UMM AL-QURA UNIVERSITY
College of Engineering and Computing in Al-Qunfudah

جامعة أم القرى
كلية الهندسة والحاسبات بالقنفذة

Umm AL-Qura University

College of Engineering and Computing at Al-Qunfudhah

Computing Department

PROJECT NAME: DIABETES MONITORING

STUDENTS	
NAME	ID
أريام عمر المعيدي	444000845
علياء مهدلي الناشري	444002455
عائشة إبراهيم الناشري	444001645
نوره خالد الزبيدي	444001911
ليال حسن العمري	44410644

Chapter 1

Introduction:

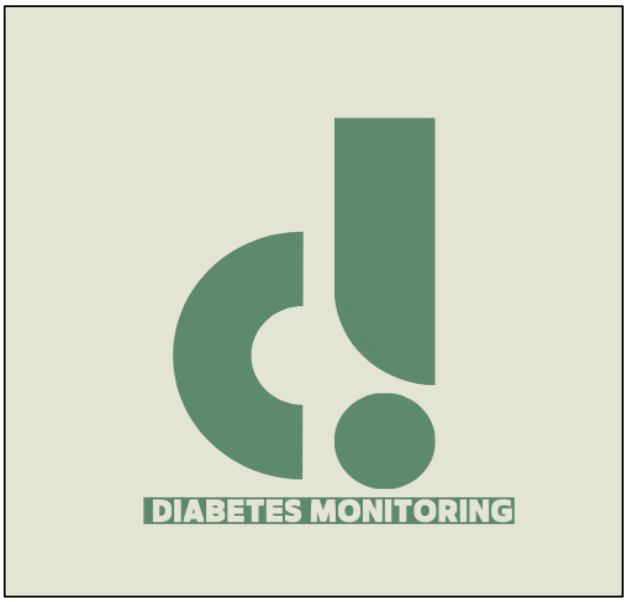
Diabetes is a common condition that requires careful monitoring of blood glucose levels, medication adherence, and lifestyle choices. However, traditional monitoring methods have limitations, such as lack of real-time data and personalized guidance. Our application is developed and designed specifically for diabetes monitoring, aiming to improve patient care and empower individuals to take control of their health.

This report explores the benefits of this innovative application. By using mobile connectivity, wearable devices, and data analysis, the application provides a user-friendly platform for monitoring diabetes-related parameters. It allows users to track their blood glucose levels, receive real-time feedback, and access personalized recommendations based on their individual health profile.

With the power of technology and data analysis, this application has the potential to transform diabetes management. It improves communication between patients and healthcare providers, leading to better treatment plans. Additionally, it empowers individuals to take charge of their health, promoting self-awareness and proactive decision-making.

PROJECT DESCRIPTION:

A diabetes app that allows the chip to be linked to the app by scanning the chip with the camera. Once linked, the app helps the user know their blood sugar level when it is high or low. It's also linked to the hospital to track the diabetic condition.



PROBLEM STATEMENT:

Patients with diabetes face difficulties in manually monitoring and analyzing their blood sugar level data. This is because effective management of diabetes requires regular blood sugar monitoring and medication intake, which, if not adhered to, can lead to serious health complications.

STAKEHOLDERS:

Manager: The person responsible for managing the application (including defining, designing, and developing the application requirements)

People with Diabetes: this is the core group who will directly use the application to manage their condition.

Doctors and specialists: These healthcare providers will play a crucial role in recommending the app to patients, monitoring progress through the app, and potentially even using it for remote consultations.

Hospitals and Clinics: Institutions offering diabetes care may endorse the app to their patients and integrate data (with patient consent) for better care coordination.

USER REQUIREMENTS:

An app that allows you to check your blood sugar level on a phone, communicate with a specialist, and share your condition.

SYSTEM REQUIREMENTS:

1.1Simplified Login you can log in using your civil ID number for create a personal account for future logins or Initial Login scan the application code with phones camera.

1.2The app will display a list of nearby hospitals along with available doctors and specialists. Simply choose the hospital and doctor you wish to connect with

1.3The home page provides an option to easily share your glucose readings and health records.

1.4At the end of each month, a comprehensive report of your glucose levels is automatically generated.

1.5The report can be conveniently shared with your doctor or specialist for further analysis of your monthly glucose levels.

NON-FUNCTIONAL REQUIREMENTS

1- Performance: The system needs to possess the ability to rapidly process and analyze data for real-time monitoring and alerts. It should be capable of efficiently handling large data volumes without experiencing significant delays or slowdowns.

2- Reliability: The system must be dependable and consistently available. It should minimize instances of downtime and data loss, ensuring uninterrupted monitoring of individuals' diabetes condition.

3- Usability: The system should feature a user-friendly interface that is easy to navigate and comprehend. It should offer clear instructions and feedback to accommodate users with varying levels of technical proficiency.

4- Security: The system should prioritize the confidentiality and privacy of user data. It should incorporate robust security measures to safeguard sensitive personal information, including blood glucose levels and medical history, against unauthorized access or breaches.

Chapter2

Tabular description of Diabetes Monitoring use case

Actor	Admin
Description	The person responsible for managing the application including defining, designing, and developing the application requirements.
Data	Application management data, such as user accounts, system configurations, application settings, and user permission
Stimulus	Application performance issues
Response	Improve application performance.
Comment	The admin actor has administrative privileges and is responsible for the overall management of the application. They perform tasks related to the administration and maintenance of the system.

Tabular description for Admin

Actor	Doctor/Specialist
Description	Represents the healthcare professional using the app. Recommend the application to patients. They can after login to the system monitor patient progress through the app and conduct remote consultations for patient.
Data	Patient information, medical history, reports
Stimulus	Receives messages, requests, and data
Response	Provides medical advice, insights, and guidance to users
Comment	Interacts with users and provides specialized medical knowledge and support.

Tabular description for Doctor and Specialists

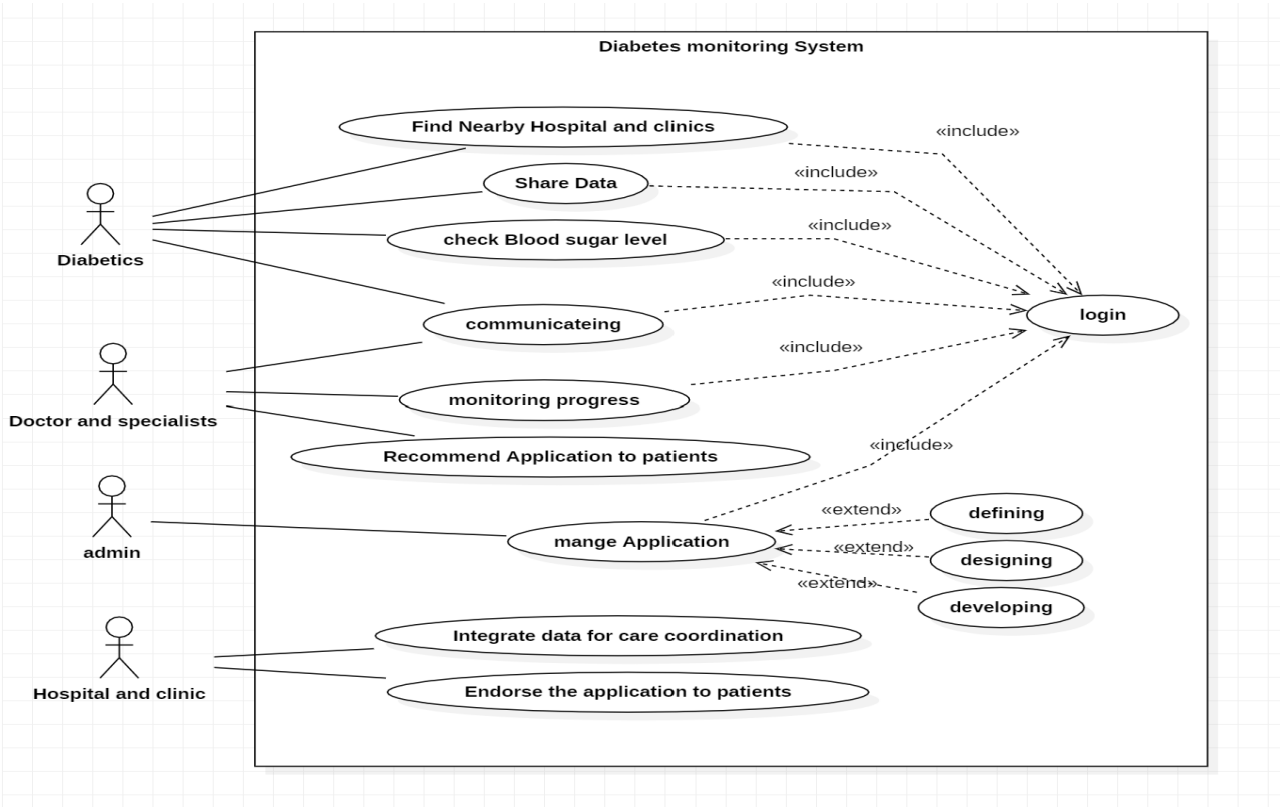
Actor	People with Diabetes
Description	The core group of users who have diabetes. After login to the system they can monitor blood sugar levels, share glucose readings and health records, choose the nearby hospital and receive consultation from doctor.
Data	Personal health data, such as blood sugar levels, medication details, medical history, dietary information, and exercise logs.
Stimulus	Interactions with the application to monitor blood sugar levels, track health records, receive consultations.
Response	Access and utilize features of the diabetes management application, such as, viewing blood sugar level, and tracking progress, and interacts with specialists
Comment	People with Diabetes are the primary users of the application and rely on it for managing their diabetes-related information and activities.

Tabular description for people with diabetes

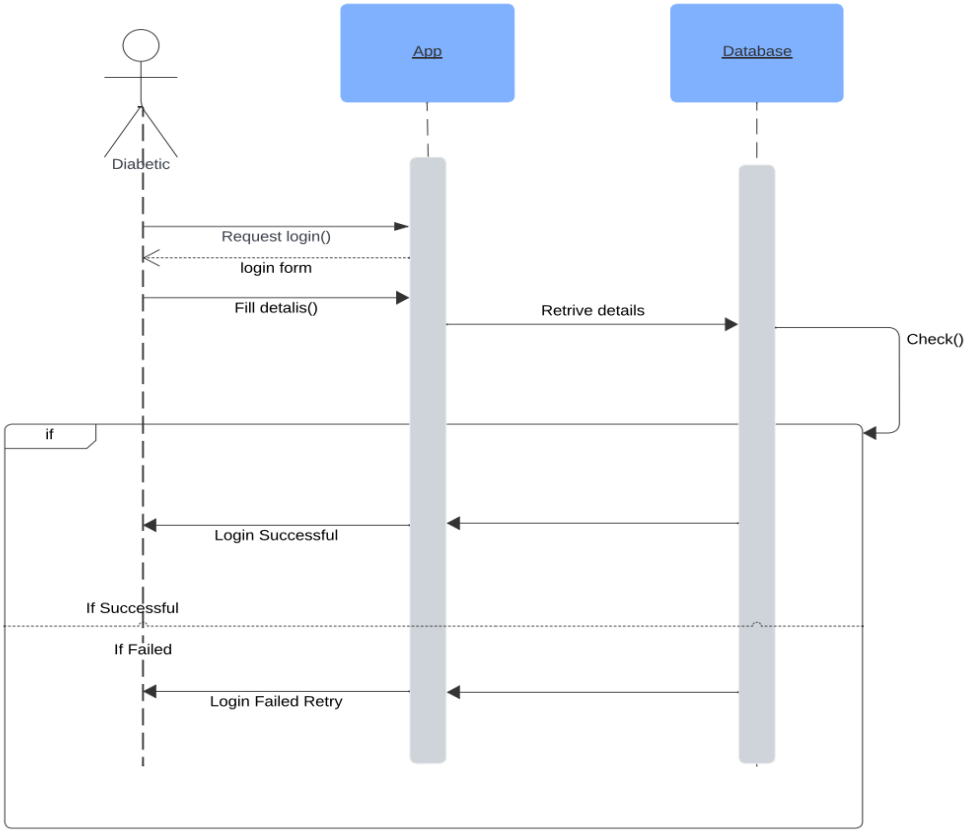
Actor	Hospitals and Clinics
Description	Institutions offering diabetes care that may endorse the app to their patients and integrate data (with patient consent) for better care coordination.
Data	Patient data (with consent). such as the personal information, medication details and medical history,
Stimulus	Receive blood sugar level readings of the patient with diabetes.
Response	Update medical reports of the patient.
Comment	Hospitals and Clinics play a role in promoting the application to their patients, integrating data, and ensuring coordinated diabetes care

Tabular description for Hospitals and Clinic

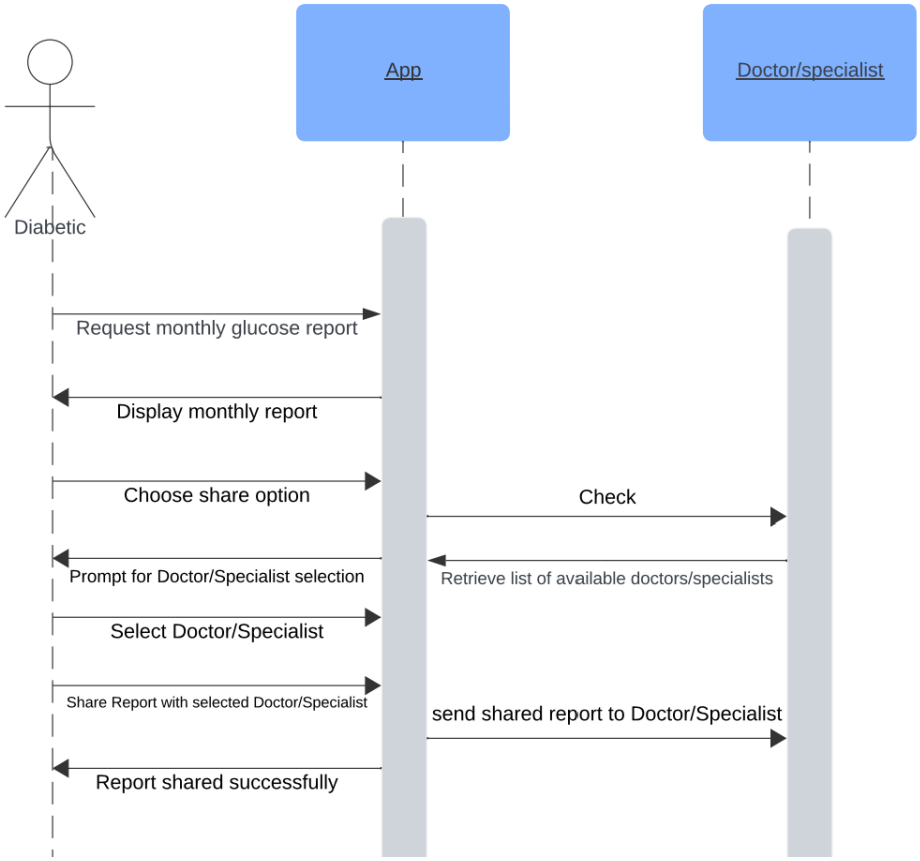
Use case diagram For Diabetes Monitoring



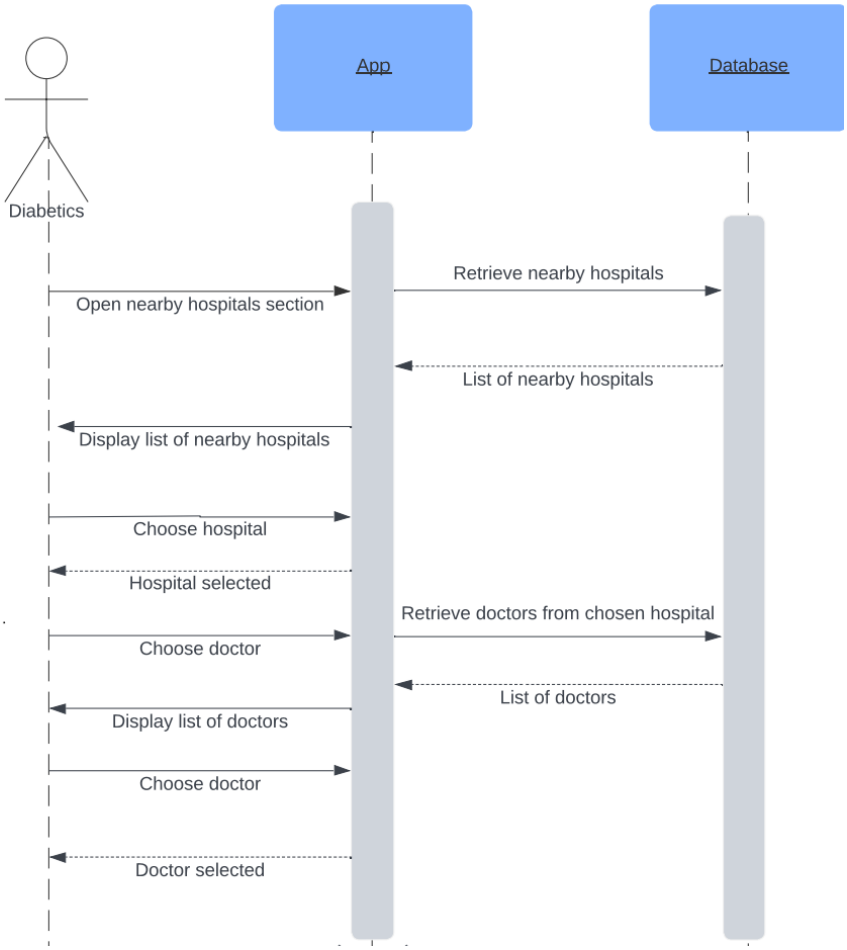
Sequence diagram for login.



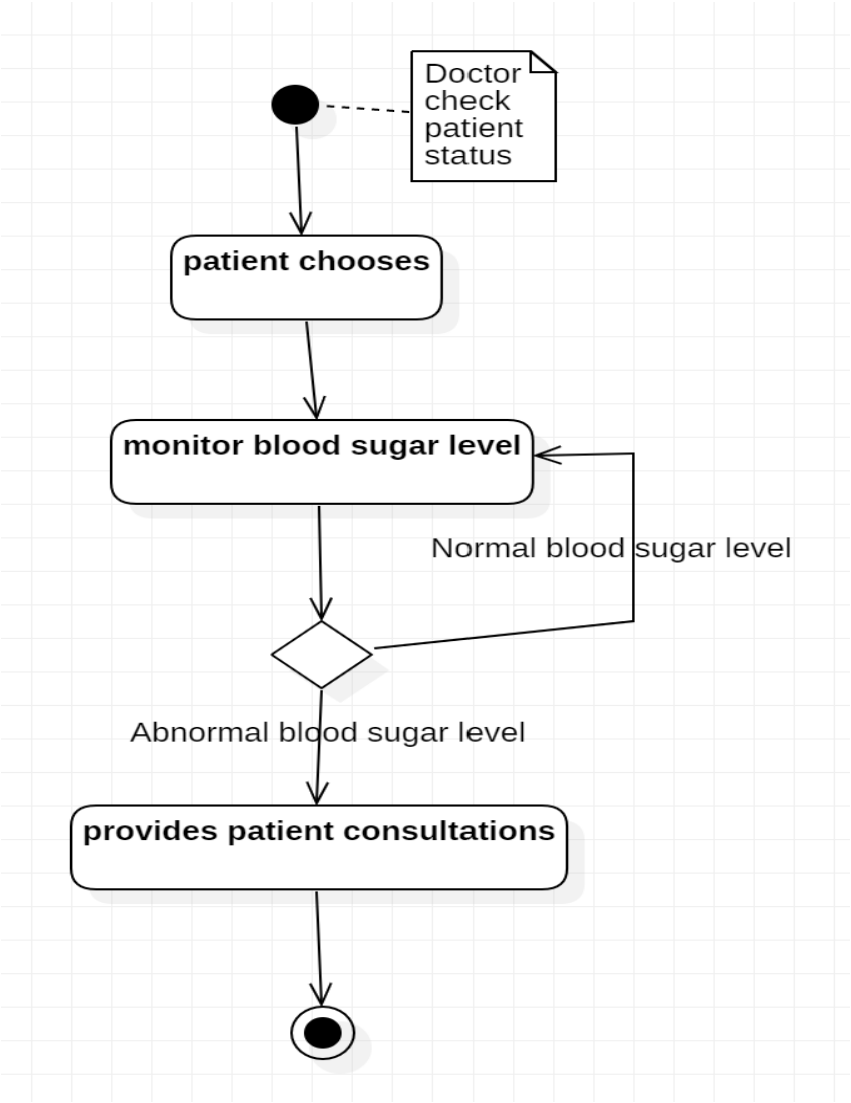
Sequence diagram for share report with specialist



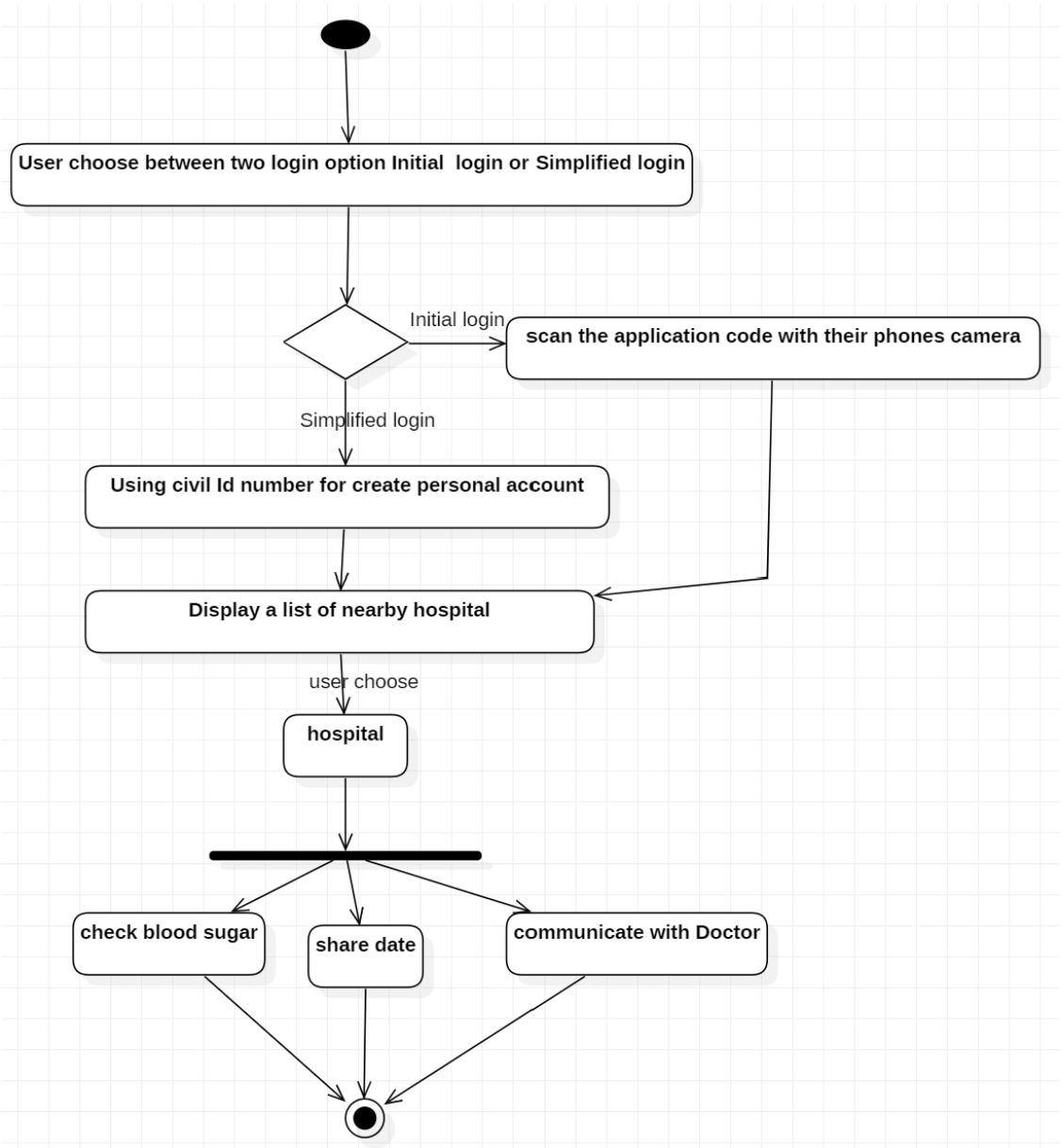
Sequence diagram for choose nearby hospital



Activity diagram foe check patient status



Activity diagram for login and choose hospital



Class diagram for Diabetes Monitoring