# Sugar-Saver: A Comprehensive Diabetes Management Solution

| First name | Last name | IIT Email | Online or Remote Students? (Y or N) |
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## 1. Introduction

"Sugar-Saver: A Comprehensive Diabetes Management Solution" is a project driven by a deep sense of social responsibility and the urgent need to address the diabetes epidemic affecting millions of people worldwide. In this introduction, we provide the background of our application and the motivations that underpin our commitment to its development.

## 2. Requirement Analysis

User Authentication & Role-Based Access Control:
Create a secure login system for different user roles: Admin, Doctor, and Patient using Java, HTML, CSS, and JavaScript.

### Admin Privileges:
Allow Admin access to view and manage records of Doctors and Patients.
Provide Admin with the capability to delete records when necessary.

### Doctor Functions:
Enable Doctors to access and review patient records.
Allow Doctors to create and suggest personalized diet plans based on patient needs and medical history.

### Patient Features:
Enable Patients to input their medical records securely.
Provide Patients with the ability to view diet plans suggested by their respective Doctors.

### Technology Stack:
Utilize NetBeans as the development environment.
Implement an Oracle database to store user credentials, medical records, and related information.

### Front-end and Back-end Technologies:
Use Java for server-side development.
Employ HTML, CSS, and JavaScript for the user interface design and interactivity.

By implementing these functionalities and technologies, the system will cater to the specific needs of different user roles while ensuring secure access and management of medical records.

## 3. Application Design

Sugar Saver is an online platform designed to accommodate three distinct user types: Admin, Doctor, and Patient, each with unique login credentials and specific functionalities:

***Admin –***
**DELETE**: Admins can remove doctor or patient records and other administrative information as necessary.
**SELECT**: Administrators have full access to view and retrieve doctor and patient records, as well as other relevant administrative data stored in the system.

***Doctors -***
**INSERT**: Doctors can't directly insert records, but they can update patient medical details, suggest diet plans, and add medical insights to existing records.
**UPDATE**: Doctors are able to update patient medical information, modify suggested diet plans, and provide updated medical insights for specific patients.
**SELECT**: Doctors can view patient medical details, retrieve records for analysis, access diet plans, and review FAQ sections

***Patient/Users –***
**INSERT**: Patients can upload and update their medical details.
**UPDATE**: Patients can modify their own medical information and update their health-related data as needed.
**SELECT**: Patients can access their medical details, view suggested diet plans provided by doctors, and read FAQ sections related to diabetes management.


## 4. DB Design & DB operations

For sugar saver we have created 5 tables Admin, Patient, Doctor, Health/Medical records and Dietplan
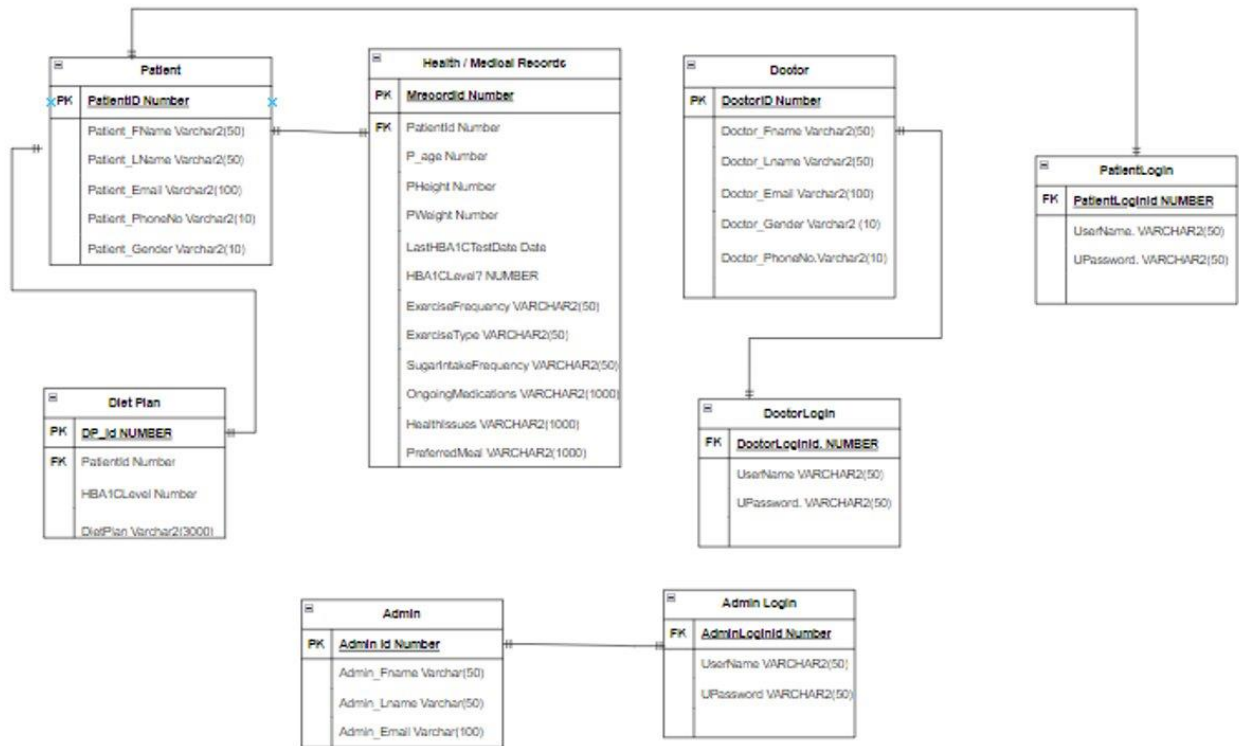- **Admin** (AdminId*, Admin_Fname, Admin_Lname, Admin_Email, Username, Password)
- **Patient** (PatientId*, Patient_FName, Patient_LName, Patient_Email, Patient_PhoneNo, Patient_Gender, Username, Password)
- **Doctor** (DoctorId*, Doctor_FName, Doctor_LName, Doctor_Email, Doctor_PhoneNo, Doctor_Gender, Username, Password)
- **MedicalRecords** (MRecordId*, PatientId, P_Age, PHeight, PWeight, LastHBA1CTestDate, HBA1CLevel, ExerciseFrequency, ExerciseType, SugarIntakeFrequency, OngoingMedications, HealthIssues, PreferredMeal)
- **DietPlan** (DP_id*, PatientId , DietPlan, HBA1CLevel)

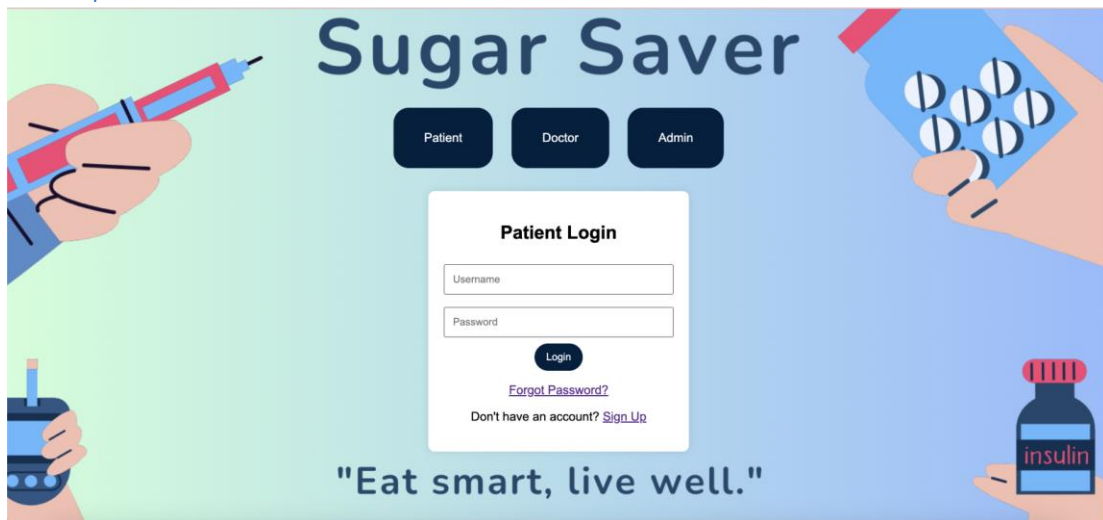We will be covering below data base operations as per our users:
Admin – Select and Delete
Doctor – Insert, Update and Select
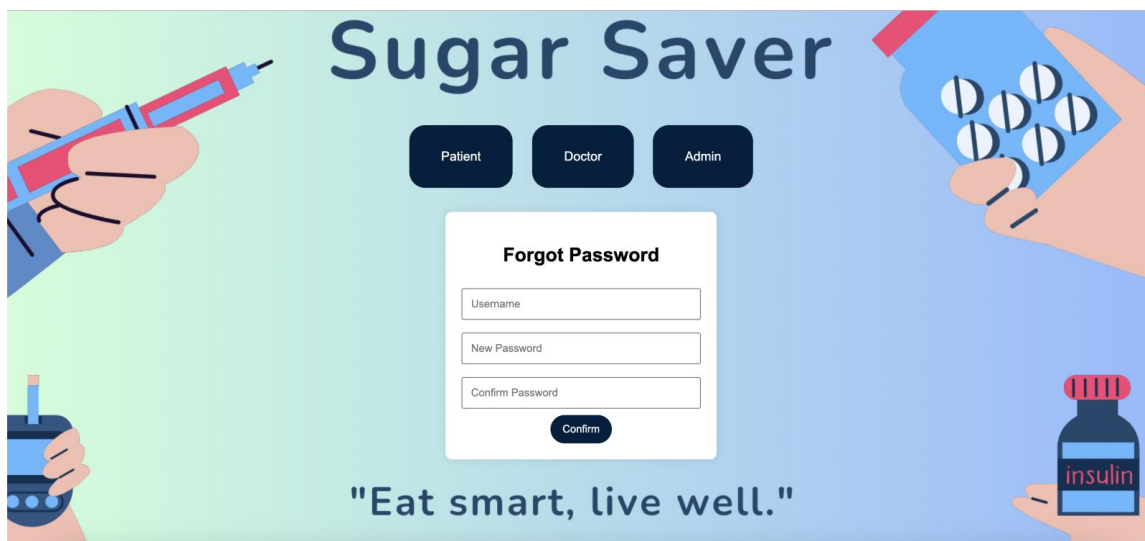Patient – Insert, Update and Select

**Patient**
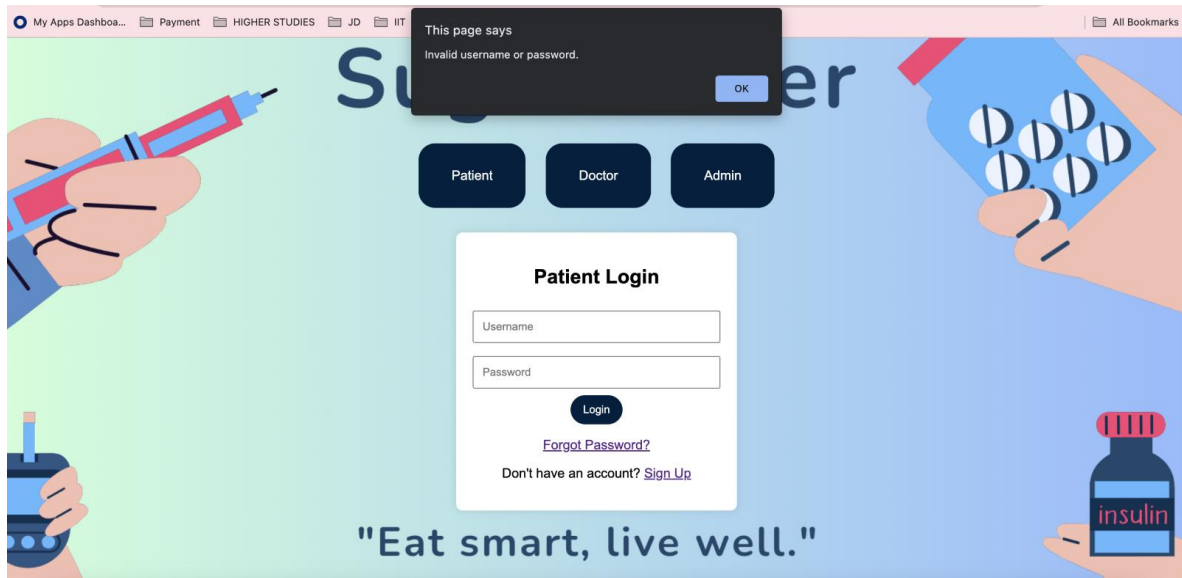| | |
|---|---|
| PK | PatientID Number |
| | Patient_FName Varchar2(50) |
| | Patient_LName Varchar2(50) |
| | Patient_Email Varchar2(100) |
| | Patient_PhoneNo Varchar2(10) |
| | Patient_Gender Varchar2(10) |

**Health / Medical Records**
| | |
|---|---|
| PK | Mrecordid Number |
| FK | PatientId Number |
| | P_age Number |
| | PHeight Number |
| | PWeight Number |
| | LastHBA1CTestDate Date |
| | HBA1CLevel7 NUMBER |
| | ExerciseFrequency VARCHAR2(50) |
| | ExerciseType VARCHAR2(50) |
| | SugarIntakeFrequency VARCHAR2(50) |
| | OngoingMedications VARCHAR2(1000) |
| | HealthIssues VARCHAR2(1000) |
| | PreferredMeal VARCHAR2(1000) |

**Doctor**
| | |
|---|---|
| PK | DoctorID Number |
| | Doctor_Fname Varchar2(50) |
| | Doctor_Lname Varchar2(50) |
| | Doctor_Email Varchar2(100) |
| | Doctor_Gender Varchar2 (10) |
| | Doctor_PhoneNo Varchar2(10) |

**PatientLogin**
| | |
|---|---|
| FK | PatientLoginid NUMBER |
| | UserName. VARCHAR2(50) |
| | UPassword. VARCHAR2(50) |

**Diet Plan**
| | |
|---|---|
| PK | DP_Id NUMBER |
| FK | PatientId Number |
| | HBA1CLevel Number |
| | DietPlan Varchar2(3000) |

**DoctorLogin**
| | |
|---|---|
| FK | DoctorLoginid. NUMBER |
| | UserName VARCHAR2(50) |
| | UPassword. VARCHAR2(50) |

**Admin**
| | |
|---|---|
| PK | Admin Id Number |
| | Admin_Fname Varchar(50) |
| | Admin_Lname Varchar(50) |
| | Admin_Email Varchar(100) |

**Admin Login**
| | |
|---|---|
| FK | AdminLoginid Number |
| | UserName VARCHAR2(50) |
| | UPassword VARCHAR2(50) |

## 5. Snapshots



1.2  Login page

1.3 Sign up page



1.4 Forget Password Page

1.5 Alert message for invalid Username and Password



1.6 Patient home page

1.7 Patient Personal Details



1.7 Patient Medical Records

1.8 Doctor Personal Details
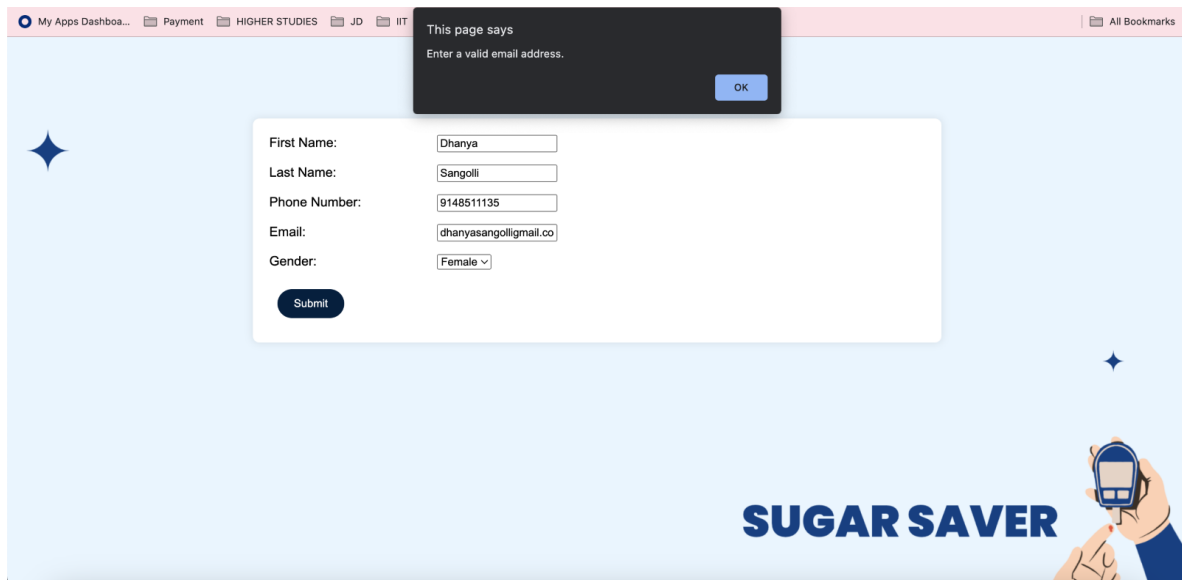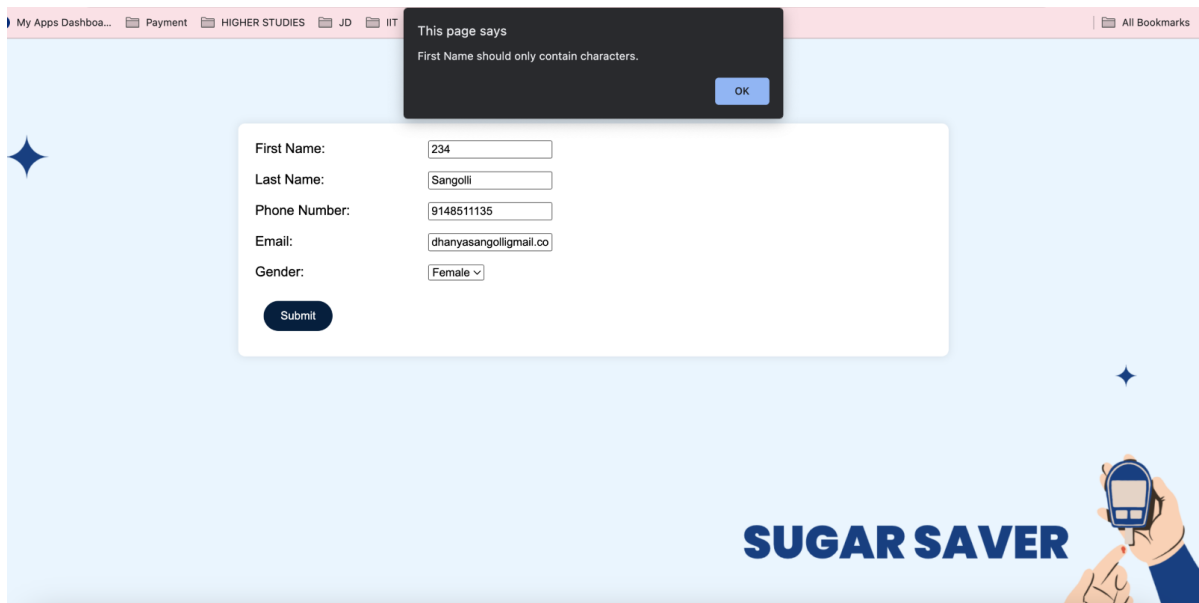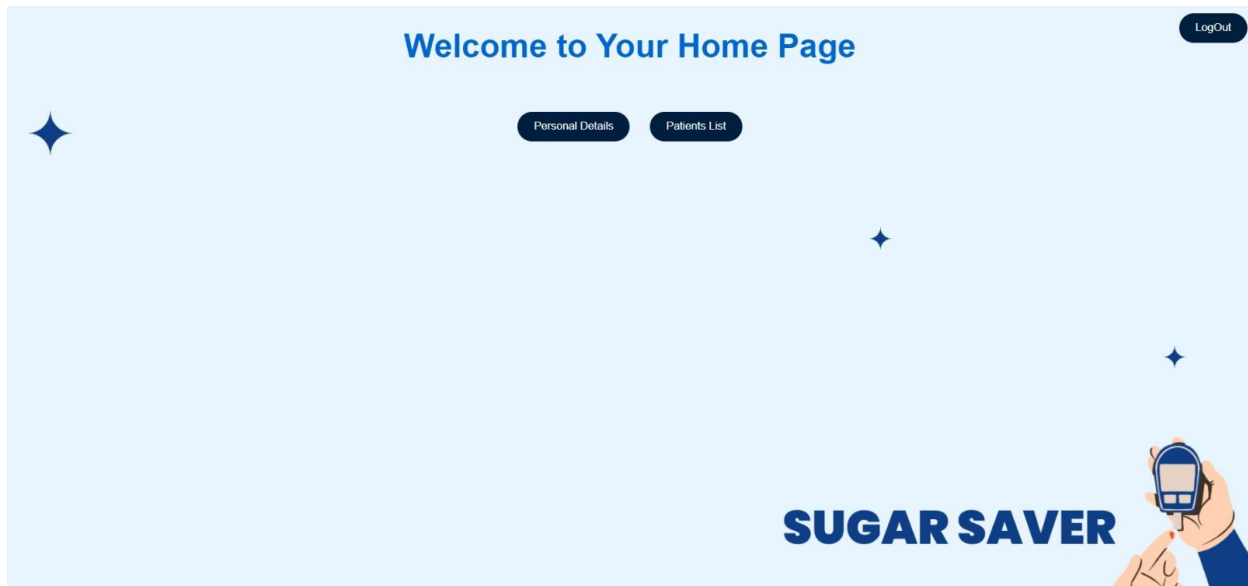


1.9 Validation for the Phone number

## 2. Validation for email address



## 2.1 Validation for First name and Last Name

2.2 Doctor Home Page



2.3 Doctor Personal detail page

2.4 Patients List



2.5 Suggest Diet page

2.6 Admin Home page



2.7 Admin personal details

2.8 List of patients where admin can update and delete patient records



2.9 List of doctors where admin can update and delete patient records



| # | ADMINID | ADMIN_FNAME | ADMIN_LNAME | ADMIN_EMAIL |
|---|---------|-------------|-------------|-------------|
| 1 | 1 Sahil | | Raorane | sahilraorane221@gmail.com |

3 Admin personal details table

| # | ADMINLOGINID | USERNAME | UPASSWORD |
|---|--------------|----------|-----------|
| 1 | 1 sa | | pass |

## 3.1 Admin login details table

| # | DP_ID | PATIENTID | DIETPLAN |
|---|---|---|---|
| 1 | 3 | 3 | high fiber |
| 2 | 1 | 1 | High Fiber |
| 3 | 2 | 2 | High Protein |
| 4 | 4 | 4 | High Fiber |
| 5 | 5 | 5 | Low Carb |
| 6 | 6 | 6 | High Protein |
| 7 | 7 | 7 | Low Carb |
| 8 | 8 | 8 | Low suger intake |
| 9 | 9 | 9 | High Protein |
| 10 | 10 | 10 | Low Carb |

## 3.2 DietPlan Table

Max. rows: 100    Fetched Rows: 9    Matching Rows:

| # | DOCTORID | DOCTOR_FNAME | DOCTOR_LNAME | DOCTOR_EMAIL | DOCTOR_PHONENO |
|---|---|---|---|---|---|
| 1 | 1 | Anushka | Max | Anu.Max@gmail.com | 123-456-7876 |
| 2 | 3 | Doctor | ID3 | Doctor.id3@gmail.com | 245-214-1124 |
| 3 | 4 | Doctor | ID4 | Doctor.id4@gmail.com | 652-789-7854 |
| 4 | 5 | Doctor | ID5 | Doctor.id5@gmail.com | 321-564-6589 |
| 5 | 6 | Doctor | ID6 | Doctor.id6@gmail.com | 789-852-3245 |
| 6 | 7 | Doctor | ID7 | Doctor.id7@gmail.com | 885-325-1245 |
| 7 | 8 | Doctor | ID8 | Doctor.id8@gmail.com | 311-755-6548 |
| 8 | 9 | Doctor | ID9 | Doctor.id9@gmail.com | 422-998-7854 |
| 9 | 10 | Doctor | ID10 | Doctor.id10@gmail.com | 789-111-245 |

## 3.3 Doctor Personal details table

Max. rows: 100    Fetched Rows: 9

| # | DOCTORLOGINID | USERNAME | UPASSWORD |
|---|---|---|---|
| 1 | 1 | Anushka | pass |
| 2 | 3 | doctor_user3 | doctorpass3 |
| 3 | 4 | doctor_user4 | doctorpass4 |
| 4 | 5 | doctor_user5 | doctorpass5 |
| 5 | 6 | doctor_user6 | doctorpass6 |
| 6 | 7 | doctor_user7 | doctorpass7 |
| 7 | 8 | doctor_user8 | doctorpass8 |
| 8 | 9 | doctor_user9 | doctorpass9 |
| 9 | 10 | doctor_user10 | doctorpass10 |

## 3.4 Doctor login details table

| # | MRECORDID | PATIENTID | P_AGE | PHEIGHT |
|---|-----------|-----------|-------|---------|
| 1 | 3 | 3 | 25 | 180 |
| 2 | 1 | 1 | 35 | 170 |
| 3 | 2 | 2 | 28 | 165 |
| 4 | 6 | 6 | 43 | 174 |
| 5 | 4 | 4 | 35 | 170 |
| 6 | 5 | 5 | 23 | 140 |
| 7 | 7 | 7 | 66 | 164 |
| 8 | 8 | 8 | 37 | 144 |
| 9 | 9 | 9 | 87 | 175 |
| 10 | 10 | 10 | 25 | 189 |

## 3.5 Patient Medical records table

Max. rows: 100    Fetched Rows: 10    Matching Rows:

| # | PATIENTID | PATIENT_FNAME | PATIENT_LNAME | PATIENT_EMAIL | PATIENT_PHONENO |
|---|-----------|---------------|---------------|---------------|-----------------|
| 1 | 3 | Sahil | Raorane | sahilraorane2201@gmail.com | 7738428295 |
| 2 | 2 | Emily | Smith | emily.smith@example.com | 555-123-4567 |
| 3 | 1 | Aniket | Singh | Ani.Singh@gmail.com | 123-456-7877 |
| 4 | 6 | Patient | ID6 | patient_id6@gmail.com | 123-668-7873 |
| 5 | 4 | Patient | ID4 | patient_id4@gmail.com | 123-468-7877 |
| 6 | 5 | Patient | ID5 | patient_id5@gmail.com | 123-568-7872 |
| 7 | 7 | Patient | ID7 | patient_id7@gmail.com | 123-768-7874 |
| 8 | 8 | Patient | ID8 | patient_id8@gmail.com | 123-868-7875 |
| 9 | 9 | Patient | ID9 | patient_id9@gmail.com | 123-968-7876 |
| 10 | 10 | Patient | ID10 | patient_id10@gmail.com | 123-068-7877 |

## 3.6 Patient Personal details page

| # | PATIENTLOGINID | USERNAME | UPASSWORD |
|---|----------------|----------|-----------|
| 1 | 3 | Sahil | Sahil |
| 2 | 1 | Asingh | pass1 |
| 3 | 2 | EmilySmith | smith456 |
| 4 | 6 | patient_user6 | patientpass6 |
| 5 | 4 | patient_user4 | patientpass4 |
| 6 | 5 | patient_user5 | patientpass5 |
| 7 | 7 | patient_user7 | patientpass7 |
| 8 | 8 | patient_user8 | patientpass8 |
| 9 | 9 | patient_user9 | patientpass9 |
| 10 | 10 | patient_user10 | patientpass10 |

## 3.8 Patient login details page

# 6. Login Credentials

a. Execution file at the startup Index.jsp

b. Sample login credentials for the patient

Username: Sahil Password: Sahil

c. Sample login credentials for the doctor

Username: Anushka Password: pass

d. Sample login credentials for the admin

Username: sa Password: pass

## 7. Individual Contribution

Sahil Raorane: Database connection (Jsp)

Dhanya R Sangolli: Front end(Html, CSS, Java Script)

## 8. Git Repository link

https://github.com/SahilRaorane0/SugerSaver.git