

**PROJECT REPORT
ON
MOTHERHOOD APP**



**DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH
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**DEVELOPMENT OF AN ANDROID APPLICATION NAMED
“MOTHERHOOD APP”**

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

OCTOBER 2020

APPROVAL

This Project title “MOTHERHOOD App”, submitted by Md.Jakaria Islam, ID No: 152-15-434 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 8th October 2020.

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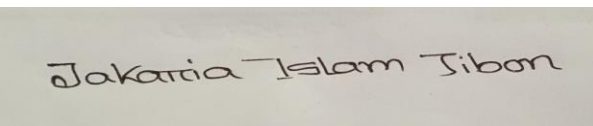
I hereby declare that, this project has been done by me under the supervision of **Ms. Nadira Anjum Nipa, Lecturer, and Department of Computer Science & Engineering** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

One of the most difficult tasks in staying fit for a pregnant woman during pregnancy. My Motherhood app can help a pregnant woman to make herself overall fit before during and after pregnancy. She can connect herself all time with a doctor without going to the hospital. So she can take all treatment from her home. During pregnancy it's so difficult for a pregnant women to move anywhere. so this app is best for pregnant women.

"MOTHERHOOD APP" is an android application and there will be two part of this application. One part for pregnant patient and another part for Doctors. They will exchange their information each other by sending message or through email. User can easily communicate and give their feedback during the pregnant period and doctors will monitor the patients treatment period. This application is time saving for both user and doctors. In this application, User can take appointment and suggestions of doctors easily while doctors can take follow up of patient from anywhere. And this app has some other features, including calorie counter and meal plans and more. So, User can easily check calorie of their food while they are taking those food.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Motherhood App is an android application that specially designed for the pregnant patients who can directly consult a doctor through message or sending email without visit a hospital or doctor chamber. Actually I built my application that name “Motherhood App” app is for doctors and pregnant patients, thus they can connect and consultant easily each other from their home. In this app I add a feature where pregnant patients don’t need to visit a doctor chamber in primary situation to take any appointment and saving their times and transport costs. It has some other features and the key features are-

- Doctor List.
- Chat Box.
- Due Date Calculator.
- Ovulation calculator.
- Pregnancy App.
- Favorites.

1.2 Project objective

- To saving time for finding doctor.
- To appoint a doctor for health issue.
- To develop it with the most effective way for the user.
- To easily connect with the patient.
- To add a direct texting system with doctor.

1.3 Methodology

Here, we can see that 49% people use internet of the total population amongst them we can assume that 15-20% people in rural area use internet. Further we also can see that 46% is the mobile internet user of the total population whether we can conjecture that about 13-15% in rural area people uses the mobile internet.

Most of the family member of our country are too much engaged in work that they don't have a little bit of time to take a proper care for a pregnant patient. Just because of their less consciences in this matter anything can happen even they can die. Most of the people of our country are villagers but the treatment system is city based that's why they do not get the required treatment. Thinking about the fact, I have made this app.

1.4 Organization of the report

This report is organized as follow: Chapter 2 describe about the Background of the whole system. It also narrates about the implementation of Firebase service. Chapter 3 contains the Requirement and Specification. It also contains the features of Firebase and also in this part will describe the permission needs from user part to use the application. Chapter 4 will describe the Design Specification. In this part the whole project structural description has been added. Chapter 5 narrates the system test & the system result of this project. Finally Chapter 6 includes the full project with conclusion, limitation & future plan of my project as well.

1.5 Project Justification

It's just not an app it's all about my dreamy platform. I'm here to make a start for helping around our patients & helping in digital platform in this digital era. There are many feature in this project. Some extended and possible features are listed below:

- Pre tips of Pregnancy
- Post tips of Pregnancy

Nutration.

- Food list.
- Due date Calculator.
- Ovulation Calculator.
- Pregnancy by Week.
- Sending message, email and make call to the Doctor.
- Online Prescription (Future Plan).
- Online Medicine delivery (Future Plan).

CHAPTER 2

BACKGROUND

2.1 Introduction

For developing my whole project, I have follow some process. First of all, patient must be entered to access my app then she can visit a whole process easily from my app. Pregnant women can easily contact with doctors and chat with them. Patient can also learn how to main their food system and which food they should eat or ignore everything are available in this app. Before pregnancy they can also gather knowledge about their period time. During pregnancy how a pregnant woman can fit her everything are available here. After delivery what kind of food they should eat and how they can care their new born children are also available in this app. They can check doctor list and chat with the doctor who is better for them. Doctors can help them with this app without going to the hospitals or patient's homes. Patient can call an ambulance by this app with an emergency number.

2.2 System Life Cycle

System life cycle is an organizational process of developing and maintaining systems. It helps in establishing a system project plan, because it gives overall list of processes and sub-processes required for developing a system. An effective System Development Life Cycle should result in a high quality system that meets customer expectations, reaches completion within time and cost evaluations, and works effectively and efficiently in the current and planned Information Technology infrastructure.

Here the figure 2.2 that will show the Different Phase of Software Development Life Cycle.

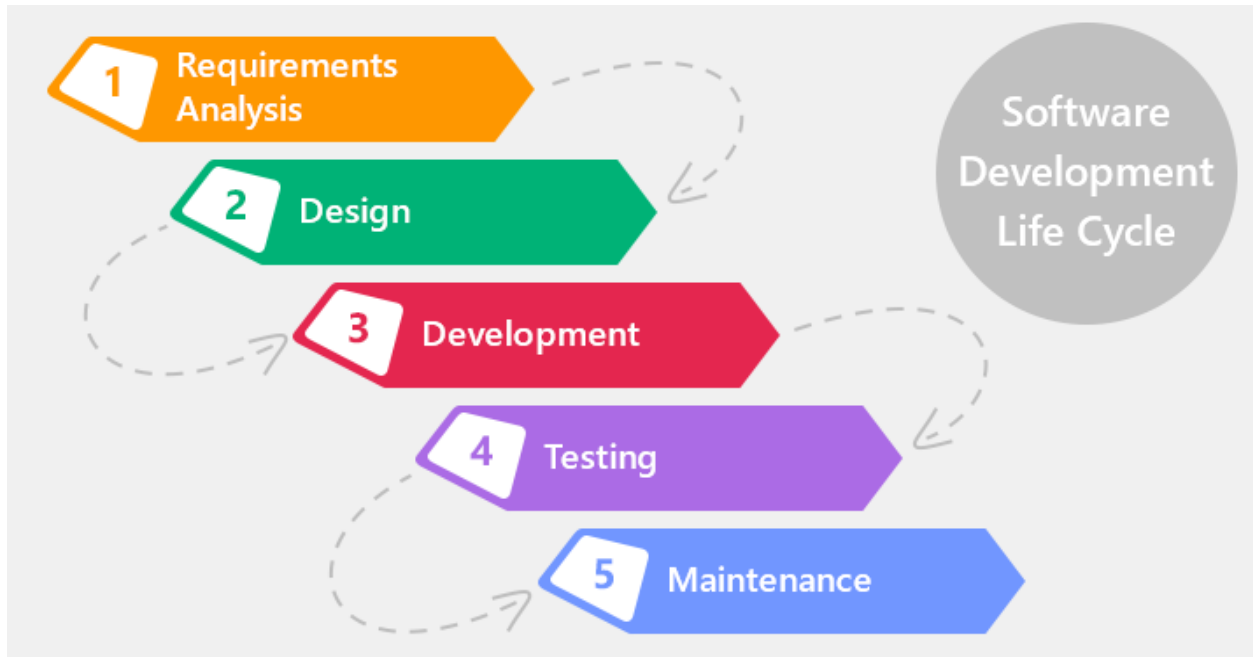


Figure 2.2: Different Phase of Software Development Life Cycle [1]

System Development Life Cycle (SDLC) means combination of various activities for developing a system. In other words, I can say that various activities put together to develop a system are referred to as system development life cycle. In the System Analysis and Design terminology, the system development life cycle means Software Development Life Cycle.

Following are the different phases of software development cycle:

- Preliminary study
- Feasibility study
- Detailed system study
- System analysis
- System design
- Coding
- Testing
- Implementation

- Maintenance
- Review

2.3 Phases of Software Development Life Cycle

This section describes the different phases and related activities of system development life cycle in details. Here the figure 2.3 that will show the system development life cycle process.

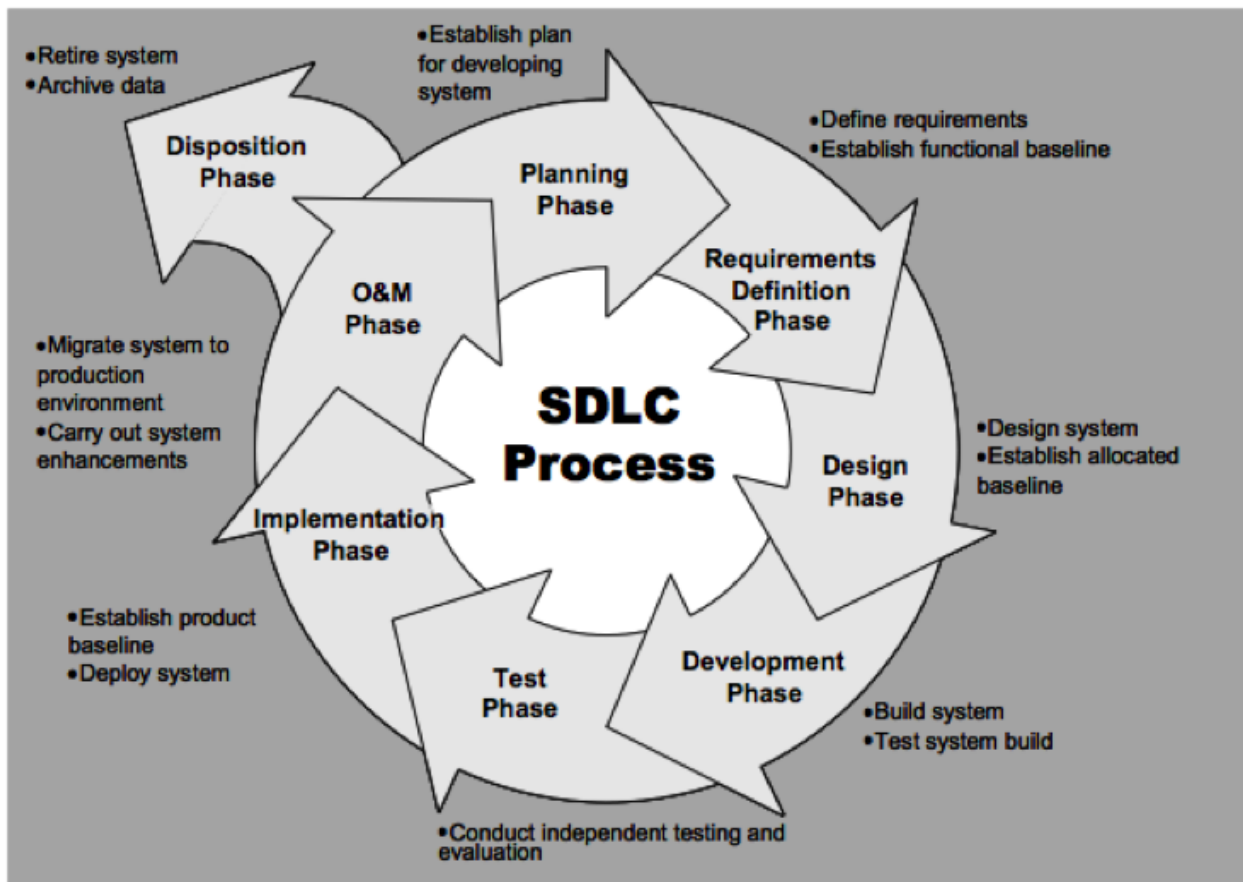


Figure 2.3: Process of System Development Life Cycle [2]

2.4 System Study/Initial Idea

This study is the first stage of System Development Life Cycle. This stage gives a clear picture of what actually the physical system is? After completing the system study, a system proposal is prepared by the system analyst (who studies the system) and placed before the user. All projects must start with an initial idea. Usually, this consists of a brief definition on what is the project all about, what is its purpose and what the project aims to accomplish. How will the success of the project be measured?

To describe the system study phases more analytically, I would say that system study phases through the following steps:

- Problem identification & project initiation
- Background analysis
- Interface of findings

2.5 Feasibility Study

Expanding on the Initial Idea, the Feasibility Study involves drawing up the terms of reference, which state the objectives and scope of the project, how long it should take and how the results should be presented. The terms of reference are usually drawn up by senior management. The feasibility study must determine if the development of the project is justified in terms of economic and organizational terms.

The main role of the analyst in the feasibility study is to analyze the current system at a high level. Data Flow Diagrams (DFD) are used to describe how the current system performs and to illustrate known problems.

The system (Pregnancy App) I'm trying to build a lot of potentials. The application system for helping the user called Pregnancy App with many unknown person and also helping an

unemployed person to earn money all over the world. The platforms I have chosen are Android Studio, Java programming language to stored data.

2.6 Apps Comparison

From a particular feature, this project is similar like an existing app title is “Pregnancy Tracker: Baby Bump”. But this project has more feature than Pregnancy Tracker: Baby Bump and it is more significant. In Motherhood App the new feature is Online Video Call by Doctor. Patient can get any Advised of this App.

Another feature is online sharing system. Here a Patient may search any Doctor or he/she may share any problem so that Doctor may contact with them. This application will work like a advising also. Also online free chatting system is available. So that no need for external call or email to any user. They may contact each other via app.

There also another similar project named is “Hello Belly”. Also that project is little bit similar with Motherhood App. But there have many limitations. They made it with some fixed data. And user have to must use these data. This is for Bangladeshi People. Anyone can open from any part of this country and also they may find expert from their locality. So this feature makes my app more significant than ‘Hello Belly’.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Introduction

When developing any system, there must need some requirement. So Motherhood App also need some requirement specification. First of all user needs a smart phone. And the smartphone must need supported android OS. I know that, there are many OS available in global market. Android, IOS, Windows and blackberry are popular among of them, but in initial stage my project Motherhood App will support only Android OS. These types of requirement is for user (patient and doctor). My future goal is creating a trustful media with this project. Millions of user will use this app. So to backup and store user's data Pregnancy App needs huge backup. For initial stage I'm using java 8 version. And there are some limitation in using java 8 version. For testing purpose this is great. But when user will more, then my plan should change and must use paid version. So that, then my requirement will also change.

3.2 Permission Requirement

To use any android application, user must need provide some permission. One thing is very important here and that is, Android has launched total 18 versions. Android 11 is a latest version that I use to build & run my Project. From android there are lots of new feature. But the lower version from android many things was not available. When any user install an app the all permission was automatically granted.

The set of permissions are need for using Motherhood App is listed below:

- Internet Permission
- Read Internal Storage
- Write Internal Storage
- Call Permission
- Read Wi-Fi state permission
- Read phone state

- If any user reject any permission then the particular feature will not be available for that user.

3.3 Threats to System Security

This is the era of Information Technology. And in this era the most common thread when developing an automated system is Data Security. Though Pregnancy App is fully automated system and here valuable data is available so the first threat is Data security. There will be many attack from hacker. So first of all we have to tackle this problem.

Another threat is, in this Motherhood app there are 2 types of user. One is expert (doctor) and another is General user (patient). So here one user may say that they expert but without having any experience in that sector. So that this is also a thread to find out real talented people.

Another thread will be tackle abusing the app. suppose Pregnancy will work as a medium. Here general user and expert both is available. The user want that the service provider should come and provide him service. So in this section we cannot give any security after coming home what actually happen.

On the other hand I must give a concern in creating fake user.

3.4 Database Security

In this project both offline database has been used. For offline database I have used SQLite database. While using database there are an issue of giving security of these database

```

SQLite format 3
1
Z
    "id"    INTEGER NOT NULL UNIQUE,
    "title" TEXT,
    "details" TEXT,
    "image_name" TEXT,
    PRIMARY KEY("id" AUTOINCREMENT)
)
CREATE TABLE nutrition (
    "id"    INTEGER NOT NULL,
    "title" TEXT,
    "details" TEXT,
    "image_name" TEXT,
    PRIMARY KEY("id" AUTOINCREMENT)
)
CREATE TABLE "advice" (
    "id"    INTEGER NOT NULL,
    "title" TEXT,
    "details" TEXT,
    "image_name" TEXT,
    PRIMARY KEY("id" AUTOINCREMENT)
)
CREATE TABLE "food_menu" (
    "id"    INTEGER NOT NULL,
    "title" TEXT,
    "details" TEXT,
    "image_name" TEXT,
    PRIMARY KEY("id" AUTOINCREMENT)
)
CREATE TABLE sqlite_sequence(name,seq)
    "id"    INTEGER NOT NULL,
    "title" TEXT,

```

Figure: 3.4 Database

And SQLite will be removed if user clean cache from their device.

3.5 USE CASE Model:

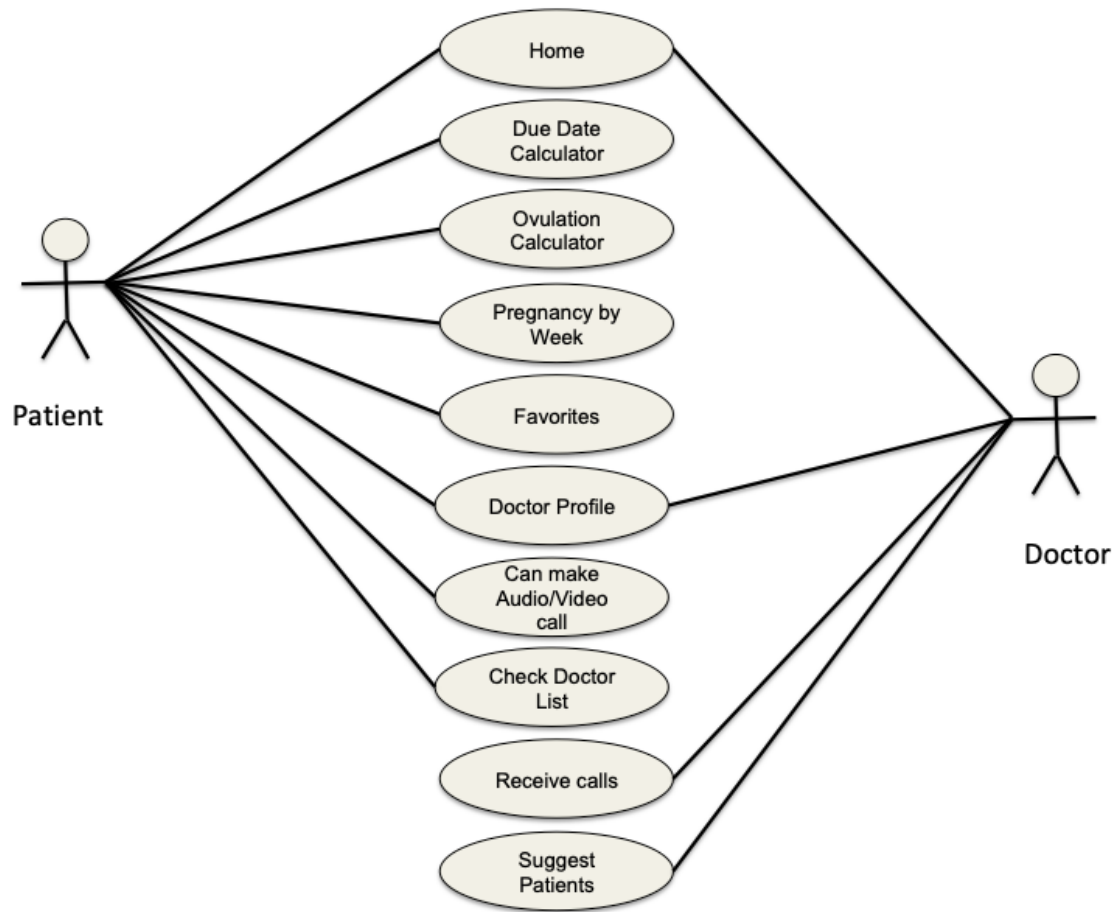


Figure: 3.5 Use case model

General Methodology:

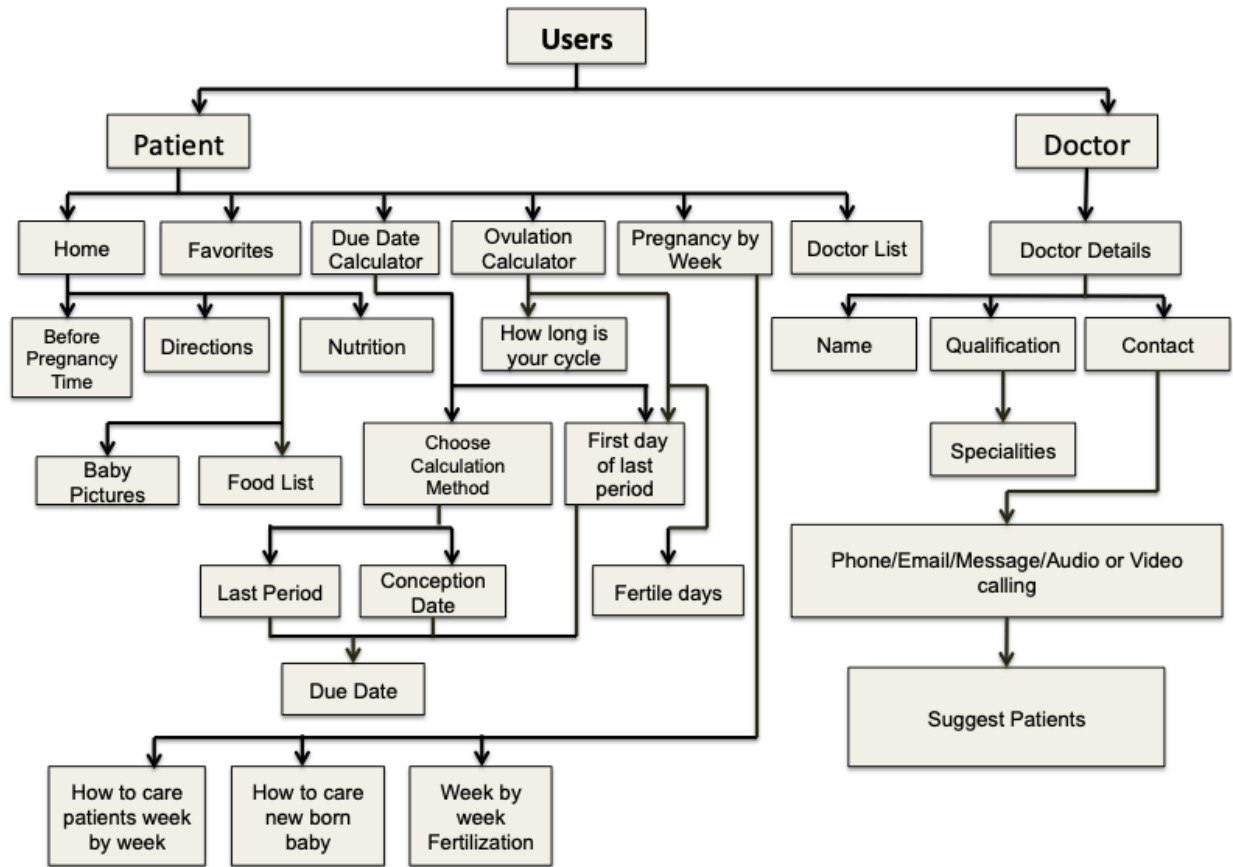


Figure: 3.5 General Methodology

3.6 Conclusion

After completing full requirement specification Motherhood App will work perfectly. This is a project which can help both user (Patient & Doctor). Also I'm trying to reduce the misbirth, abortion and mother died situation. And the patient will find their desire service and the doctor may find their earning source and get proper treatment to patient. Every pregnant patients can visit this app without any log in. They can connect with best pregnancy expert doctors and share their problems. Doctors can make sure the patients how to make them mentally and physically fit. Not only during pregnancy but also before and after pregnancy how a pregnant patient make them fit without going to the hospital are available in this app. Mothers can also gather knowledge about how to make a new born baby physically fit and healthy.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Design & Prototyping

Beyond any doubt, now a day every kind of people have a smartphone. And mobile app is common use in almost every area of human activity. The actual usage of mobile application very much depends on the quality (usability and energetics) of its User Interface (UI). On the other hand, user experience is so important.

In this project used only android design concept. Users can tap, swipe, or pinch this material fabric and it will move according to user interaction. Mobile interfaces are created out of layered material objects like rectangular bars or circular buttons. The other benefit of using material design concept is, looking more gorgeous and more smart than general. User loving this design concept and it is becoming more popular day by day.

4.2 User Interface Prototyping

Prototyping is a means of exploring ideas before you invest in them. All experienced craftspeople and engineers create prototypes of their work before they build anything: Architects create models out of paper or cardboard, or with virtual reality tools. Aeronautic engineers use wind tunnels. Bridge builders create stress models. Software and Web designers create mock-ups of how users will interact with their designs.

User Interface prototyping is a testing and evaluation approach, which is a crucial component of User-Centered Design (UCD) methodology, extensively used in IT projects since the 1990s. This is an iterative analysis technique in which users are actively involved in the mocking-up of the UI for a system. Before the actual prototype testing takes place in the project, the following techniques are necessary for identifying the required functionality of the expected system:

- Drawing design techniques – useful for expressing design concepts in the form of use case or as free-hand sketches and drawing like Rich Picture.

- The context of use analysis – a structural description of user characteristics, task and organizational environment.

4.3 Technology Used

Android Studio: Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on Jet Brains' IntelliJ IDEA software and designed specifically for Android development. Android Studio provides the fastest tools for building apps on every type of Android device. Android studio provides code editing, debugging and testing tools for free.

Android Studio has a strong editor tool for developing creative UI and emulators for different versions to test and simulate sensors without having actual Android devices. It also has a very useful Gradle plugin using which you can create application files (apks) with different configurations. Moreover, it makes exporting and uploading apk on play store easy with a single click. It also has ANT build if you prefer that. In the recent updates Android studio has brought instant run which makes testing even faster and easier.

SDK tools are platform-independent and are required to create any Android app, regardless the version you are developing for. Some of these include: Build tools, Debugging tools and Image tools, among others. Now, some of the most important SDK tools are Android SDK Manager, which provides you resources, platforms and other useful components needed to build apps and manage SDK packages.

AVD Manager: An Android Virtual Device (AVD) is a device configuration that is run with the Android emulator. It works with the emulator to provide a virtual device-specific environment in which to install and run Android apps. The Android SDK provides the AVD Manager tool for creating and otherwise managing AVDs.

Java: Java is a programming language that produces software for multiple platforms. When a programmer writes a Java application, the compiled code (known as bytecode) runs on most operating systems (OS), including Windows, Linux and Mac OS. Java is fast, secure, and reliable. From laptops to datacenters, game consoles to scientific supercomputers, cell phones to the Internet, Java is everywhere! Java programming language need Java Software Development Kit

(JDK) that typically includes a compiler, interpreter, documentation generator and other tools used to produce a complete application.

4.4 APP Start

When a user starts any android application it always follows the following sequence.

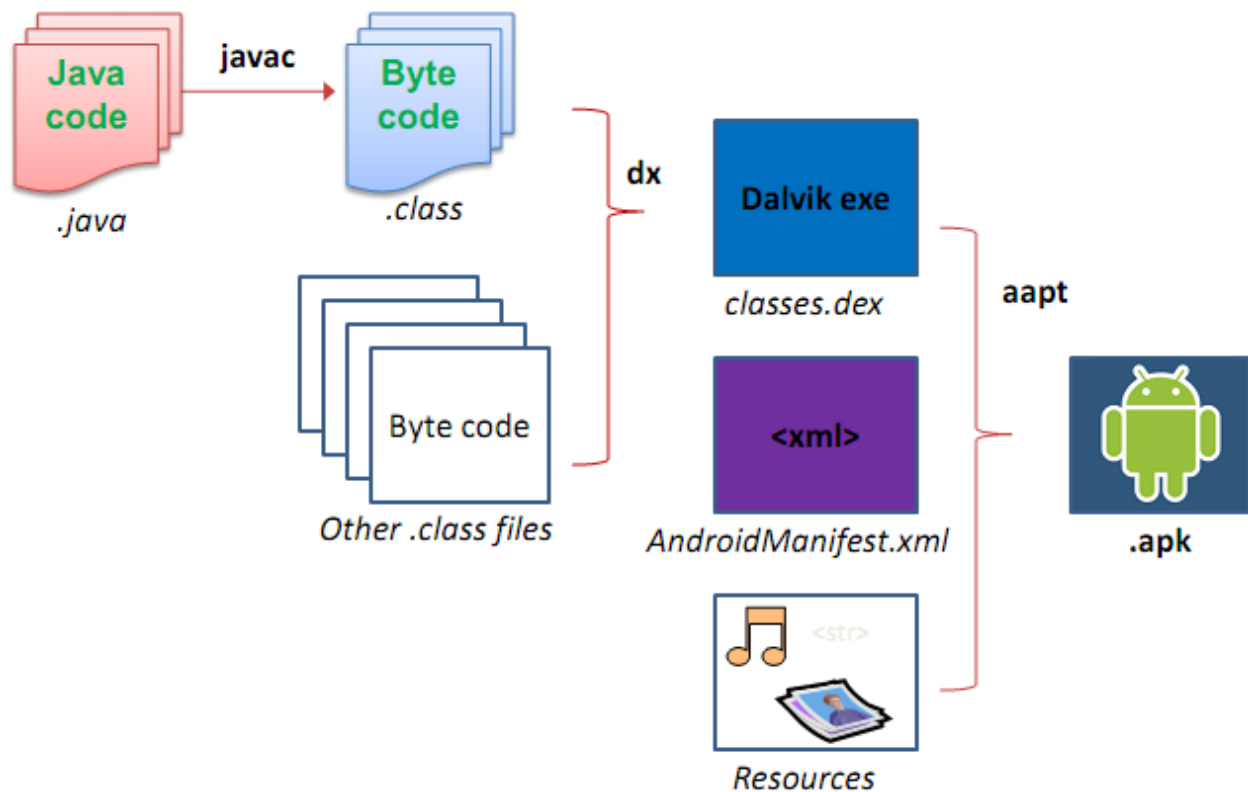


Figure 4.4: How android app start

Every android app follow the sequence. I'm generally write code in java programming language. For first of all it generate a byte code from the java file. This byte code can read only DVM (Dalvik Virtual Machine). This DVM file's extension also here have the android Manifest file. And resource file has there. After combing all this there create an APK file. Which may run on android device.

4.5 Post

Posting is the main feature of Motherhood App. Here user have the option to post any problem or anything. For posting anything user must input some text in the input field. And then user must select the posting category. Such as, chest pain, back pain, stomach pain. Then user may upload photos from their phone gallery or user may capture photo directly. After successfully all field then user is able to post.

4.6 Home Page

Home is the main view page of my Motherhood App. Here User can see before Pregnancy how they check in home. Here directions, nutritions, food list, favorite and baby pictures are available. Patients and doctors both can visit every page.



Figure 4.6 Home page

4.7 Direction

In home page I'm also added direction. In direction the patient see some necessity information which help after Pregnancy. Here lots of tips that only build up for pregnancy patient.

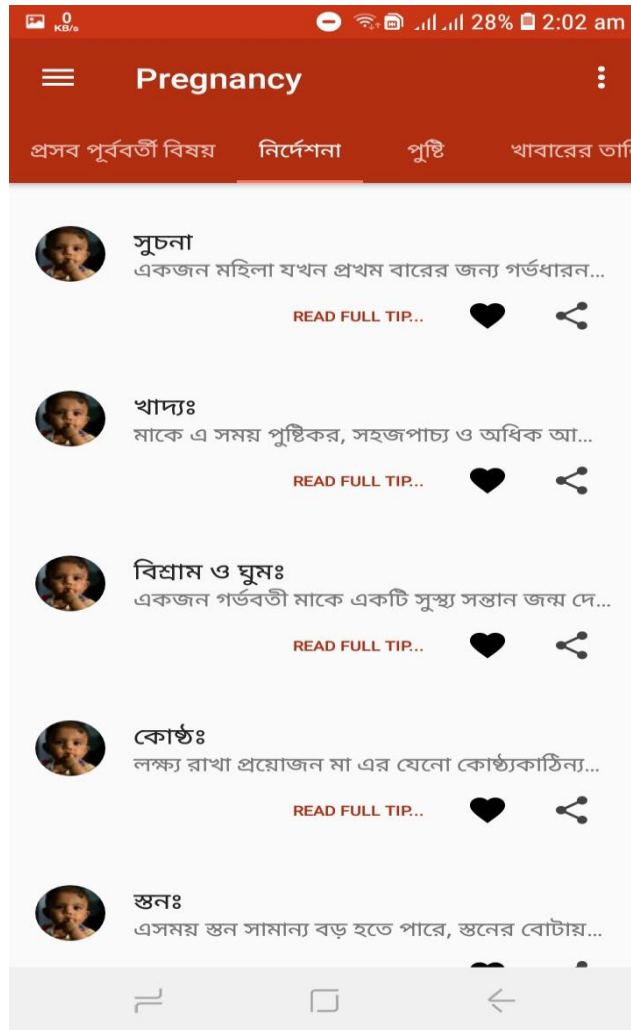


Figure 4.7 Direction

4.8 Nutrition

Here the tips of nutrition that patient need their body and baby also. They baby grow day by day so the nutrition is must for their growth. As we know if the mother eat food then the baby get proper nutrition. So this page is important part also for our apps.

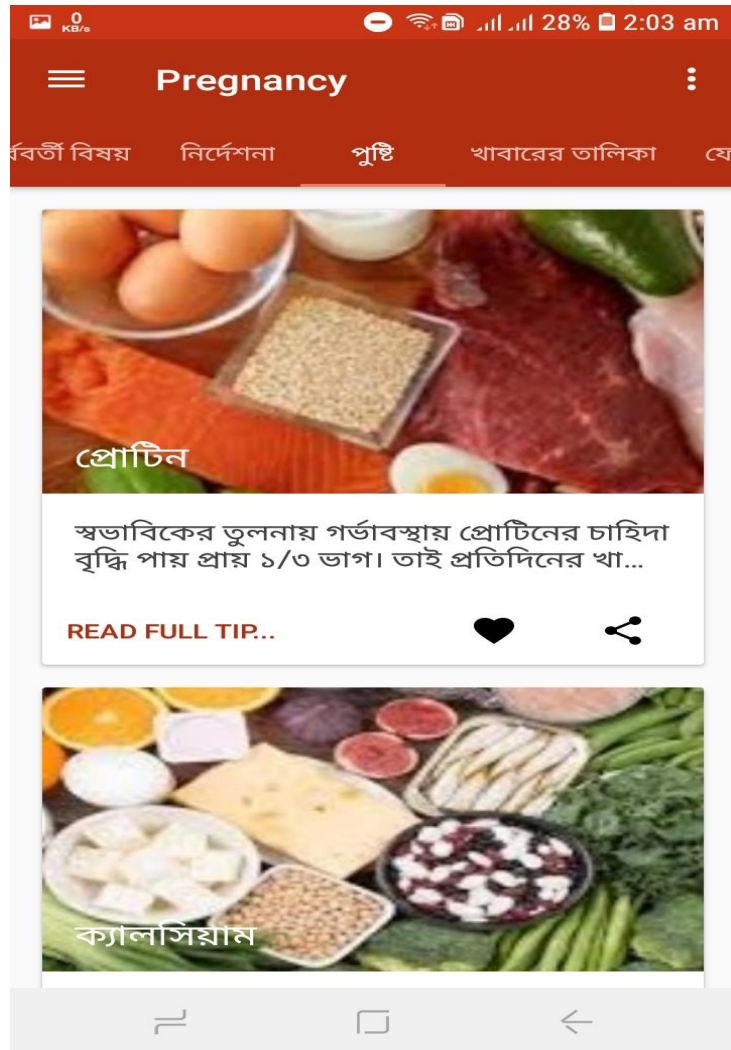


Figure 4.8 Nutrition

4.9 Food list

Food list is the important part of this app. Every Pregnant women need proper food during pregnancy so that must follow this things.

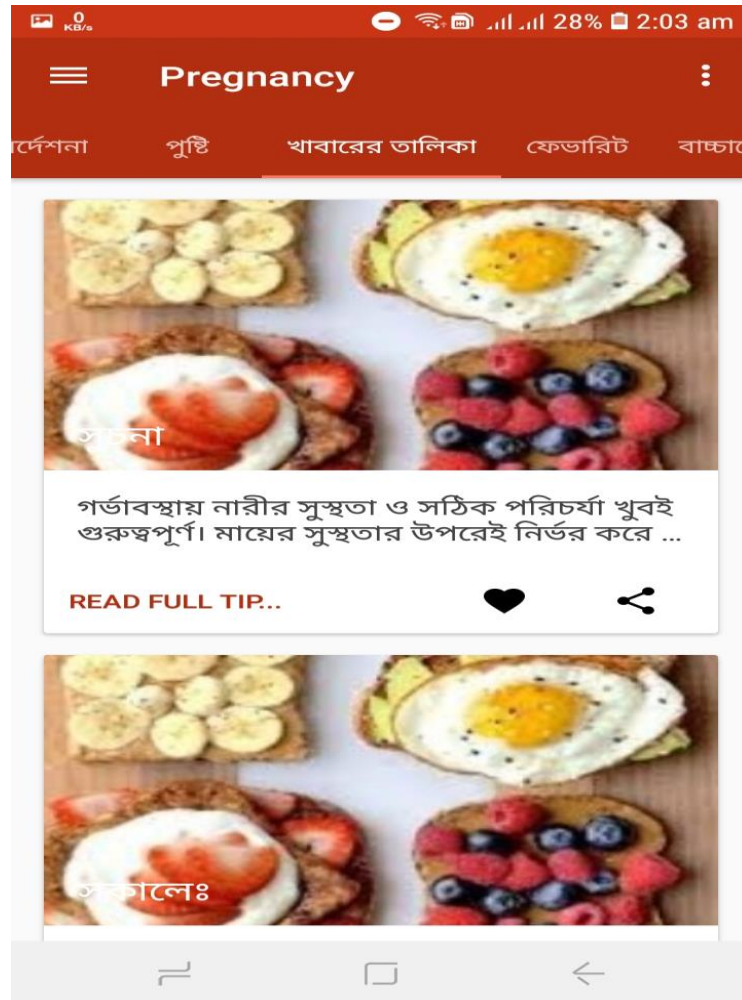


Figure 4.9 Food List

Here the Food. Here breakfast, lunch and dinner time what a patient should eat are available.

4.10 Favorite

Here favorite page use for the patient who like the tips. They click the button and they see the favorite option.

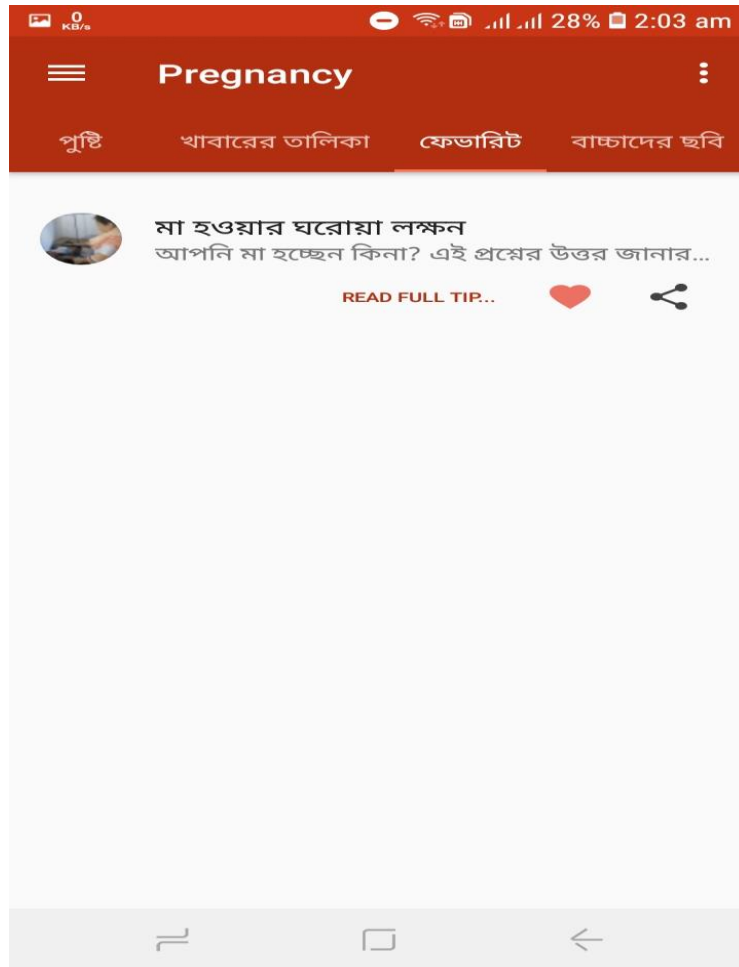


Figure 4.10 Favorite option

Here the read heart button which one indicate the favorite option.

4.11 Baby Pictures

Here some baby picture that inspire the patient and they get excited. They like to save this as wallpaper.



Figure 4.11 Baby Pictures

4.12 Side view

In Pregnancy I'm giving a side view option is this option I have many feature as like due date calculator, ovulation calculator, pregnancy by week, doctor list.

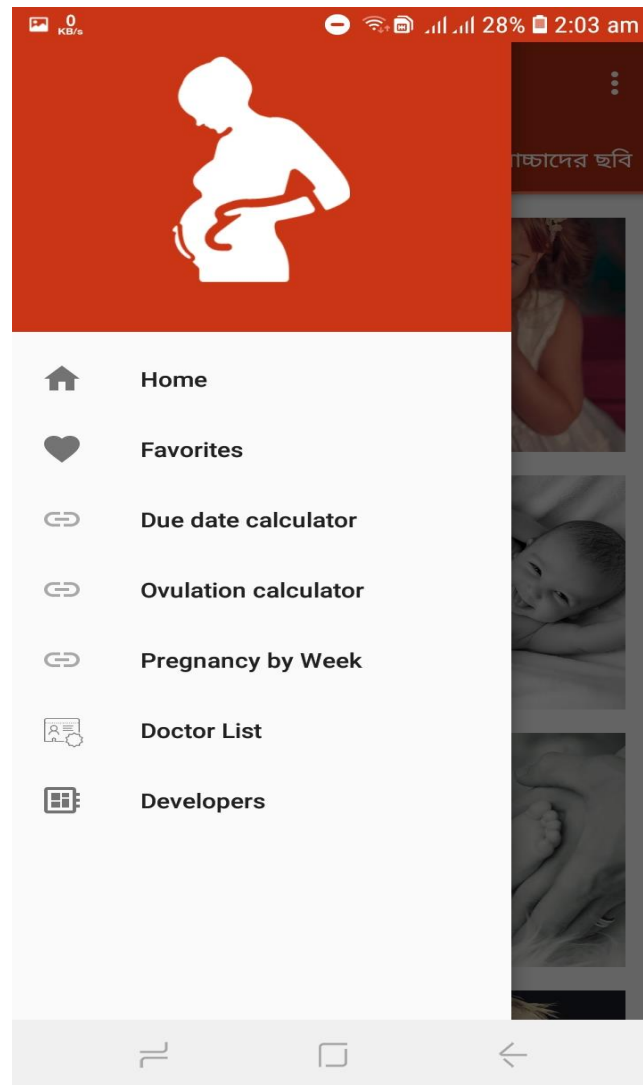
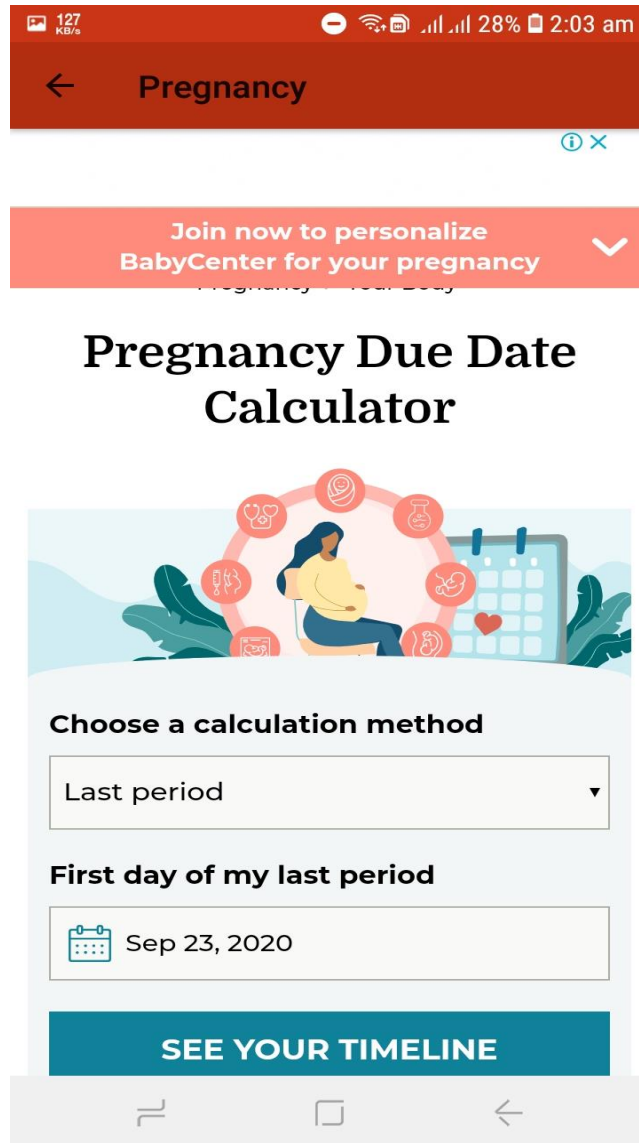


Figure 4.12: Side View of Apps

4.13 Due date Calculator

Motherhood Apps will give the due date calculator opportunity to the user. Every user may use this calculator of their last period of date. Here the calculator give the result how many days are due to delivery. Here everyone connected with each other.



The screenshot shows a mobile application interface for a pregnancy due date calculator. At the top, there is a dark red header with a back arrow and the word "Pregnancy". Below this is a light red banner with the text "Join now to personalize BabyCenter for your pregnancy" and a dropdown arrow. The main title "Pregnancy Due Date Calculator" is centered in a large, bold, black font. Below the title is an illustration of a pregnant woman sitting on a chair, surrounded by various pregnancy-related icons like a stethoscope, a calendar, a heart, and a baby. The interface then prompts the user to "Choose a calculation method" with a dropdown menu currently set to "Last period". Below that, it asks for the "First day of my last period" with a date picker showing "Sep 23, 2020". At the bottom, there is a prominent blue button labeled "SEE YOUR TIMELINE". The entire app interface is shown within a mobile phone frame with a status bar at the top displaying "127 KB/s", signal strength, Wi-Fi, and battery level at 28% at 2:03 am.

Figure 4.13 Due Date Calculator

4.14 Ovulation Calculator

Here Motherhood App Ovulation Calculator use to fertilize their embryo. They calculate their embryo date. In mother embryo day by day its bigger then big.

The screenshot shows the 'Pregnancy' section of the Motherhood App. At the top, there's a red header with a back arrow and the word 'Pregnancy'. Below this is an 'Ads by Google' banner with 'Send feedback' and 'Why this ad?' buttons. A red banner below the ad says 'Join now to personalize'. The main content area is light blue and contains the following text: 'Medically reviewed by [Emily Hu, M.D., FACOG](#), ob-gyn May 8, 2020'. Below this is a form titled 'Tell us the first day of your last period' with a calendar icon and the date 'Sep 23, 2020'. The next question is 'How long is your cycle?' with a dropdown menu showing '28 days'. A large blue button labeled 'SEE YOUR FERTILE DAYS' is positioned below the form. At the bottom of the form, there's a paragraph: 'Our Ovulation Calculator gives you the dates you're most likely to be fertile over the next several months. Mark your'. The bottom of the screen shows standard Android navigation icons.

Figure 4.14 Ovulation Calculator

Patient can see the result of fertile days.

4.15 Doctor information

Here Motherhood App the Doctor information are very much important if patient. Patient communicate through the apps by doctor and tell them their Problems. If the problem critical then doctor advised to meet them so I provide the appointment number also. Here also chat Audio and Video call Option I provide.



Figure 4.15: Doctor Information

If any patient want to connect with the docotrs then visit here through the Motherhood App.

4.16 Audio & video calling

Here Motherhood App I have added Audio and Video calling. In this covid-19 Pandemic situation the doctor and patient can't move just because of the virus so that Patient use the video call and audio call option that so much easier.

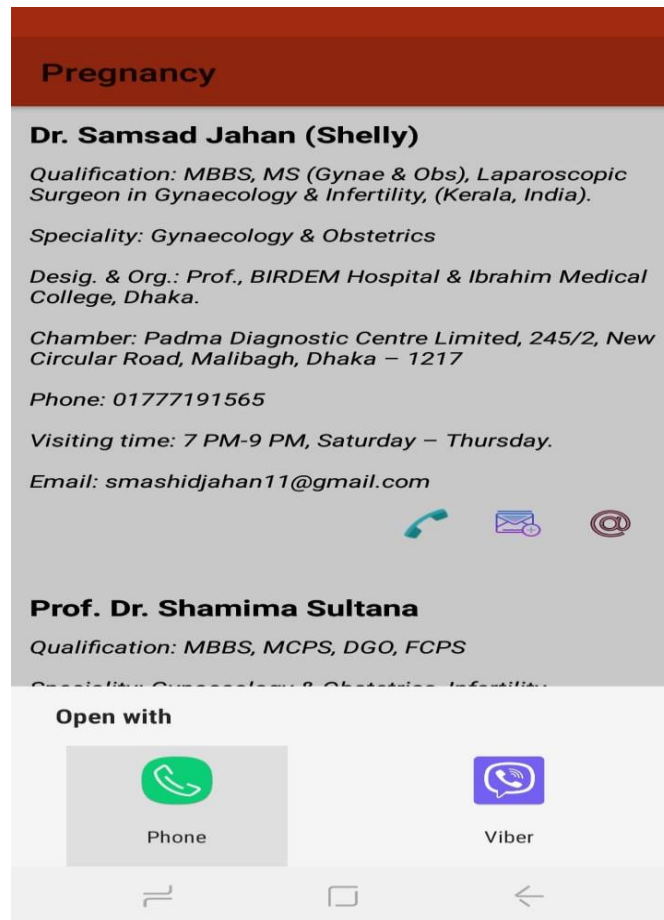


Figure: 4.16 Audio & Video Calling

4.17 Chat

Here Motherhood App I added chat option too. Many women don't share their problems in video call or audio call. So that I have create this to direct chat through the apps by doctor.

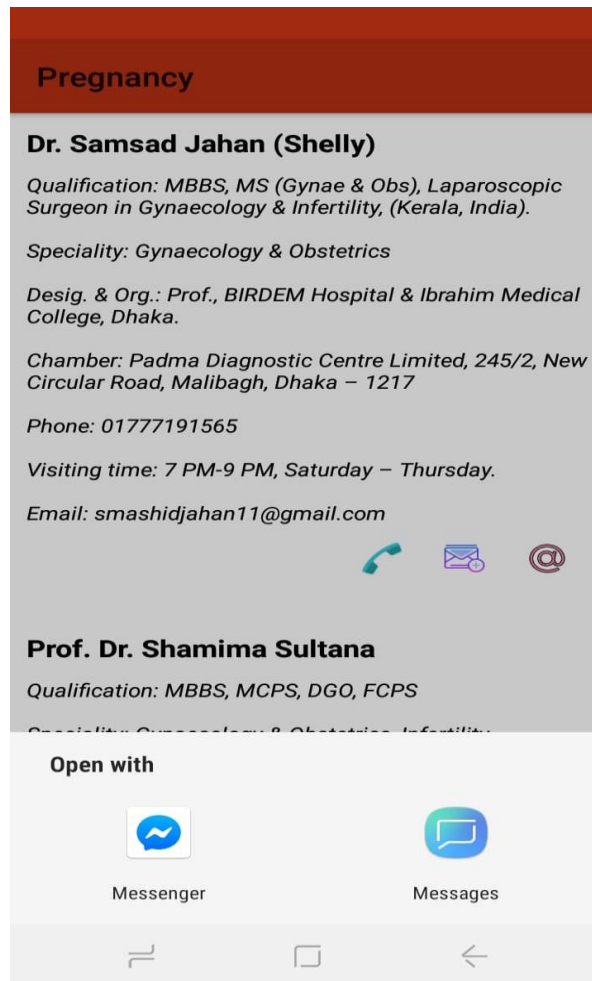


Figure 4.17 Chat Box

4.18 Translator

Here Motherhood apps fully build up by Bangla language because I'm developing this in Bangladeshi rural people. But if anyone wants to translate the tips then just click the share button and select translator is shows the English language.

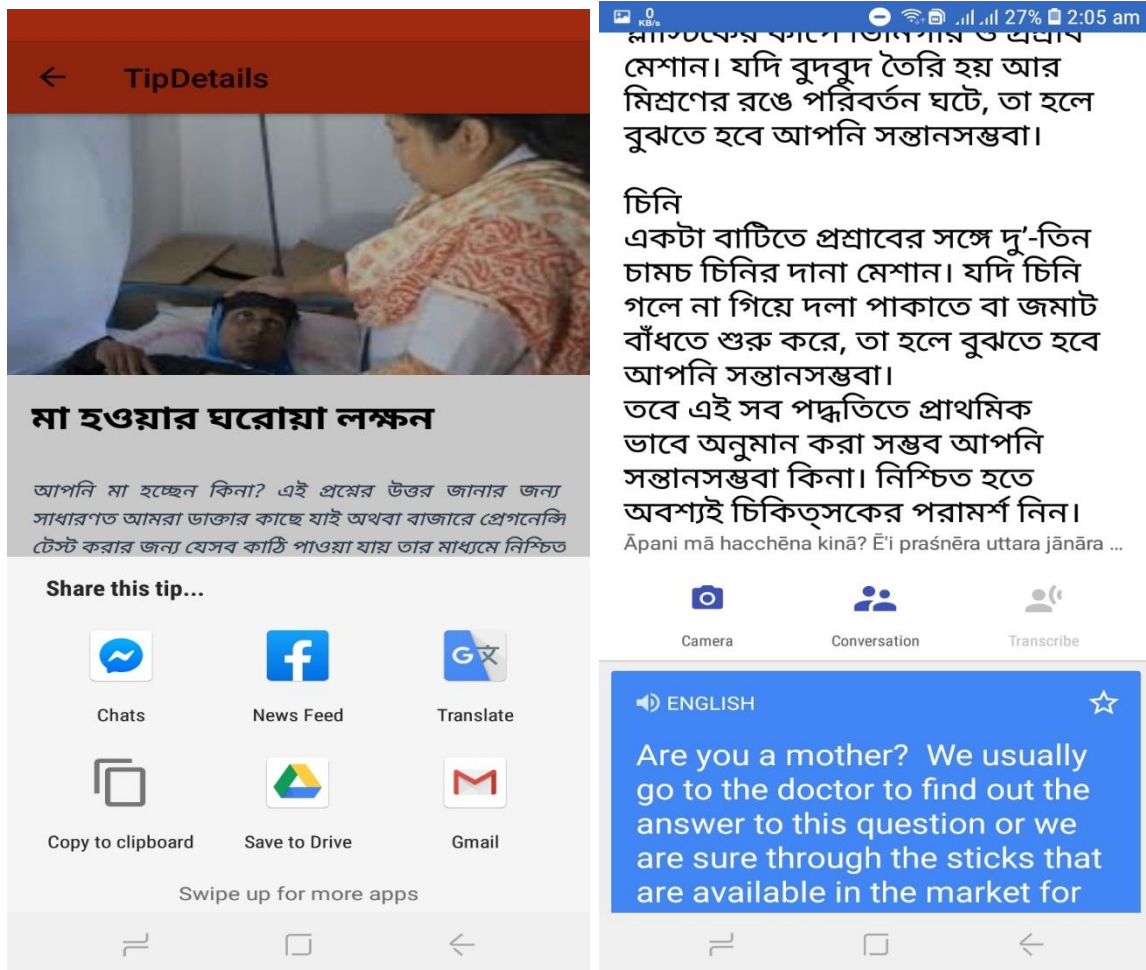


Figure: 4.18 Translator

CHAPTER 5

IMPLEMENTATION & TESTING

5.1 Introduction

When a project is completed, it should have a scope of future implementation. And in this sector there are option to implement Pregnancy App in future. Today it is all about some limited feature. But in future many feature will be included. On the other hand Implementation doesn't mean all time to include new feature. In future I may fix some bug and improve the quality. So there are an option to implement it in future. On the other hand if any user may think some feature is unusable or some is less important they may remove in future. And testing is more important than developing. Testing is the real performance of any system. In Helpmate there are no compromising for testing. As a result user really found a nice and excellent application for android device.

5.2 How it works

When a system developed the testing period start. Many system may test during the period of developing. For Pregnancy App when I developed any feature I have tested the feature on that time. Generally I have tested until the satisfaction output didn't come. Though it killed many time from us but after doing this perfectly today I have developed the system. In generally testing and implementation is vice versa. If testing fail then new implementation starts. Many times the system didn't response as our expected output. Then I have researched with the issue, gathered information about that issue, try to solve it from yourself. But every time if I fail to resolve any problem I went to our seniors, or posted on Stack Overflow or any kinds of Android group. But a pure testing was running. After 100% pass any testing it would accept.

5.3 Goals of Pregnancy App

The basic goals of Pregnancy is helping pregnant women by getting service and to complete service with the help of doctor. I believe that, there are a lot of pregnant women in our country abortion, misbirth during this critical time. So Pregnancy App is the platform to help them and the basic goals of Pregnancy App actually this. On the other hand, there have many pregnant women in our country who want to contact the doctor but facility not available sometime. So Pregnancy App is just for them. May be they don't have enough time, or they are not willing to do. So for helping them this will be a great service provider. So after completing the project I'm sure that the goals of Pregnancy App has been full fill. But there are a huge scope of implementation in future. And I have already some plan of implementation with this.

5.4 Testing

Generally a system testing means testing the whole system. All feature is working or not, all module is are integrated or not this types of thing actually in this part. Actually in testing part this is must clear that, expected output has come or not. If not then fix the particular bug and start testing again. Verification and validation is more important in testing. In Pregnancy App this two feature has been very much focused. Also every data has been checked properly that user may not give any invalid data. After finally Motherhood App is here today.

5.5 Automate user interface tests

User interface (UI) testing lets us confirm that my app meets its functional requirements and achieves a high standard of quality such that it is more likely to be successfully adopted by users. We know there are a lot of android device in the world. So this app should perform same in all the device. On the other hand there are not only just android phone, there are also android tab in market. So user may use this app in tab also. So in big screen the app should look same exactly. In this section Pregnancy App has tested properly. Used many version of design and various resource file to improve the UI looking.

5.6 Test UI Performance

User Interface (UI) is more important than backend service. First of all user will see the UI then will use backend service. So UI is more important than any other component. For this reason in Motherhood App used all latest technology to improve UI performance. A good looking app generally liked by the user.

5.7 Security Testing

Security testing is one of big challenge when developing any system. Everything can be lost if security is less. So security is most important for a system. For this app here all data is stored in database. In database I'm always checking the security. But always checked if no one can leak data, or no one can access data without permission.

5.8 System Testing

System testing generally defines that, testing of a complete and fully integrated a software or a system. Suppose my app may perform as like our expectation but when it is installed in other device it may not perform as like our expectation. So system test defines all kinds of things. It may have dependency of hardware or anything.

To test this application, we should know about the Testing Pyramid which explains how my app should include the three types of tests: small, medium, and large:

- **Small tests** are unit tests that can run in insulation from production systems. They typically mock every major component and should run firstly on the machine.
- **Medium tests** are integration tests that sit in between small tests and large tests. They complete several components, and they run on emulators or real devices.
- **Large tests** are integration and UI tests that run by completing a UI workflow. They confirm that key end-user tasks work as expected on emulators or real devices.

Here the figure 5.8 that will show the testing pyramid. It actually show the step of testing.

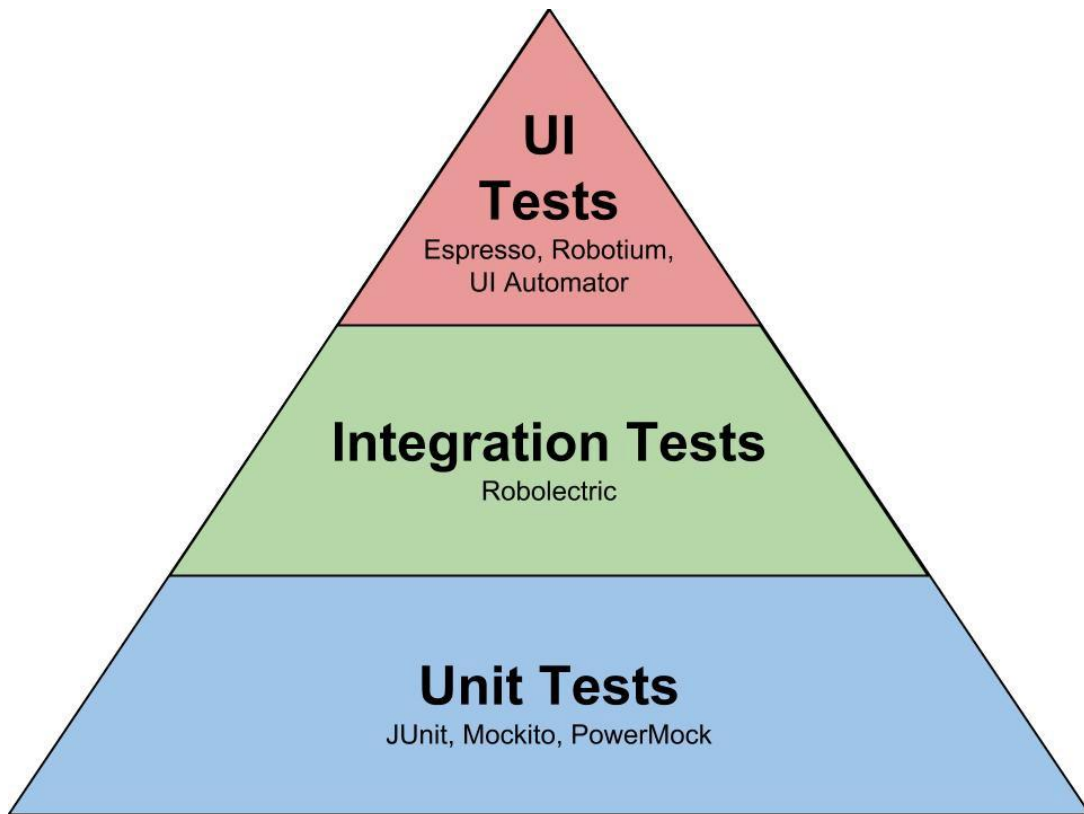


Figure 5.8: Testing Pyramid

CHAPTER 6

CONCLUSION & FUTURE IMPLEMENTATION

6.1 Conclusion

In one sentence by using this Motherhood App pregnant women can solve their before, during and after pregnancy problems without going to the hospital. Motherhood app help to learn pregnant women how to properly maintain them day by day, weekly and monthly.

In this busy life even husband is not able to spend a good time with his pregnant wife which is too much necessary for her mental support during pregnancy. That's why I think I should make that kind of app which one can help a pregnant woman without going to the hospital. Everything which is compulsory and doctor suggestions are available in this app. Finally I have made my thinking success and build an app and named this app Motherhood App.

6.2 Limitations

- Doctor can suggest patients virtually.
- Patients can't meet with the doctor physically.
- Without Internet patient and doctor can't contact each other.

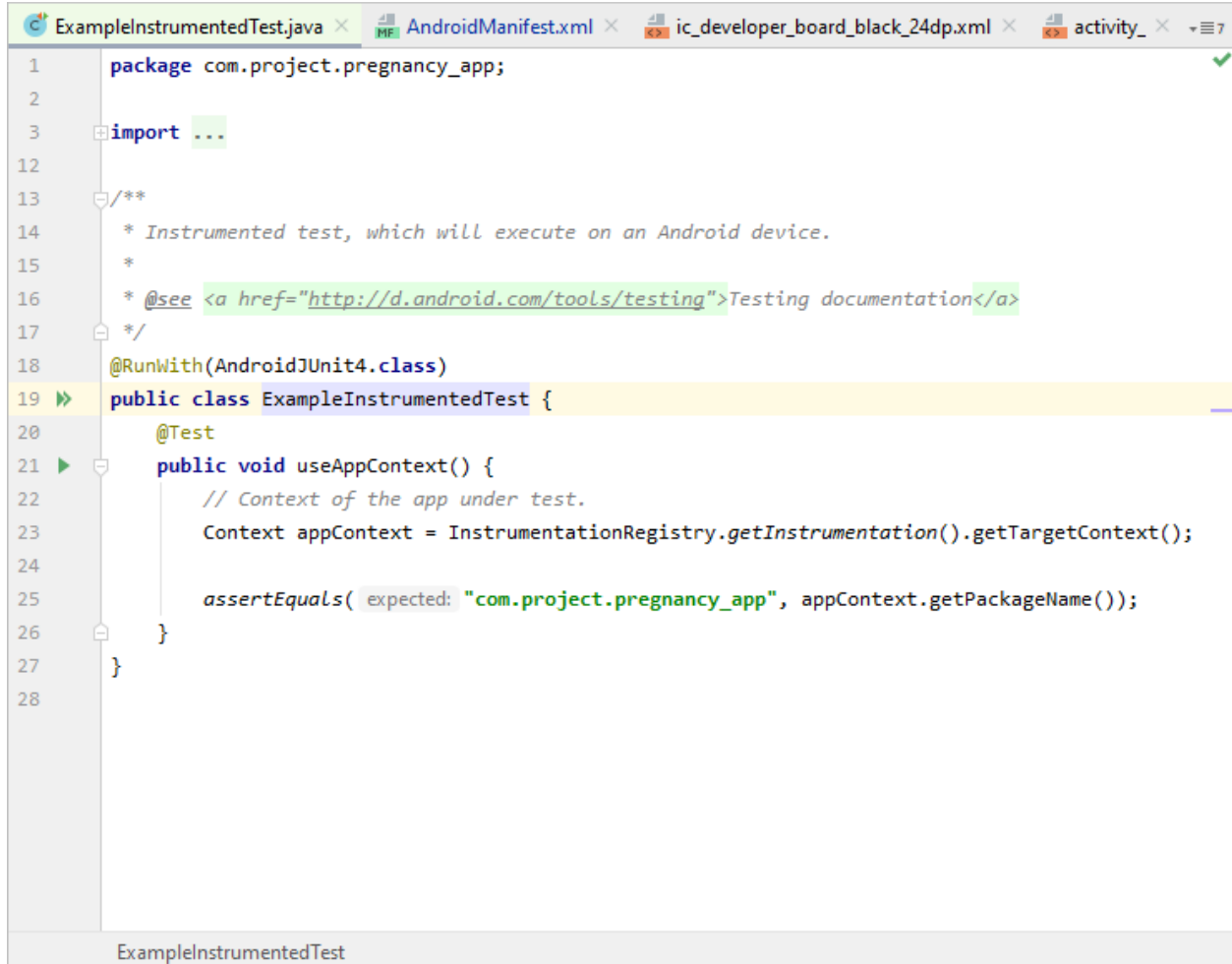
6.3 Scope of Future Implement

Helpmate is an android app right now. There are a lot of scope for implementing it in future. We have many plans already with Motherhood App. Some are listed below:

- A payment gateway method for doctor in future;
- A complete website will be added in future;
- The user's current location;
- From expert's revenue 5% will be charged automatically (Business plan);
- Add fully a new feature with medical sector as like online Prescription;
- The system with 24x7 helping support by doctor;

APPENDIX

APPENDIX: Test



```
1 package com.project.pregnancy_app;
2
3 import ...
4
5
6
7
8
9
10
11
12
13 /**
14  * Instrumented test, which will execute on an Android device.
15  *
16  * @see <a href="http://d.android.com/tools/testing">Testing documentation</a>
17  */
18 @RunWith(AndroidJUnit4.class)
19 public class ExampleInstrumentedTest {
20     @Test
21     public void useAppContext() {
22         // Context of the app under test.
23         Context appContext = InstrumentationRegistry.getInstrumentation().getTargetContext();
24
25         assertEquals("expected: \"com.project.pregnancy_app\", appContext.getPackageName());
26     }
27 }
28
```

ExampleInstrumentedTest

Baby Picture

```
package com.project.pregnancy_app;

import ...

public class BabyPicturesFragment extends Fragment {
    private List<Uri> pictureUris = new ArrayList<>();

    private void setPictureUris() {
        pictureUris.clear();

        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2016/04/14/08/40/newborn-1328"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2015/04/22/19/35/photographer-1328"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2014/09/23/06/04/brothers-457"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2016/11/19/14/28/people-18395"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2016/05/17/22/16/baby-1399332"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2017/09/05/11/37/baby-2717347"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2012/03/04/00/38/adorable-219"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2015/09/09/20/23/baby-933097_"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2016/05/31/11/26/baby-1426651"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2016/08/29/17/57/twins-162884"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2017/11/10/08/08/childhood-29"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2015/05/04/10/44/baby-752188_"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2012/03/01/01/45/adorable-203"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2013/02/21/19/11/baby-84639_9"));
        pictureUris.add(Uri.parse("https://cdn.pixabay.com/photo/2016/11/19/14/28/baby-1839565"));
    }
}
```

Java

```
package com.project.pregnancy_app;

import ...

/**
 * Instrumented test, which will execute on an Android device.
 *
 * @see <a href="http://d.android.com/tools/testing">Testing documentation</a>
 */
@RunWith(AndroidJUnit4.class)
public class ExampleInstrumentedTest {
    @Test
    public void useAppContext() {
        // Context of the app under test.
        Context appContext = InstrumentationRegistry.getInstrumentation().getTargetContext();

        assertEquals("expected: \"com.project.pregnancy_app\", appContext.getPackageName());
    }
}
```

APPENDIX: Activity

Main Activity

```
package com.project.pregnancy_app;

import ...

public class MainActivity extends AppCompatActivity {
    private final String FAV_TIP_ID_LIST_FILENAME = "fav_tip_ids";
    private final String DB_NAME = "database.db";

    private DataBaseHelper dataBaseHelper;
    private DrawerLayout mDrawerLayout;
    //private List<Tip> tips = new ArrayList<>();

    //private List<Integer> favTipIdList = new ArrayList<>();
    private List<Tip> favTips = new ArrayList<>();

    private ViewPager viewPager;
    private Adapter viewPagerAdapter;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        dataBaseHelper = DataBaseHelper.getInstance(context: this, DB_NAME);
    }
}
```


APPENDIX: XML

Xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.project.pregnancy_app">

    <uses-permission android:name="android.permission.INTERNET" />
    <uses-permission android:name="android.permission.SET_WALLPAPER" />

    <uses-permission android:name="android.permission.SEND_SMS" />
    <uses-permission android:name="android.permission.CALL_PHONE" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/app_icon"
        android:label="Pregnancy"
        android:roundIcon="@drawable/app_icon"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".DoctorListActivity"></activity>
        <activity android:name=".WebLinkActivity" />
        <activity android:name=".TipDetailsActivity" />
        <activity android:name=".DevelopersInfoActivity" />
        <activity
            android:name=".MainActivity"
            android:theme="@style/MainActivitvTheme">
```

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