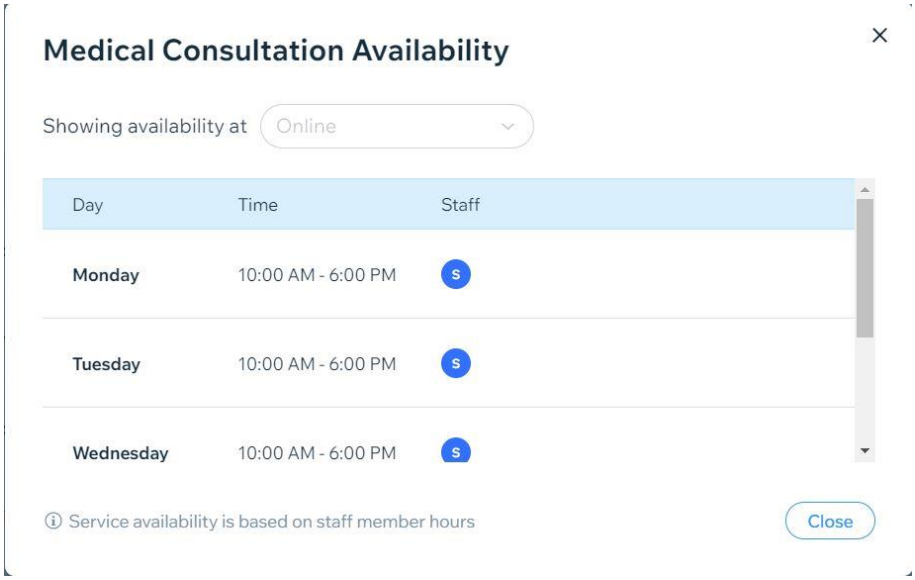




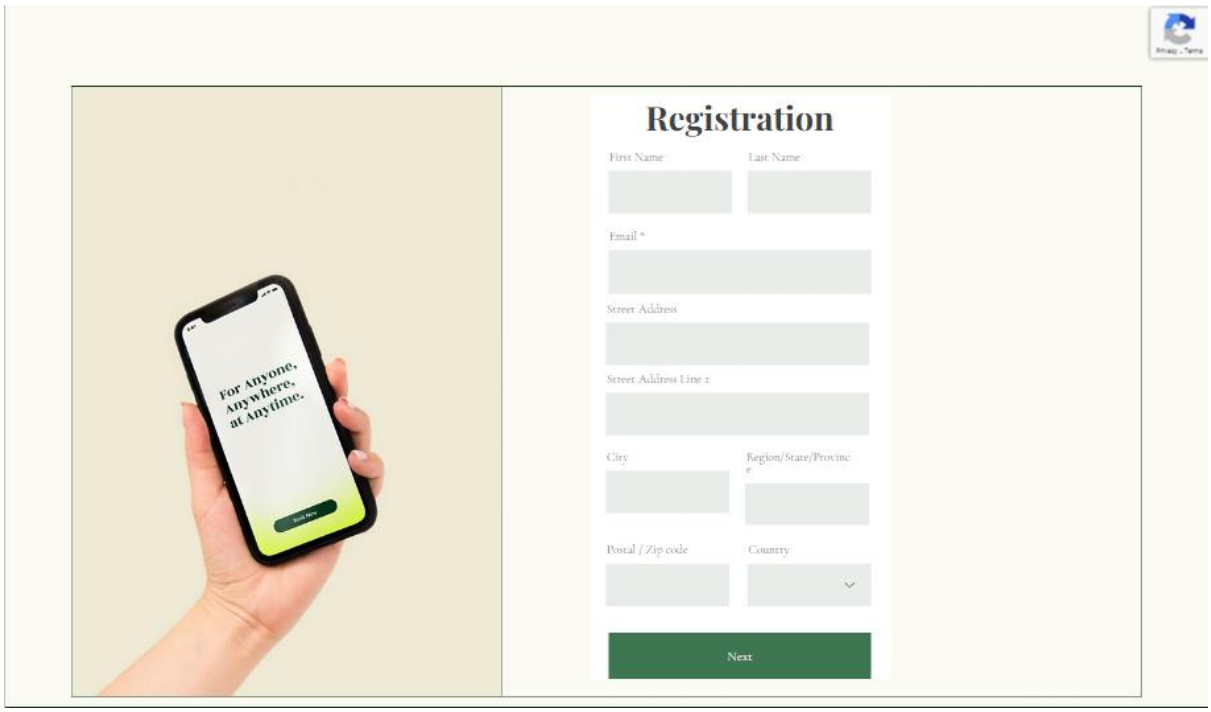
FUNCTIONALITY:



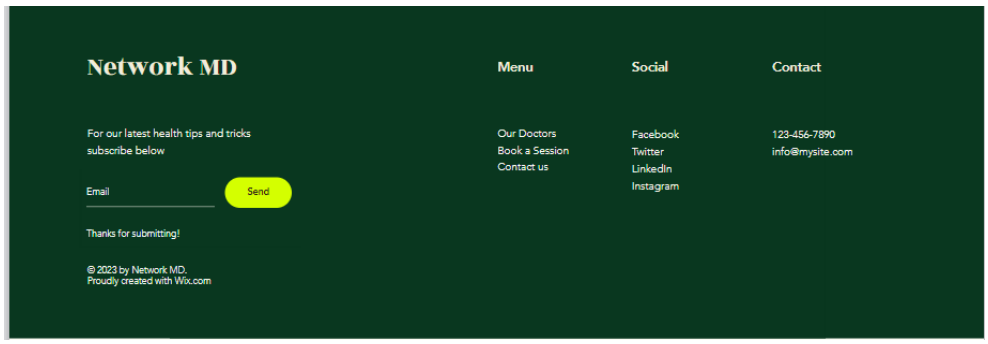




REGESTRATION:



CONTACT:



RESULT: Implementation has been done successfully.