TRIAGE CLINIC

AN INDUSTRIAL INTERNSHIP REPORT

Submitted in partial fulfilment for the award of the degree of

MTech

in

Software Engineering

by

R. MANO BALA – 16MIS0433

School of Information Technology and Engineering

Department of Software and Systems Engineering

NOVEMBER 2019

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Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

School of Information Technology and Engineering

Department of Software and Systems Engineering

DECLARATION BY THE CANDIDATE

I hereby declare that the Industrial Internship report entitled **"TRIAGE CLINIC"** submitted by me to VIT, Vellore, in partial fulfillment of the requirement for the award of the degree of **MTech (Software Engineering)** is a record of bonafide **Industrial Internship - SWE3099** carried out by me under the guidance of **AJITH KUMAR**. I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree in this institute or any other institute or university.

Place: Vellore

Date: 16.10.19 **Signature of the Candidate**

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BONAFIDE CERTIFICATE

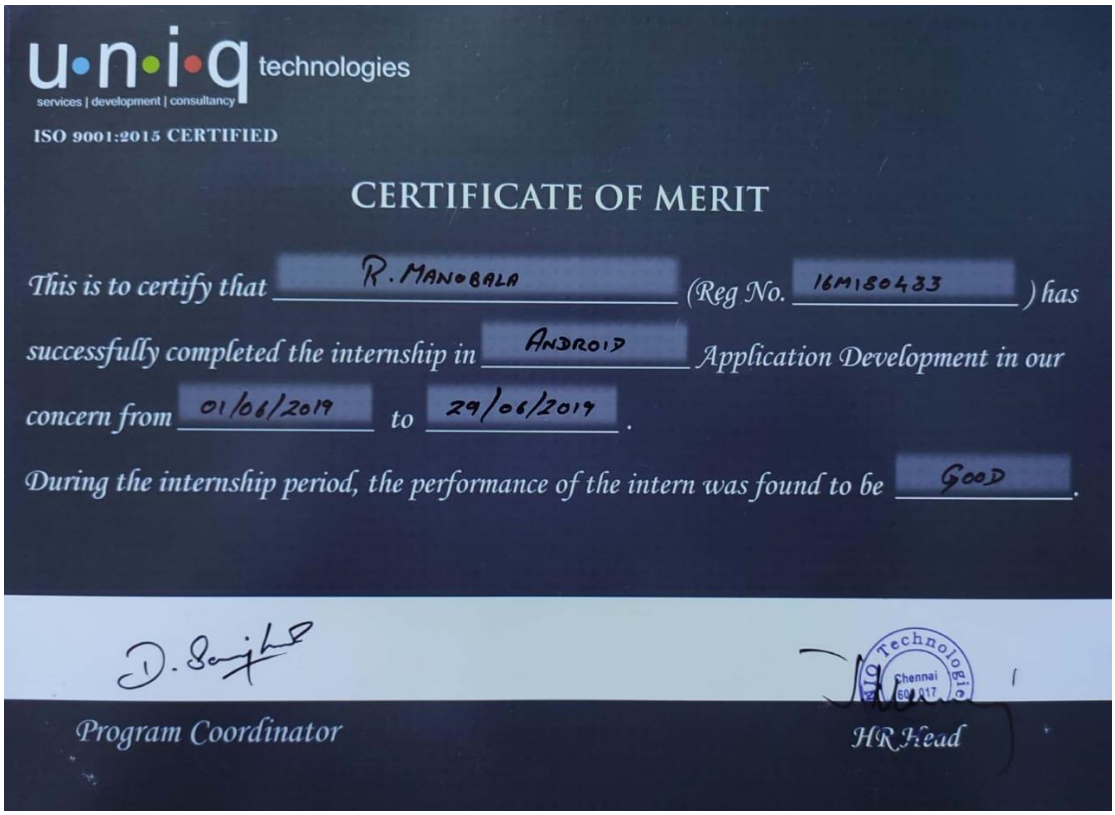
This is to certify that the Industrial Internship report entitled **"TRIAGE CLINIC"** by **R. MANO BALA – 16MIS0433** to VIT, Vellore, in partial fulfillment of the requirement for the award of the degree of **MTech (Software Engineering)** is a record of bonafide work carried out by him /her under my guidance. The project fulfills the requirements as per the regulations of this Institute and in my opinion meets the necessary standards for submission. The contents of this report have not been submitted and will not be submitted either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.

<Prof. Name of the Internal Guide>
Signature of Internal Guide

Examiner(s) Signature

1.
2.

INTERNSHIP CERTIFICATE:



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CERTIFICATE OF MERIT

This is to certify that R. MANOBALA (Reg No. 16M180433) has successfully completed the internship in ANDROID Application Development in our concern from 01/06/2019 to 29/06/2019.

During the internship period, the performance of the intern was found to be GOOD.

D. Sanjay

Program Coordinator

HR Head

ABSTRACT

Clinics currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the clinic infrastructure. Often Information is incomplete or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. To overcome this Problem we come up with a System Called “TRIAGE CLINIC” .It is an Mobile application. We develop the system using Android Programming. The system consists of Login Module, Add Patient details, Add queue details, Patient Report, Queue Display, Doctor Details. Triage Clinic designed for Any Clinic to replace their existing manual, paper based system. These services are to be provided in efficient, cost effective manner with the goal of reducing the time and resources currently required for such tasks. Now-a-days Application are widely used for many project areas. here we create an application for the small town hospitals to manage the patient details, queue, doctor details and patient reports. This project is developed to maintain the clinic management includes information about admit patients, outdoor patients (OPD) status, outdoor patients appointments. Maintaining these information manually is time consuming and not suitable for clinics where number of appointment increases.

ACKNOWLEDGEMENT

I wish to express our heartfelt gratitude to **Dr.G.Viswanathan**, Chancellor, VIT, Vellore, for providing facilities for the Industrial Internship. I am highly grateful to our Vice President, **Dr.G. Sekar Viswanathan**, Vice chancellor **Dr. Anand A. Samuel,** and Pro-Vice Chancellor **Dr.S.Narayanan,** for providing the necessary resources.

My sincere gratitude to **Dr. Balakrushna Tripathy**, Dean, School of Information Technology and Engineering, for giving me the opportunity to undertake the project.

I wish to express my sincere gratitude to **Dr. S. Sree Dharinya**, Head of the Department, Software and Systems Engineering, **Prof. P.Ushapreethi & Prof. Ramaprabha KP**, Industrial Internship Coordinators, M.Tech (Software Engineering), School of Information Technology and Engineering for providing me continuous support to do my project work**.**

I would like to express my special gratitude and thanks to my external guide **Mr.MANOJ**, UNIQ Technologies and internal guide **Prof. HEMALATHA.S**,Assistant Professor, SITE for their esteemed guidance, immense support and encouragement to complete the internship successfully.

I thank the management of VIT, Vellore for permitting me to use the library resources. I also thank all the faculty members of VIT, Vellore for giving me the courage and strength I needed to complete my goals. This acknowledgement would be incomplete without expressing my whole hearted thanks to my family and friends who motivated me during the course of the work.

Place: Vellore

Date:16.10.2019 R. MANO BALA

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LIST OF ABBREVIATIONS

ACRONYM	EXPANSION
OPD	OutDoor Patients
JVM	Java Virtual Machine
SMS	Short Message Sevice
RAM	Random Access Memory
DFD	Data Flow Diagram

1. INTRODUCTION

1.1 PROBLEM STATEMENT

Clinical Patient management system is enhanced from the traditional paper-based management system that has been using in the clinic. Based on the previous system, the patient who comes to the clinic for the first time is registered via the system. The assistant assist the patient by write down the personal detail in a form. The patient gets the treatment and information about the treatment is record in a file. The system manages the activities in the clinic but the previous system has cause problems to the user.

Problems of using paper to record down the records of patient:

- Only one copy, emergent consult problem
- Waste time to search the record
- Easy to lost record or duplicate record
- Waste money on purchase paper
- Waste space for store record

1.2 MOTIVATION

These problems are so important because they will affect the operation of clinic cause decrease of patients visits, inefficiency and increase of cost. Clinical Patient management is developed to overcome the problems. The system has few modules such as patient registration, inventory module, medical certificate, disease history, patient record search, appointment, billing and reporting.

1.3 OBJECTIVE

- The project aims to overcome the problem exists in the previous system.
- In order to overcome the problem exists in the previous system, we must determine the problems existing in previous system, find out the reason cause the problems in previous existing system and create a solution to solve the problems.
- Investigate on system/user request and define new requirements.
- To achieve this objective need to determine who the user is, understanding the user request, verify the request can be achieve or not.
- Make user easy to maintain record
- Determine what record is requiring in the system. All the records will be kept in database.
- Ensure the system useful to user as it help in daily activity in the clinic.

1.4 PROPOSED SYSTEM

In the Proposed System Of Triage Clinic there are totally 7 modules. Login, Add Patient Details, Add Queue Details, Patient Report, Queue Display, Doctor Details,Payment Module And Signup and forgot page. This System reduce the time of patients on appointments and system is User friendly and easy to use. Clinic use paper for record the details of the patient. This System reduce the manual work and the System is very efficient. The Application includes:

- Maintaining Patient details.
- Providing Prescription, Precautions and Diet advice.
- Providing and maintaining all kinds of tests for a patient.
- Billing and Report generation.
- Advantages of proposed system:
- Patient Registration Details
- Medical Alert Details
- Doctor’s Daily Schedule List

1.5 Advantages Of Proposed System

- Patient can maintain their own profile by giving their respective details which is related to this criterion. Also there is a possibility that they can edit their own details in future if they want to change. Save lots of time for the doctor and patient, it saves the travelling time of patients etc.,
- With the help of Application the patient can book their appointment with the doctors through the mobile app, they don't have to go hospital for this. They can reschedule their appointments in case of unavailability. They can also have of chance of change to another doctor or else change the appointment to selected date with patient verification through mail or SMS. They can also view their different test report sent by the lab in the mobile phone at their home, they don't have to wait for the report at lab.
- Pay Patient Bill via Internet Banking, Credit Cards, Debit Cards and Cash. For In-Patient, There is an option to indicate the bed availability and available rooms at that current time.

2. TECHNOLOGIES LEARNT

We develop an App using Android Programming in Eclipse Tool.

Android Technology Is Essential

- While developing great applications and the softwares for Android, it is absolutely necessary that the right technology to be used from the beginning.
- we already know that the Android is one of the most popular mobile devices on the market. Right now, Android is most used technology, when it comes to traditional smart phones, and it is constantly growing and changing in response to its top market rival, Apple.
- For that reason we used the best and most popular technology will be implemented in developing the android application

Uses and importance of java in Android:

- ❖ Java is both robust and stable.
- ❖ In fact, Java is enjoying a resurgence because it is central to so many mobile applications that are developed today.

- For most purposes, Java is the fastest and cleanest way to produce an interactive mobile experience.
- Java is the technology of choice for building applications using managed code that can execute on mobile devices.
- Java is secure (no threat to security because nothing gets executed outside the JVM).
- Object oriented paradigms.
- Rich set of core features (java's core features are complete and vast. Also they are regularly updated and maintained by the oracle).

Eclipse

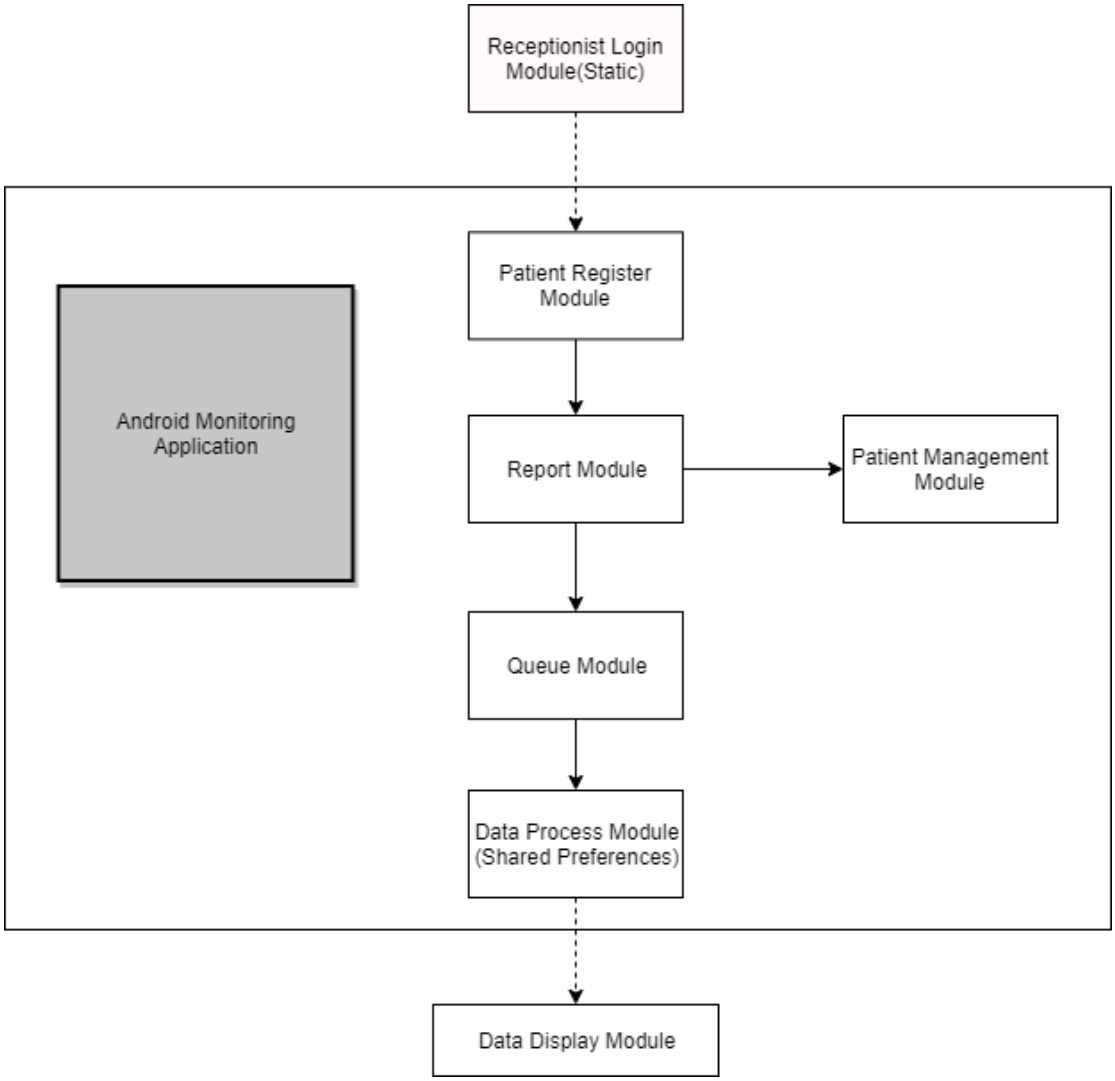
Eclipse is a development environment that is used by the vast majority of Android developers. By using Eclipse, we can ensure that your Android application runs according to all of the latest standards and best practices in the fast-evolving world of the Android application.Eclipse is still a viable alternative and if your software project is one that can be completed, tested, and implemented quickly, it's very possible that your whole project will be developed in Eclipse.

Uses and importance of Eclipse:

- Reliable; you can expect that it will behave exactly as planned, and so will projects made in it.
- Familiar; developers have had time to get used to the interface and find elegant solutions in it.
- Compatible; unlike Android Studio, everything in Eclipse has been tested very extensively.

3. SYSTEM DESIGN

3.1 SYSTEM ARCHITECTURE



3.2 MODULE DESCRIPTION

LOGIN PAGE

Receptiniost wants to enter the username and password to access the attendance monitoring system. If the username and password matches they are successfully logged in. Otherwise it shows an error message.

PATIENT DETAILS

Patient details consists of his personnal details like patient name, id , Address , Mobile number, Blood Group, Medical Conditions etc. This will help to Know the doctors about the patient conditions.

PATIENT REPORT

Patient report consists of Patient_id, Name, Age, Height, weight, Blood Group, Last checkup date , Vital signs, diseases, and prescription.

DOCTOR DETAILS

Doctor Details consists of information about the doctor like name, Mobile no, Available time, Appointment time, Specialist in etc.

QUEUE DETAILS

In this module the receptionist add the patient name and the token number. If the patient visited the doctor they are going to delete from the queue

3.3 SYSTEM SPECIFICATION

SOFTWARE REQUIREMENTS

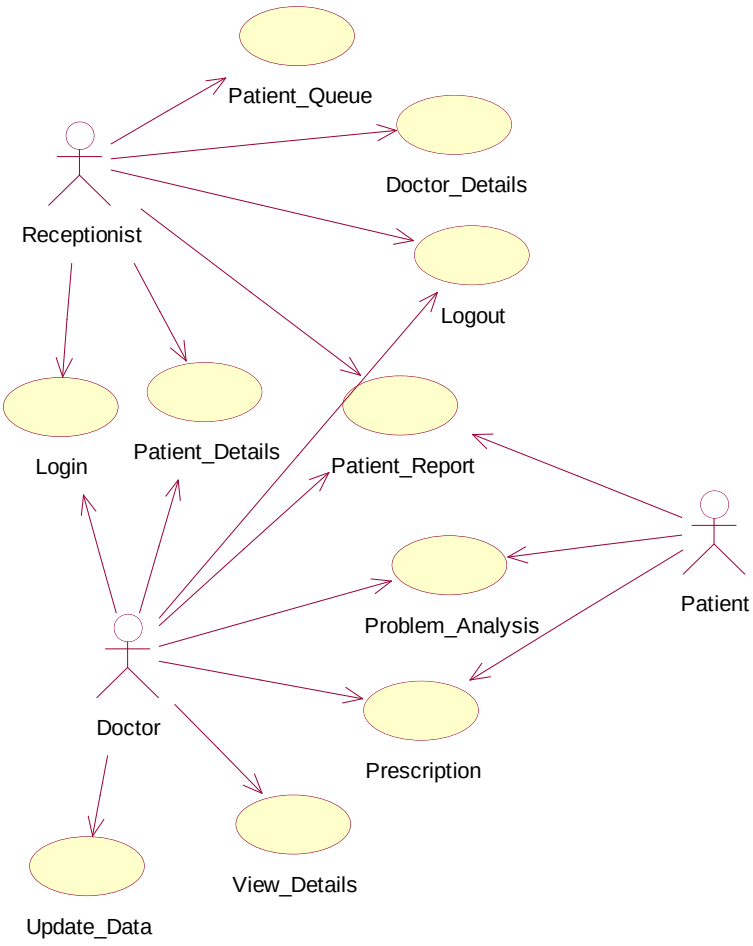
- Eclipse Tool
- Windows 10,8

HARDWARE REQUIREMENTS

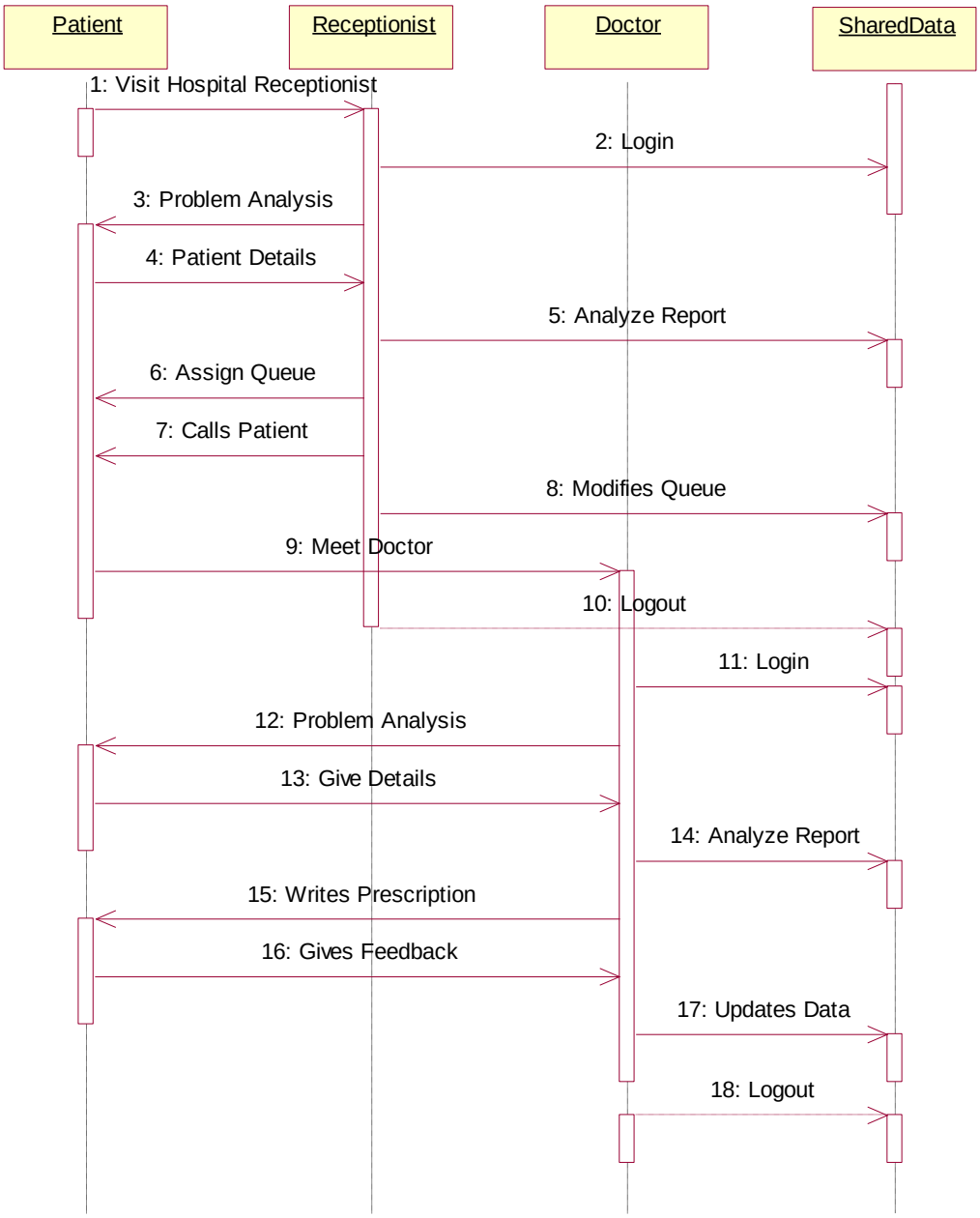
- 8.00 GB RAM
- 1 TB Hard Disk

3.4 DETAILED DESIGN

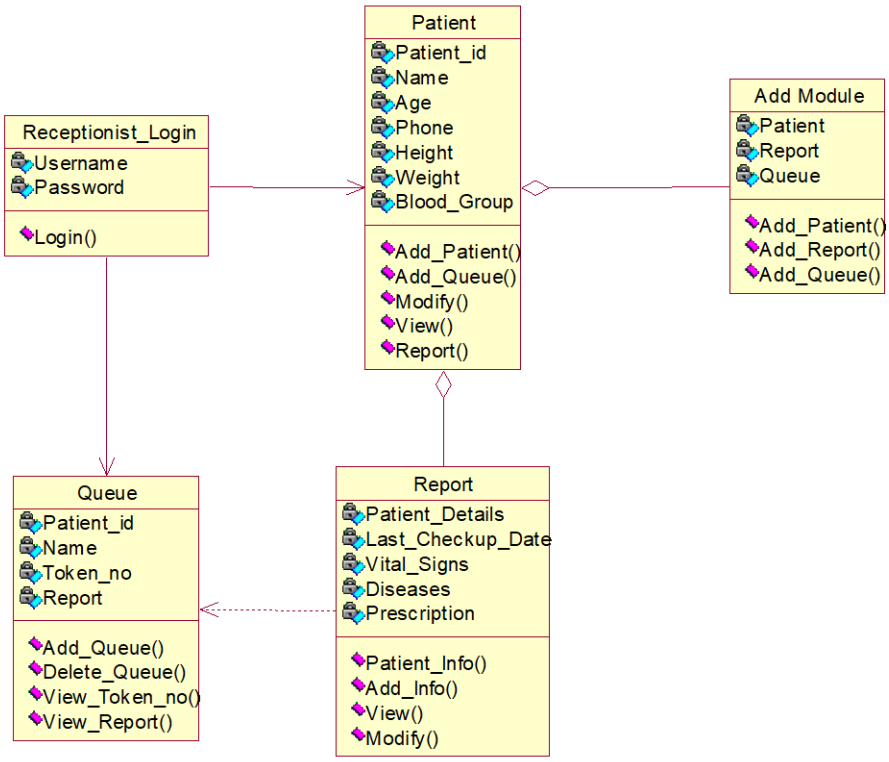
3.4.1 USE CASE DIAGRAM



3.4.2 SEQUENCE DIAGRAM

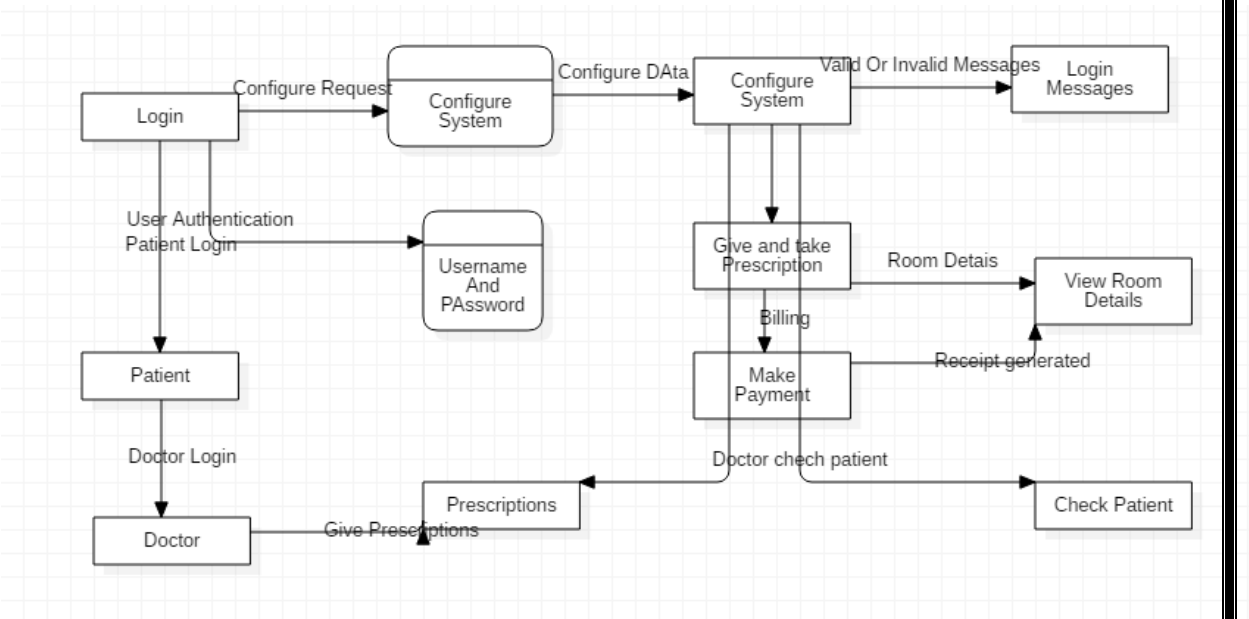


3.4.3 CLASS DIAGRAM

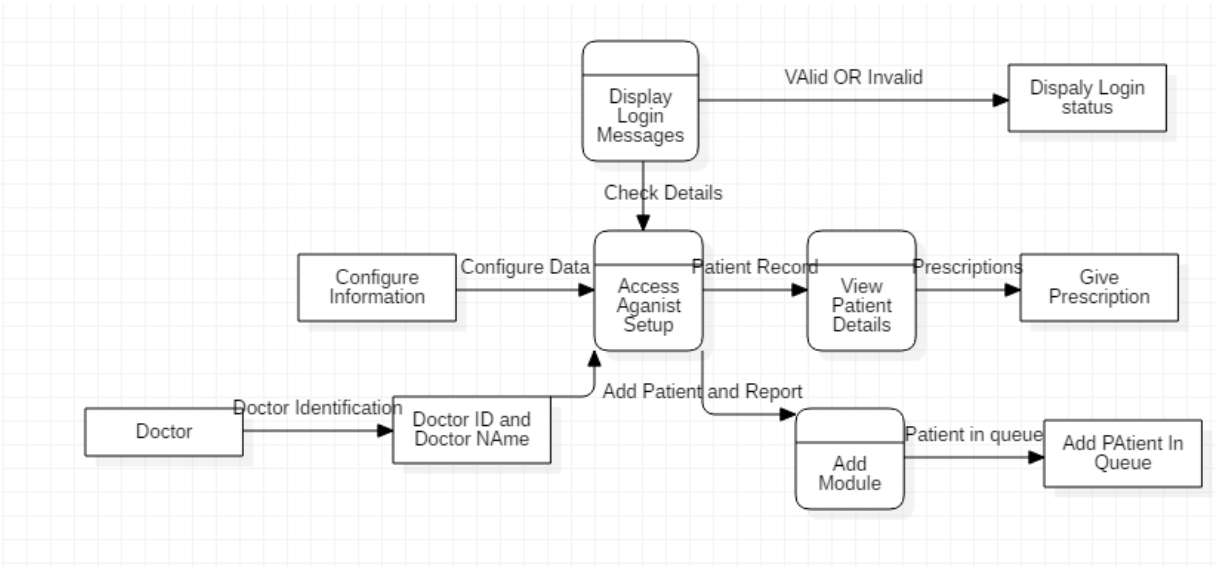


3.4.4 DATA FLOW DIAGRAM

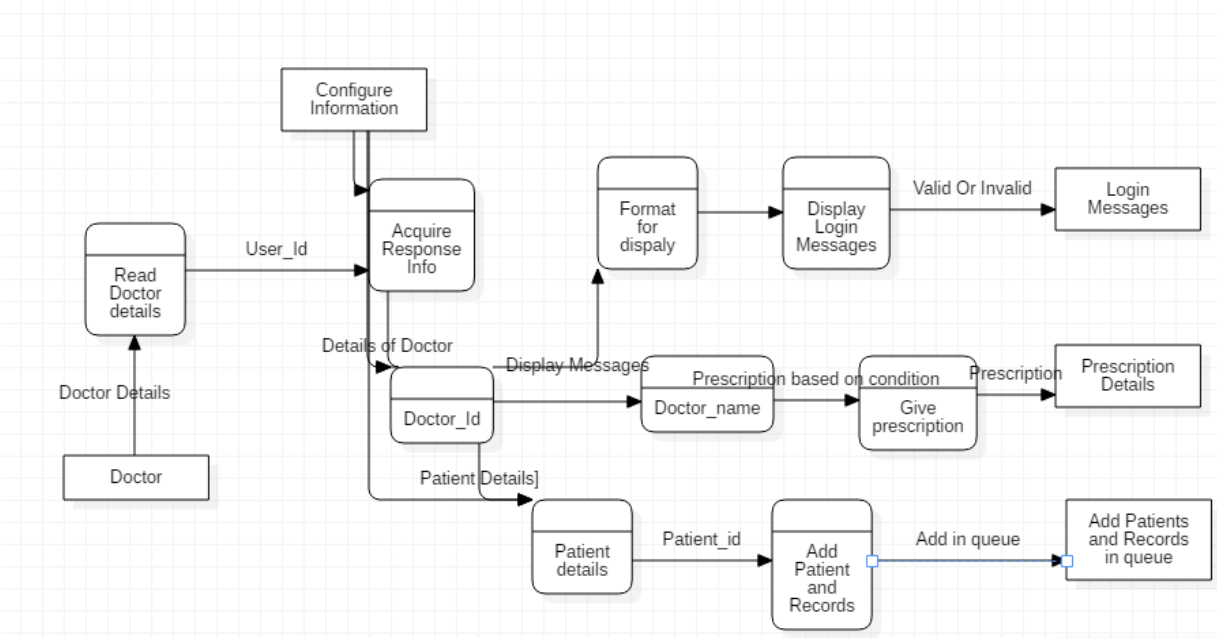
DFD 1:



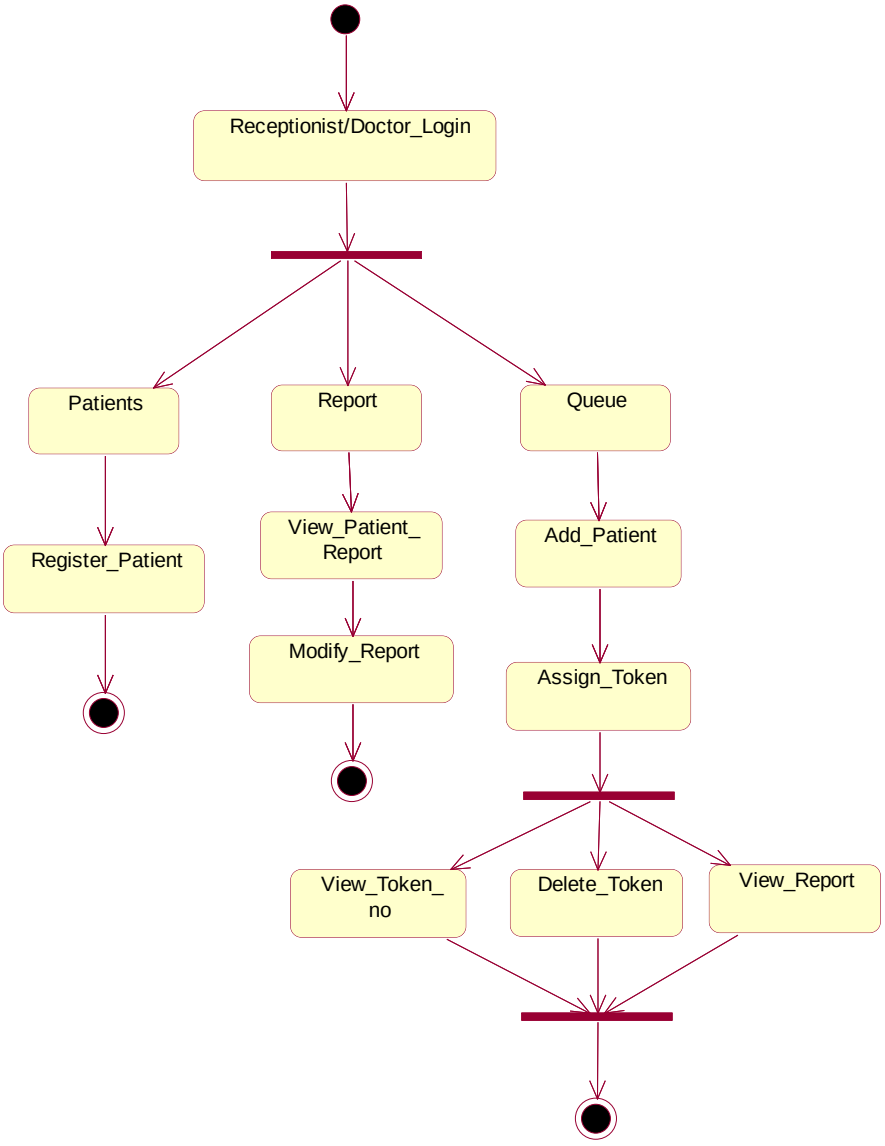
DFD 2:


Display Login Messages
VAlid OR Invalid
Dispaly Login status
Check Details
Configure Information
Configure Data
Access Aganist Setup
Patient Record
View Patient Details
Prescriptions
Give Prescription
Doctor
Doctor Identification
Doctor ID and Doctor NAme
Add Patient and Report
Add Module
Patient in queue
Add PAtient In Queue

DFD 3:


Configure Information
Acquire Response Info
Format for dispaly
Display Login Messages
Valid Or Invalid
Login Messages
Read Doctor details
User_Id
Details of Doctor
Display Messages
Prescription based on condition
Prescription
Prescription Details
Doctor Details
Doctor_Id
Doctor_name
Give prescription
Doctor
Patient Details]
Patient details
Patient_id
Add Patient and Records
Add in queue
Add Patients and Records in queue

3.4.5ACTIVITY DIAGRAM



4 IMPLEMENTATION

4.3 IMPLEMENTATION DETAILS

```
5  package com.example.hospital;
6
7  import java.util.ArrayList;
8  import android.os.Bundle;
9  import android.app.Activity;
10 import android.content.Intent;
11 import android.content.SharedPreferences;
12 import android.view.Menu;
13 import android.view.View;
14 import android.view.Window;
15 import android.view.WindowManager;
16 import android.widget.AdapterView;
17 import android.widget.AdapterView.OnItemSelectedListener;
18 import android.widget.ArrayAdapter;
19 import android.widget.Button;
20 import android.widget.EditText;
21 import android.widget.Spinner;
22 import android.widget.TextView;
23 import android.widget.Toast;
24 public class Queue_act extends Activity {
25    TextView bac;
26    Button adque;
27    EditText checktime;
28    Spinner sp;
29    ArrayList<String> arr=new ArrayList<String>();
30    @Override
31    protected void onCreate(Bundle savedInstanceState) {
32          super.onCreate(savedInstanceState);
33          requestWindowFeature(Window.FEATURE_NO_TITLE);
34
      getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN
   ,  WindowManager.LayoutParams.FLAG_FULLSCREEN);
35          setContentView(R.layout.activity_queue_act);
36          bac=(TextView)findViewById(R.id.bacak);
37          adque=(Button)findViewById(R.id.queueadd);
38          checktime=(EditText)findViewById(R.id.checkintime);
39          sp=(Spinner)findViewById(R.id.spname);
40          SharedPreferences
   sp21=getSharedPreferences("register1",MODE_PRIVATE);
41          SharedPreferences
   sp2=getSharedPreferences("register",MODE_PRIVATE);
42          SharedPreferences
   sp3=getSharedPreferences("register3",MODE_PRIVATE);
43          SharedPreferences
   sp4=getSharedPreferences("register4",MODE_PRIVATE);
44          SharedPreferences
   sp5=getSharedPreferences("register5",MODE_PRIVATE);
45          SharedPreferences
   sp6=getSharedPreferences("register5",MODE_PRIVATE);
46          SharedPreferences
   sp7=getSharedPreferences("register5",MODE_PRIVATE);
47          String snam11=sp21.getString("patname", null);
48          String snam1=sp2.getString("patname", null);
49          String snam2=sp3.getString("patname", null);
```

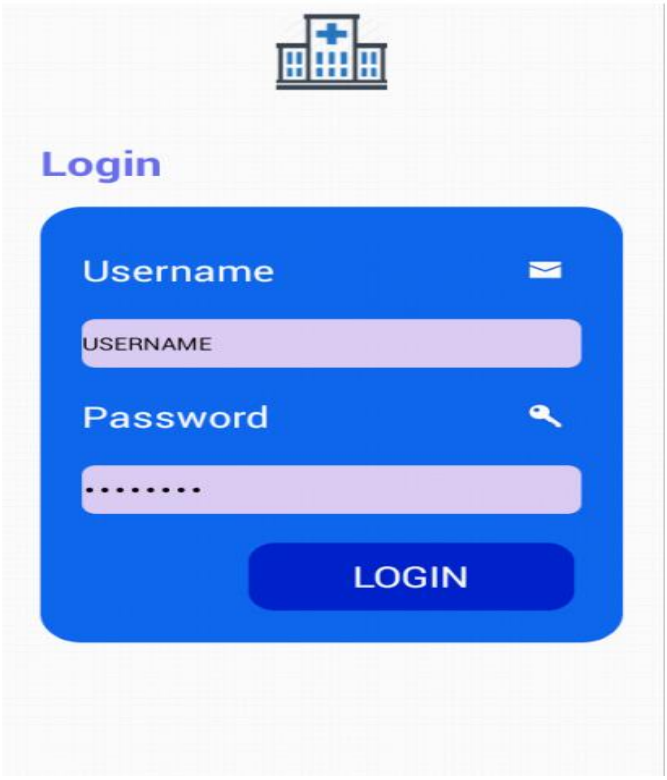
```
50          String snam3=sp4.getString("patname", null);
51          String snam4=sp5.getString("patname", null);
52          String snam5=sp6.getString("patname", null);
53          String snam6=sp7.getString("patname", null);
54          if(snam11!=null)
55          {
56                arr.add(snam11);
57          }
58          if(snam1!=null)
59          {
60                arr.add(snam1);
61          }
62          if(snam2!=null)
63          {
64                arr.add(snam2);
65          }
66          if(snam3!=null)
67          {
68                arr.add(snam3);
69          }
70          if(snam4!=null)
71          {
72                arr.add(snam4);
73          }
74          if(snam5!=null)
75          {
76                arr.add(snam5);
77          }
78          if(snam6!=null)
79          {
80                arr.add(snam6);
81          }
82          final ArrayAdapter<String> ada=new
   ArrayAdapter<String>(this,android.R.layout.simple_spinner_item,arr
   );
83
   ada.setDropDownViewResource(android.R.layout.simple_spinner_dropdo
   wn_item);
84          sp.setAdapter(ada);
85      sp.setOnItemSelectedListener(new OnItemSelectedListener() {
86          @Override
87          public void onItemSelected(AdapterView<?> parent, View
   arg1, int pos,
88                      long arg3) {
89                String s=parent.getItemAtPosition(pos).toString();

90                Toast.makeText(parent.getContext(),"you selected
   "+s, Toast.LENGTH_LONG).show();
91          }
92          @Override
93          public void onNothingSelected(AdapterView<?> arg0) {
94                }
95    });
96         bac.setOnClickListener(new View.OnClickListener() {
97                @Override
98                public void onClick(View arg0) {
99                      Intent ne=new
   Intent(Queue_act.this,Appear_act.class);
100                           startActivity(ne);
101                     }
```

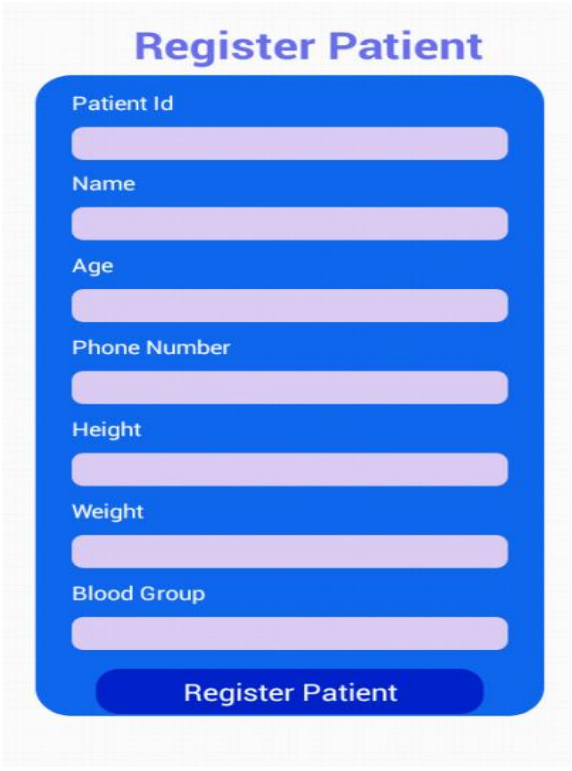
```
102               });
103           adque.setOnClickListener(new View.OnClickListener() {
104                     @Override
105                     public void onClick(View arg0) {
106                           String
   s1=sp.getSelectedItem().toString();
107                           String
   s=checktime.getText().toString();
108                           int a=Integer.parseInt(s);
109                     if(a==1)
110                           {
111                                 SharedPreferences
   spque1=getSharedPreferences("queue1",MODE_PRIVATE);
112                                 SharedPreferences.Editor
   edque1=spque1.edit();
113                                 edque1.putString("User",s1);
114                                 edque1.putString("check",s);
115                                 edque1.commit();

116                           }
117                           else if(a==2)
118                           {
119                                 SharedPreferences
   spque2=getSharedPreferences("queue2",MODE_PRIVATE);
120                                 SharedPreferences.Editor
   edque2=spque2.edit();
121                                 edque2.putString("User",s1);
122                                 edque2.putString("check",s);
123                                 edque2.commit();

124                           }
125                           else if(a==3)
126                           {
127                                 SharedPreferences
   spque3=getSharedPreferences("queue3",MODE_PRIVATE);
128                                 SharedPreferences.Editor
   edque3=spque3.edit();
129                                 edque3.putString("User",s1);
130                                 edque3.putString("check",s);
131                                 edque3.commit();

132                           }
133                           else if(a==4)
134                           {
135                                 SharedPreferences
   spque4=getSharedPreferences("queue4",MODE_PRIVATE);
136                                 SharedPreferences.Editor
   edque4=spque4.edit();
137                                 edque4.putString("User",s1);
138                                 edque4.putString("check",s);
139                                 edque4.commit();

140                           }
141                           else if(a==5)
142                           {
143                                 SharedPreferences
   spque5=getSharedPreferences("queue5",MODE_PRIVATE);
144                                 SharedPreferences.Editor
   edque5=spque5.edit();
145                                 edque5.putString("User",s1);
```

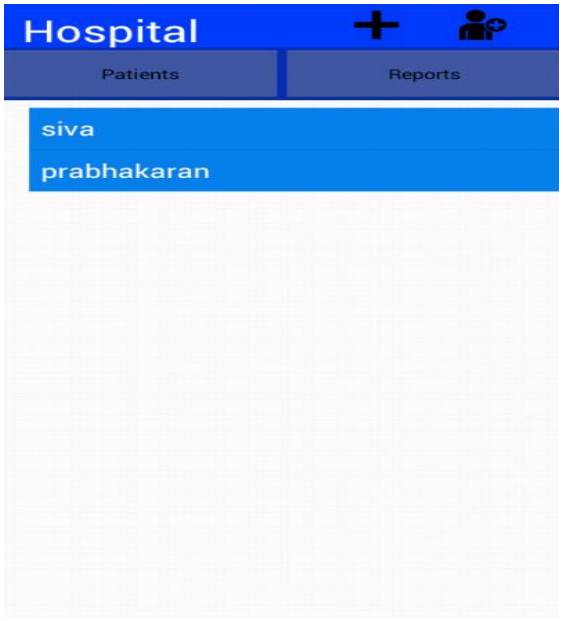
```
146                                     edque5.putString("check",s);
147                                     edque5.commit();

148                             }
149                             else if(a==6)
150                             {
151                                     SharedPreferences
   spque6=getSharedPreferences("queue6",MODE_PRIVATE);
152                                     SharedPreferences.Editor
   edque6=spque6.edit();
153                                     edque6.putString("User",s1);
154                                     edque6.putString("check",s);
155                                     edque6.commit();

156                             }
157                             else if(a==7)
158                             {
159                                     SharedPreferences
   spque7=getSharedPreferences("queue7",MODE_PRIVATE);
160                                     SharedPreferences.Editor
   edque7=spque7.edit();
161                                     edque7.putString("User",s1);
162                                     edque7.putString("check",s);
163                                     edque7.commit();

164                             }
165                             else
166                             {
167                                     SharedPreferences
   spque8=getSharedPreferences("queue8",MODE_PRIVATE);
168                                     SharedPreferences.Editor
   edque8=spque8.edit();
169                                     edque8.putString("User",s1);
170                                     edque8.putString("check",s);
171                                     edque8.commit();

172                             }
173                             Toast.makeText(Queue_act.this, "Token
   Number Added Sucessfully",Toast.LENGTH_SHORT).show();
174                             Intent ne=new
   Intent(Queue_act.this,Appear_act.class);
175                             startActivity(ne);
176                     }
177             });
178         }
179         @Override
180         public boolean onCreateOptionsMenu(Menu menu) {
181
      getMenuInflater().inflate(R.menu.activity_queue_act, menu);
182             return true;
183         }
184   }
185
```

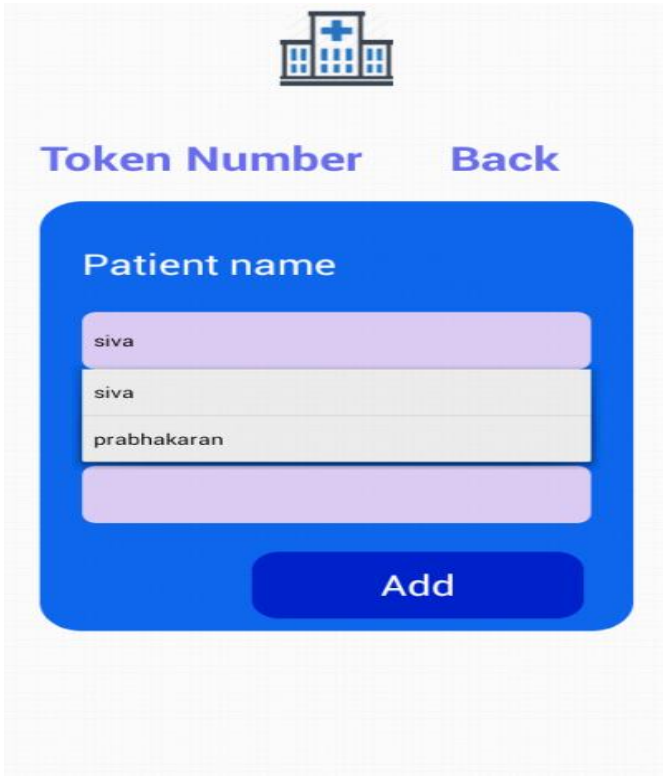
5.TEST RESULTS

5.1 TEST CASES

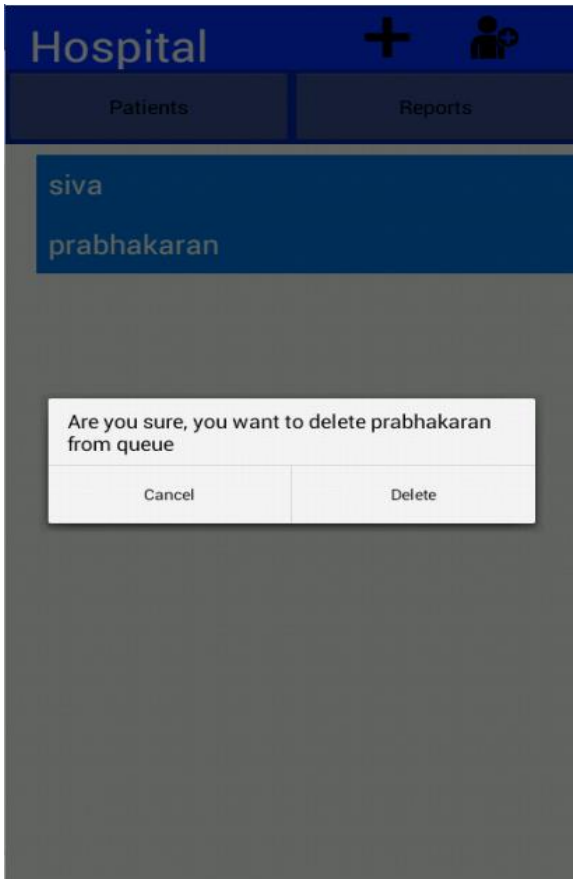


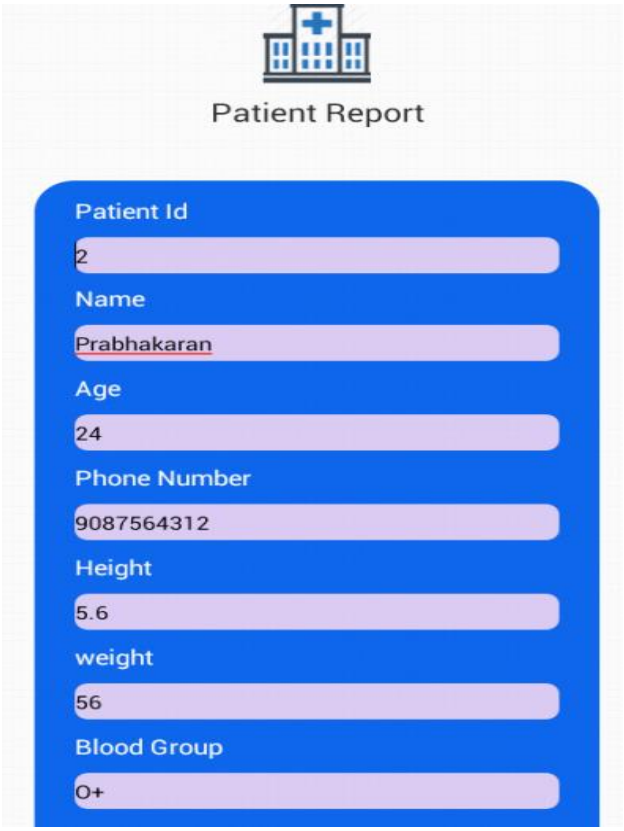


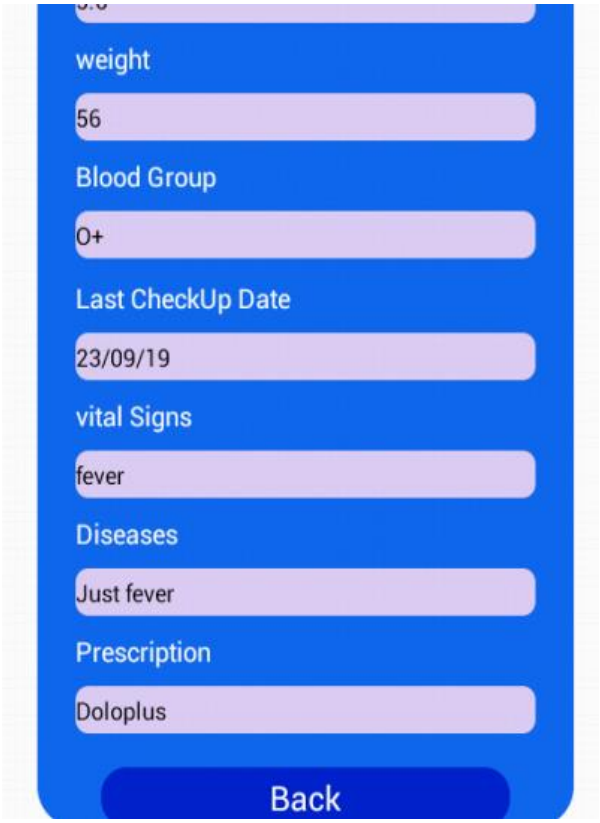

Hospital
Patients
Reports
siva
prabhakaran


Token Number
Back
Patient name
siva
siva
prabhakaran
Add


Hospital
Patients
Reports
siva
prabhakaran
prabhakaran
Token Number 1
Delete
Patient report


Hospital
Patients
Reports
siva
prabhakaran
Are you sure, you want to delete prabhakaran from queue
Cancel
Delete


Patient Report
Patient Id
2
Name
Prabhakaran
Age
24
Phone Number
9087564312
Height
5.6
weight
56
Blood Group
O+


weight
56
Blood Group
O+
Last CheckUp Date
23/09/19
vital Signs
fever
Diseases
Just fever
Prescription
Doloplus
Back

6 RESULTS AND DISCUSSIONS

I developed an app for Clinic called Triage Clinic using the Android Pprogramming. It is very efficient for the patient and saves the time of the patient.Doctor can view the patient report it consists of Height, Weight, Blood Presscure etc. According to that they can give their prescription. This app can fit for any clinic and reduce the manual work. Data stores in a secured manner and it is avaliable to the authenticated person.

7 CONCLUSION AND FUTURE WORK

7.1 CONCLUSION

Most health-related appointments with telemedicine technology are "almost" not far from one day, and the election is ultimately more than an exception. Telemedicine is an exciting technology and promises to transform healthcare for the benefit of all. As the population grows faster than the optimal development of available physicians and facilities (institutional beds, hearing labs, day care centers, etc.), this technique should be adapted to ensure that all caregivers are minimally receptive. Provided, or better. and more people in an organization will always be able to physically visit, regardless of providers and their happy where patients "go" from, and need constant monitoring in search of effective measures and, of course , To lead a situation that they do not want only to visit their doctors. This will help solve many problems currently challenging the system. Facilities will reduce the burden on patients, doctors will have to travel less, and more time and effort will be devoted to patients who need such care. Telemedicine will definitely improve communication and satisfaction. Now put pressure on yourself. It is not easy to change anything. Replacing the old order and using the new one can be difficult and painful, and is a process that is initially forced to deal with varying degrees of resistance. However, it is very unwise to keep things "fresh". Once rotted, things get "old" and soon all 112 go bad, which is undesirable at any time. Consequently, upgrades are necessary. However, to make it a common place, a long pregnancy is required. This is particularly the case in the health industry, where ideas and ways of doing things are protected from jealousy and strongly opposed.

7.2FUTURE WORK

As far as our project is concern , we have just finished our front end of the project that is in the form of a mobile application. In the future, we have planned to develop a database and merge the database with the front end application.

8. REFERENCES

1. https://codelabs.developers.google.com/android-training/

2. https://developer.android.com/