Department of Computer Science & Engineering

UNIVERSITY OF CHITTAGONG

Report of

Mobile Apps Development Lab

'MEDICINE TIME'

Course: **CSE-618**

Submitted to

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● Introduction:

There is a popular saying that health is wealth. Health is one of the most important thing for most individuals simply because not having good health can lead to a very miserable life . In recent times new diseases have emerged which needs to be taken care off by taking medicine or pills routinely , for many people there are consequences attached to not taking the prescribed medicine in proper time and proportion because it can be the difference between life and death. Medicine adherence is a very serious problem because it may affect the total well-being of the patient, delaying the curing time and also raising the total medical cost of the patient . Yet with all the aforementioned consequences people of different ages still forget to take their prescribed medicines or pills in due time and proportion . However, there are different reasons for been forgetful ranging from busy schedules, old age, cognitive disorders, bad working conditions, Alzheimer disease, loss of memory, dementia, people with emotional problems, stress, anxiety, depression etc.

Nevertheless, the recent advancement in technology has provided an enabling technique to solve these types of problems using different methods, one of the methods used is by buying a device designed purposely to remind patient to take their medicines in the prescribed time and proportion, the aforementioned solution seems to be ineffective and costly . Rather, the use of mobile application seems to be more effective as it does not necessitate a need to procure an additional device and because most people make use of smart phones.A mobile application would help patient to maximize the full benefit of the medicine and abstain from the risk that result as not taking the medicine or pill within the stipulated time prescribed by the specialist.

● Problem Statement:

Health is one of the most important thing for most individuals simply because without a good health nothing seems to go well. In recent times new diseases have emerged which needs to be taken care off by taking medicine or pills routinely. In addition, the working conditions of some individuals is bad and hectic and as such had resulted them in forgetting to take their administered medicine or pills in the appropriate timing or proportion and for some people its old age, most elderly people suffer from dementia i.e. forgetfulness. Not taking the prescribed medicine at the proper dosage or sometimes could result to what is referred to as medicine adherence which can be stated to as the extent at which the medicine is taken at the correct 3 doctor prescribed time and proportion. Medicine adherence is a very serious problem because it may affect the total well-being of the patient, delaying the curing time and also raising the total medical cost of the patient. As such the design and development of an mobile based medicine or pill reminder could help in

curbing out the aforementioned problems by reminding patients to take their medicines as prescribed by the doctor within the stipulated timing and dosage.

● Problem Solutions :

As we see majority of patients forget to take medicine as it is prescribed.Also forgets which medicine he/ she have to take at required time.To overcome this, we have tried to design the **MEDICINE TIME.MEDICINE TIME** App is an amazing application that can help to manage   intakes of medicines and supplements on a regular basis.The app is designed to make one's medicine intake easier to take and follow along to during regular day.

● Tools & Software:

The software we used to build this mobile application are given below:

Android Studio

SQLite

● Application Feature:

Some features of our application are given below:

Functional :

a) We can create a medicine schedule.

b) Can make a reminder list.

c) Reminds us to take medicine at the right time.

d) A list shows a history of one month of whether we have taken medicine or not.

e) Show the existing reminder list.

f) Can keep and delete medicine from list.

Non-functional:

a) The system is secured.

b) The system is fast.

c) System responses quickly.

d) Our system is reliable.

e) Our system is well maintainable.

f) We can increase the capacity of our system by adding more features.

g) The serviceability of our system is good.

● Architecture:

Our system is based on MVC pattern.

Model — the data layer, responsible for managing the business logic and handling network or database API.

View — the UI layer — a visualization of the data from the Model.

Controller — the logic layer, gets notified of the user's behavior and updates the Model as needed.
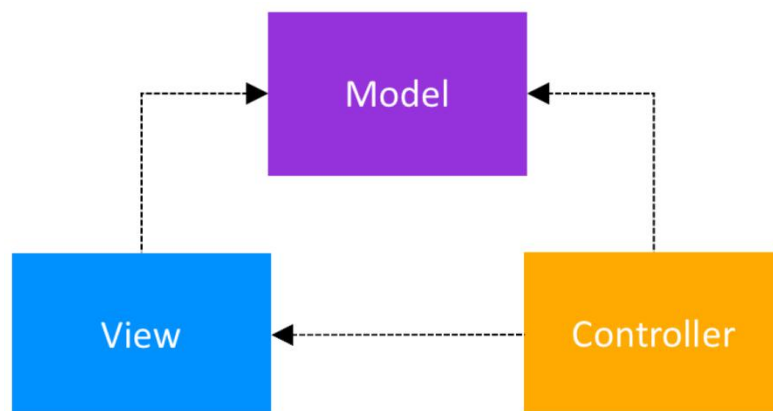
Fig 01-Architecture of the system

● Activity Diagram

The activity diagram is an important behavioral diagram in the UML diagram to describe the dynamic aspects of the system. An activity diagram is essentially an advanced version of the flow chart that modeling the flow from one activity to another activity.

Activity Diagrams describe how activities are coordinated to provide a service which can be at different levels of abstraction. Typically, an event needs to be achieved by some operations, particularly where the operation is intended to achieve several different things that require coordination, or how the events in a single-use case relate to one another, in particular, use cases where activities may overlap and require coordination. It is also suitable for modeling how a collection of use cases coordinate to represent business workflows.

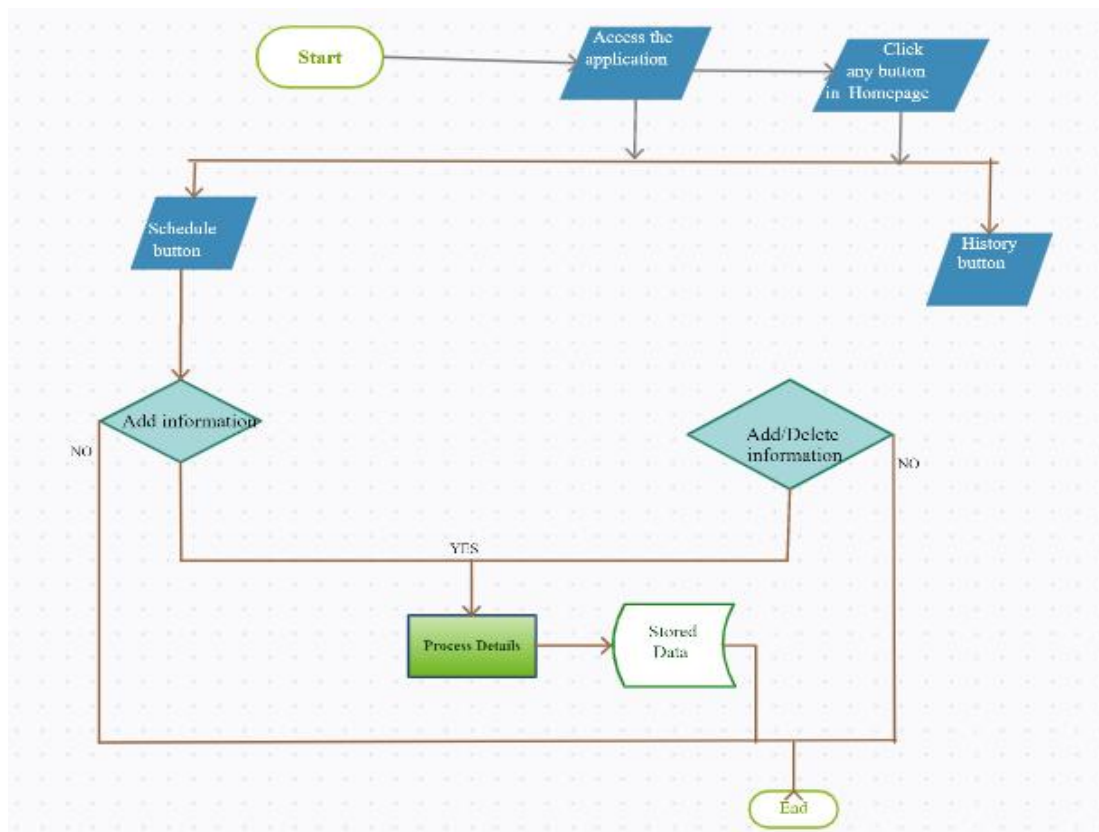The activity diagram of our application is given below:

Fig 02 -Activity Diagram of MEDICINE TIME

● Use Case Diagram:

A UML use case diagram is the primary form of system/software requirements for a new software program underdeveloped. Use cases specify the expected behavior (what), and not the exact method of making it happen (how). Use cases once specified can be denoted both textual and visual representation (i.e. use case diagram). A key concept of use case modeling is that it helps us design a system from the end user's perspective. It is an effective technique for communicating system behavior in the user's terms by specifying all externally visible system behavior.

Here is the use case diagram of our project:
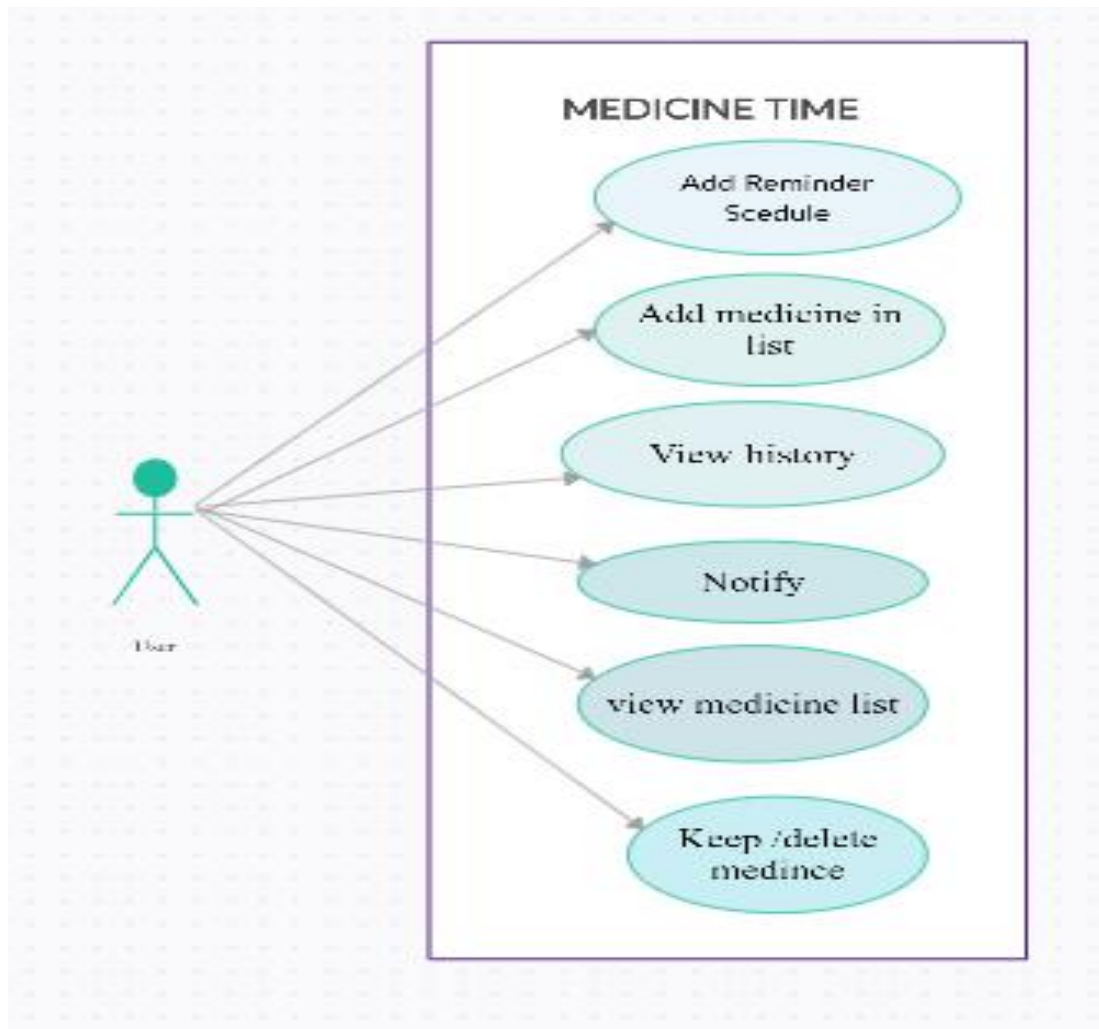
Fig 03- Use case Diagram MEDICINE TIME

● Entity Relationship Diagram:

An entity relationship diagram describes how entities relate to each other.Basically its offer a visual representation of the relationships between different sets of entities.
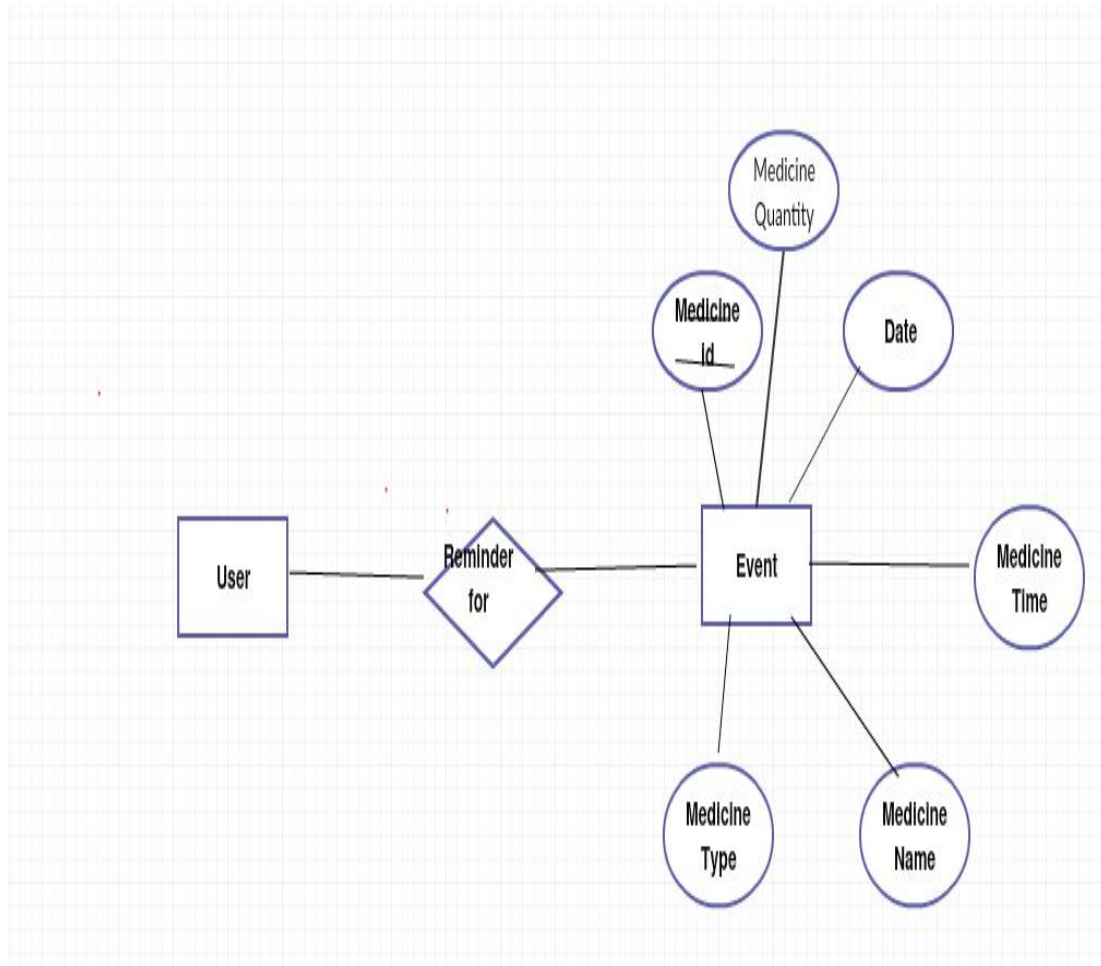

Fig 04- Entity Relationship Diagram of MEDICINE TIME

● Sequence Diagram:

UML Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focus and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when.

The sequence diagrams of this project are shown below:
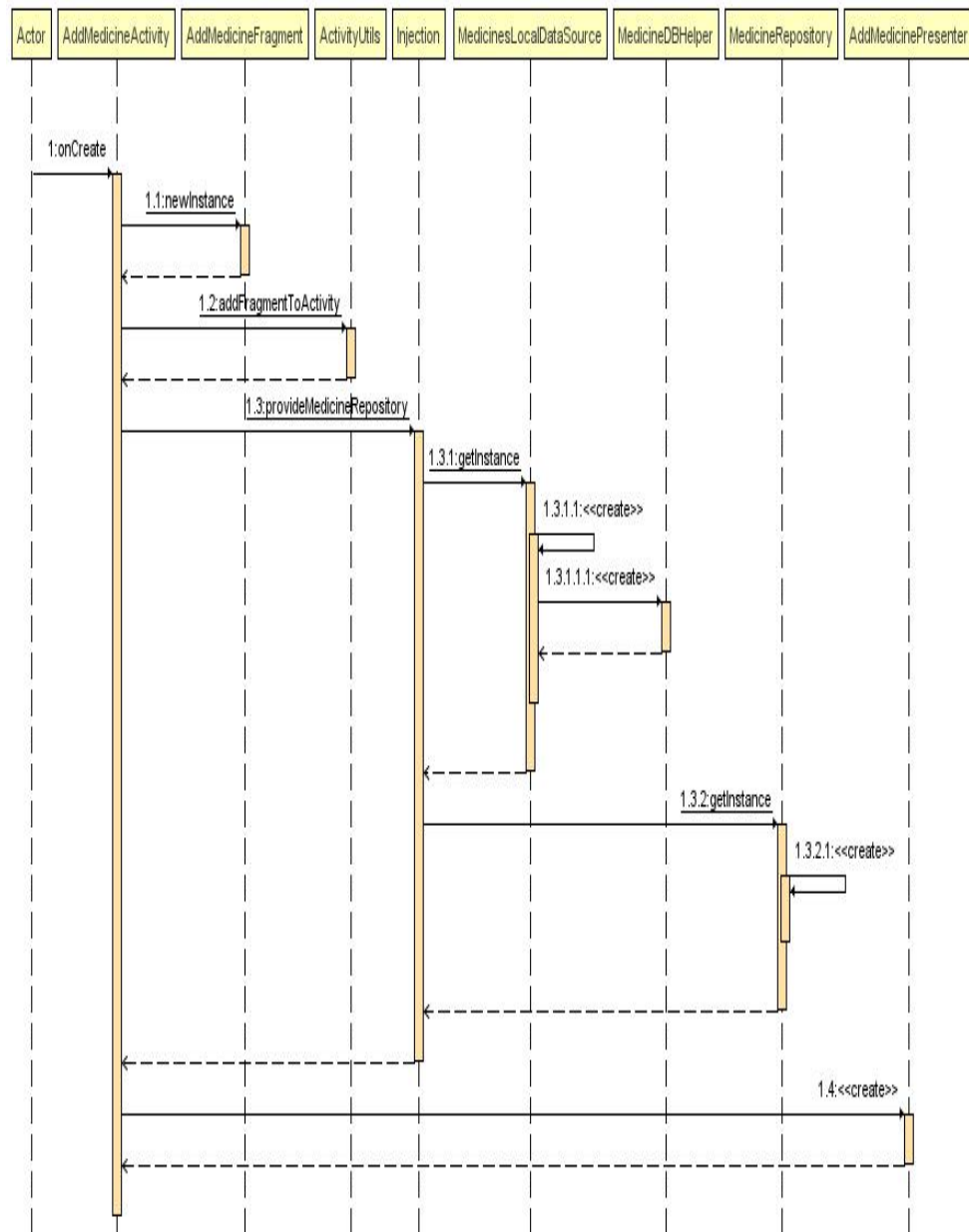
For Add Medicine:

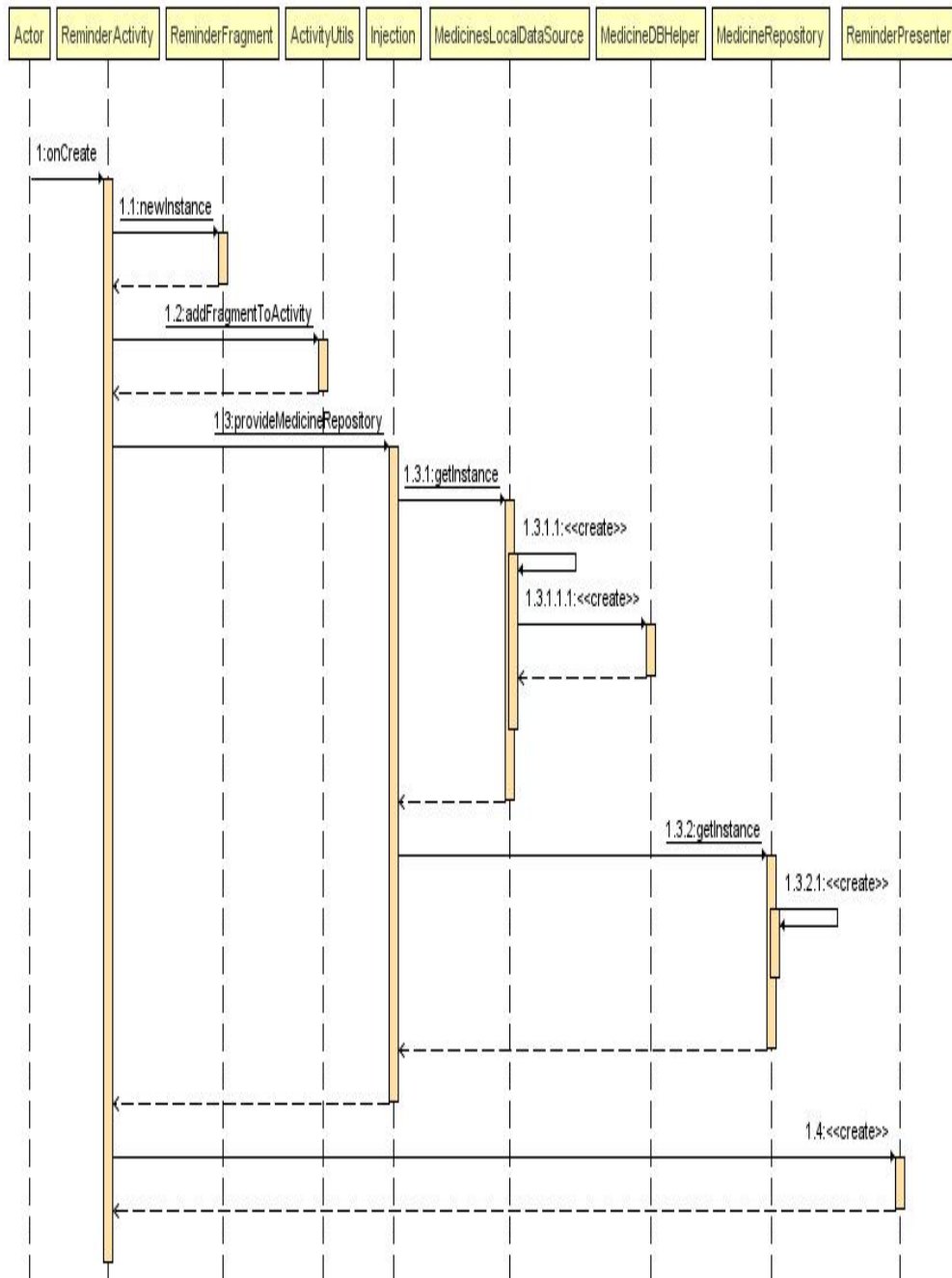Fig 5.1- Sequential diagram for Add Medicine of MEDICINE TIME
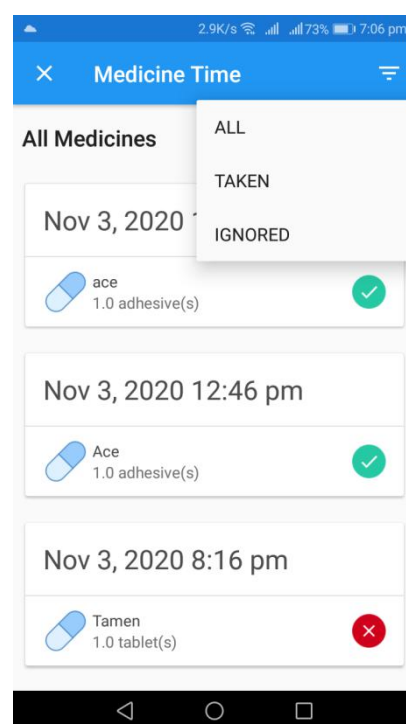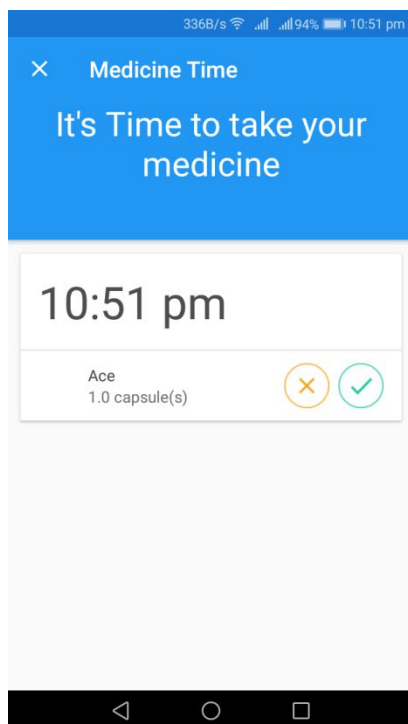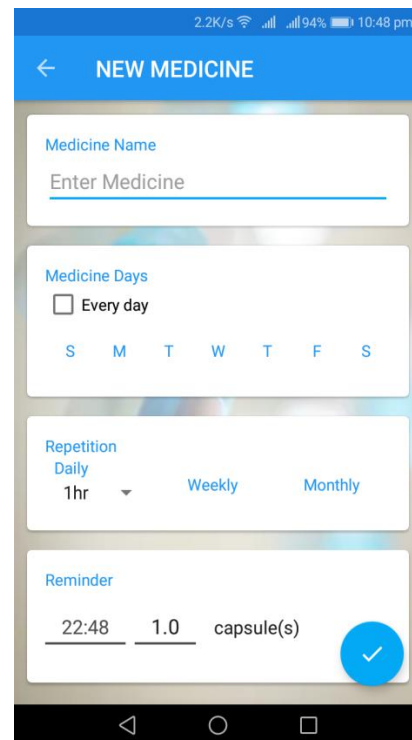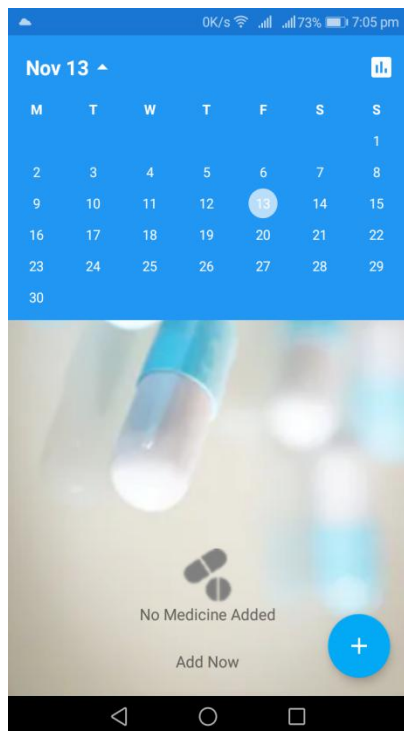
For Add Reminder:

Fig 5.2- Sequential diagram for Add Reminder of MEDICINE TIME

● Snapshots of this Application:

● Limitation:

The designed application comes with some limitations which are-The designed system has no cloud based backup system, in case the smart phone in which the application was installed got missing or faulty the whole data would be lost. The designed medicine reminder makes uses of the smart phone alarming system to notify the patient to take their medicine, if the patient changes the phone mode to silent the patient cannot hear the alarm to remind him/her to take their medicine in the prescribed appropriate time and it has poor database system.And also some essential services are missing.

● Future Work:

We are hoping to add Sleep time (a   period where alarm don't ring,only show notification). In the future, we can Track health measurments for various medical condition and Track tablets , dose , measurment , activities as a comprehensive health journal.In our future version, we want to add sharing printable health journal with doctor. And The status of medicine packet can also be known.Furthermore, the application will be a medium of communication between the physician and the patient and also help the physician monitors the intake his patient prescribed pills.

● Conclusion:

The MEDICINE TIME application can impact positively on the life of the patient as it will help the patient in keeping track of their daily intake of pills as remembering the intake of the prescribed medicine can be a matter of life and death.It helps patient without any cost.