VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi-590018, Karnataka, India

MOBILE APPLICATION DEVELOPMENT

A Mini Project Report
on
"MEDICINE DATABASE"

Submitted in partial fulfilment of the requirements for Sixth Semester

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE & ENGINEERING

Submitted by

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Approved by AICTE, Govt. of India, New Delhi.

No. 86/1, Gottigere, Bannerghatta Road, Bengaluru-560083 2021-2022

Department of Computer Science and Engineering

CERTIFICATE

This is to certify that **"SIDDIK AIYUB PATEL (1TJ19CS050), RAUNIT SINGH (1TJ19CS057) and MOHAMMAD FAIZAN GHANI (1TJ19CS039)"** bonafide students of T. John Institute of Technology, in partial fulfillment of requirements for Sixth Semester B.E(Computer Science and Engineering) during the year 2021-2022, submit the Mobile Application Development Mini Project entitled "Medicine Database". The mini project has been approved as it satisfies the academic requirements in respect of project work prescribed by the **Visvesvaraya Technological University**.

Project Guide	HOD
Dr. John T Mesia Dhas	**Ms.Suma R**
Associate Professor	Associate Professor & Head
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Internal Examiner	External Examiner

INDEX

DECLARATION

We, **"SIDDIK AIYUB PATEL (1TJ19CS050), RAUNIT SINGH (1TJ19CS057) and MOHAMMAD FAIZAN GHANI (1TJ19CS039)"** students of T. John Institute of Technology, Bangalore, hereby declare that the mini project report entitled **"MEDICINE DATABASE"** has been carried out by us under the guidance of **Dr. John T Mesia Dhas** Associate Professor, Department of Computer Science & Engineering, TJIT, Bangalore in partial fulfillment of the course requirement for sixth semester B.E Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2021-2022.

We also declare that, to the best of our knowledge and belief, the work reported here is accepted and satisfied.

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ABSTRACT

This is an Android-based application in which an automatic alarm ringing system is implemented. It focuses on doctor and patient interaction. Patients need not remember their medicine dosage timings as they can set an alarm based on their dosage timings. The alarm can be set for multiple medicines and timings including date, month and year. A notification will be sent to them along with the alarm when it is time to take a medicine.

Android provides classes and methods useful for storing medicine data or any type of data in a SQLite database and access the data whenever needed. Using these classes we can create any number of databases, add or modify data and also have the feature to delete the data.

This applications also let us see the history of alarm set by the user for all the medicines that the user has taken in past. Using the alarm manager and calendar classes, this application is able to ring an alarm at user selected date and time.

ACKNOWLEDGEMENT

We are grateful to our institution **T. JOHN INSTITUTE OF TECHNOLOGY** with its ideals and inspiration for having provided us with the facilities, which has made this report a success.

We would like to express our gratitude to our Chairman **Dr. Thomas P John** for providing us with the necessary facilities for the successful completion of the project.

We also thank **Dr. P Suresh Venugopal,** Principal, T. John Institute ofTechnology, for providing us an educative environment to work.

We also thank **Ms. Suma R** Associate Professor & Head, Dept. of CSE, for herinspiration during the completion of report.

We also thank **Dr. John T Mesia Dhas** Associate Professor for his guidance .

We would also like to take this opportunity to thank other faculty members of our department who have helped us in various ways while preparing for this project. We are also very grateful to our family members and friends for their support and encouragement.

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CHAPTER 1

INTRODUCTION

1.1 Overview of Android

Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies.

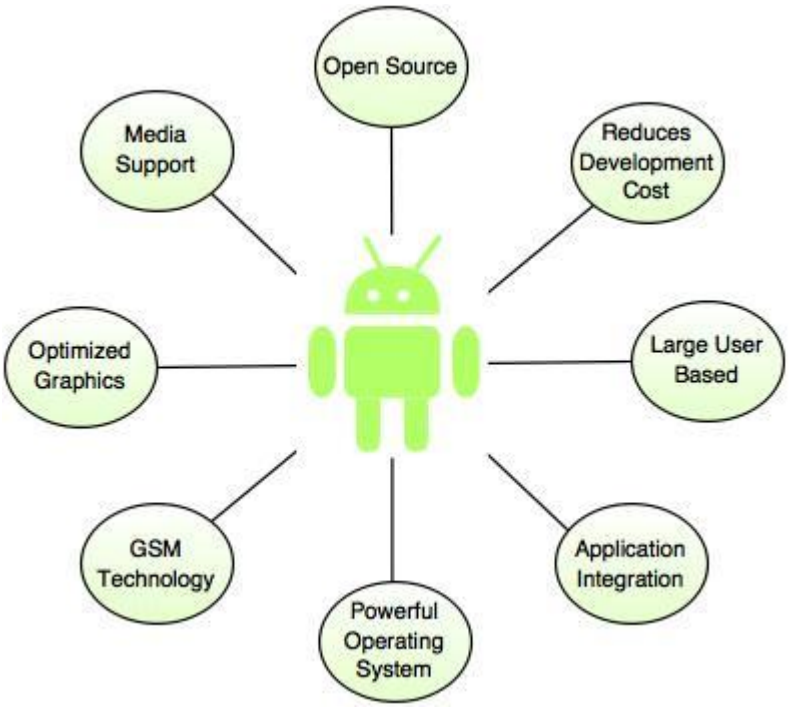
Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008.

On June 27, 2012, at the Google I/O conference, Google announced the next Android version, 4.1 Jelly Bean. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance.

The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

1.2 Why Android



1.3 Features of Android

Android is a powerful operating system competing with Apple 4GS and supports great features. Few of them are listed below

Sr.No.	Feature & Description
1	**Beautiful UI** Android OS basic screen provides a beautiful and intuitive user interface.
2	**Connectivity** GSM/EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth, Wi-Fi, LTE, NFC and WiMAX.

3	**Storage** SQLite, a lightweight relational database, is used for data storage purposes.
4	**Media support** H.263, H.264, MPEG-4 SP, AMR, AMR-WB, AAC, HE-AAC, AAC 5.1, MP3, MIDI, Ogg Vorbis, WAV, JPEG, PNG, GIF, and BMP.
5	**Messaging** SMS and MMS
6	**Web browser** Based on the open-source WebKit layout engine, coupled with Chrome's V8 JavaScript engine supporting HTML5 and CSS3.
7	**Multi-touch** Android has native support for multi-touch which was initially made available in handsets such as the HTC Hero.
8	**Multi-tasking** User can jump from one task to another and same time various application can run simultaneously.
9	**Resizable widgets** Widgets are resizable, so users can expand them to show more content or shrink them to save space.

10	**Multi-Language** Supports single direction and bi-directional text.
11	**GCM** Google Cloud Messaging (GCM) is a service that lets developers send short message data to their users on Android devices, without needing a proprietary sync solution.
12	**Wi-Fi Direct** A technology that lets apps discover and pair directly, over a high-bandwidth peer-to-peer connection.
13	**Android Beam** A popular NFC-based technology that lets users instantly share, just by touching two NFC-enabled phones together

1.4 Applications of Android

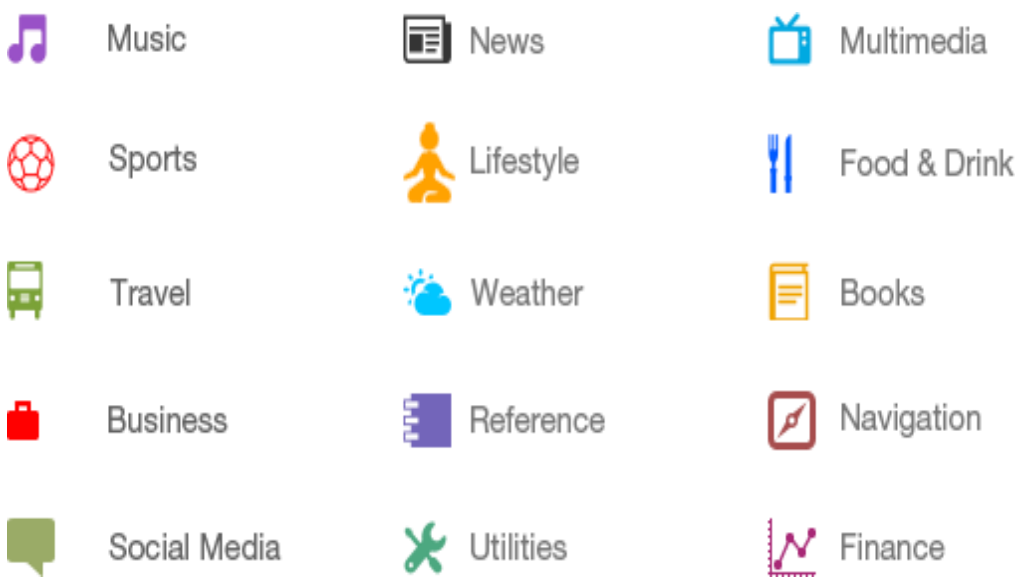
1 Android applications are usually developed in the Java language using the Android SoftwareDevelopment Kit.

2 Once developed, Android applications can be packaged easily and sold out either through a store such as **Google Play**, **SlideME**, **Opera Mobile Store**, **Mobango**, **F-droid** and the **Amazon Appstore**.

3 Android powers hundreds of millions of mobile devices in more than 190 countries around the world. It's the largest installed base of any mobile platform and growing fast. Every day more than 1 million new Android devices are activated worldwide.

4 This tutorial has been written with an aim to teach you how to develop and package Androidapplication. We will start from environment setup for Android application programming andthen drill down to look into various aspects of Android applications.

1.4.1 Categories of Android Application



1.5 History of Android

The code names of android ranges from A to N currently, such as Aestro, Blender, Cupcake,Donut, Eclair, Froyo, Gingerbread, Honeycomb, Ice Cream Sandwitch, Jelly Bean, KitKat, Lollipop and Marshmallow. Let's understand the android history in a sequence.

1.5.1 What is API level?

API Level is an integer value that uniquely identifies the framework API revision offeredby a version of the Android platform.

Platform Version	API Level	VERSION_CODE
Android 6.0	23	MARSHMALLOW
Android 5.1	22	LOLLIPOP_MR1
Android 5.0	21	LOLLIPOP
Android 4.4W	20	KITKAT_WATCH
Android 4.4	19	KITKAT
Android 4.3	18	JELLY_BEAN_MR2

Android 4.2, 4.2.2	17	JELLY_BEAN_MR1
Android 4.1, 4.1.1	16	JELLY_BEAN
Android 4.0.3, 4.0.4	15	ICE_CREAM_SANDWICH_MR1
Android 4.0, 4.0.1	14	ICE_CREAM_SANDWICH
Android 3.2	13	HONEYCOMB_MR2
Android 3.1.x	12	HONEYCOMB_MR1
Android 3.0.x	11	HONEYCOMB
Android 2.3.4 Android 2.3.3	10	GINGERBREAD_MR1
Android 2.3.2 Android 2.3.1 Android 2.3	9	GINGERBREAD
Android 2.2.x	8	FROYO
Android 2.1.x	7	ECLAIR_MR1
Android 2.0.1	6	ECLAIR_0_1
Android 2.0	5	ÉCLAIR
Android 1.6	4	DONUT
Android 1.5	3	CUPCAKE
Android 1.1	2	BASE_1_1
Android 1.0	1	BASE

1.6 Statement of the Project

The "Medicine Database" is a fairly simple project to trigger an alarm at an appropriate date and time for a given medicine by taking the medicine name and future date and time fromthe user. There are 3 fields which takes the input from user and a button which stores the input.

1.7 Objective of the Project

The main Objective of the **Medicine Database** is to create/store an alarm by taking a medicine name, date and time from the user and trigger the alarm, at later time specified by the user, and to make the user experience as friendly as possible.

The project is implemented in a way that that the user doesn't have to face any difficultieswhile using the application, it has been tested all possible conditions and hence the doesn't need any prior knowledge to use the application efficiently.

1.8 Software & Hardware Requirements

- Operating system - Android 4.2, Android 4.4.2, or Android 4.4.4
- Processor - Intel Atom® Processor Z2520 1.2 GHz, or faster processor
- Storage - Between 850 MB and 1.2 GB, depending on the languageVersion
- RAM - Minimum of 512 MB, 2 GB is recommended

CHAPTER 2

MEDICINE DATABASE

2.1 Overview

The project is a multi-page application which contains 2 pages, 4 buttons and 3 text fields.

First page is an index page which contains an image and 3 buttons. These 3 buttons are:

1. Insert Data: - Opens another page which lets us store medicine data.
2. Show Data: - Shows all the alarms that has been saved by user in past.
3. About Us: - Shows a dialogue box which contains a summary of text information about all the developers

When clicked on Insert Data button, a new page opens up which contains 3 text fields and a button.

1. Insert: - Stores all the input in database and creates an alarm for a specified date

Three text fields are:

1. Medicine Name: - Lets the user enter a medicine name
2. Date: - Lets the user enter a date
3. Time of The Day: - Lets the user choose the time from specified times of the day

2.3 Module Explanation

A Module is a collection of source files and build settings that allow you to divide your project into discrete units of functionality. Your project can have one or many

modules.

CHAPTER 3

DESIGN AND IMPLEMENTATION

3.1 Built-in library functions:

- java.io.*
- android.os.*
- android.view.*
- android.widget.*
- android.content.Context
- android.database.Cursor
- android.database.sqlite.SQLiteDatabase
- android.database.sqlite.SQLiteOpenHelper
- android.util.Log
- java.util.ArrayList
- java.database.sqlite
- java.util.*
- java.app.*
- java.content.Intent

3.2 User defined functions

- aboutUs()

- isValid()
- createNotificationChannel()
- hideKeyboard()
- onCreate()
- insertValues()
- readData()

3.3 Source Code

- #XML: - index.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   xmlns:tools="http://schemas.android.com/tools"
   android:background="@color/bg"
   android:clickable="true"
   tools:context=".Index"
   android:focusableInTouchMode="true"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   android:focusable="true">

   <ImageView
      android:layout_width="200sp"
      android:layout_height="200sp"
      android:src="@drawable/meds"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.075" />

<Button
    android:id="@+id/insertBtn"
    android:layout_width="180sp"
    android:layout_height="wrap_content"
    android:layout_marginTop="83dp"
    android:background="@color/titleClr"
    android:text="@string/insert_data"
    android:textSize="18sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.338" />

<Button
    android:id="@+id/aboutBtn"
    android:layout_width="180sp"
    android:layout_height="wrap_content"
    android:background="@color/aboutClr"
    android:text="@string/about_us"
    android:textSize="18sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.73" />
```

```
        <Button
            android:id="@+id/ShowData"
            android:layout_width="180sp"
            android:layout_height="wrap_content"
            android:background="@color/titleClr"
            android:text="@string/show_data"
            android:textSize="18sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.497"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.573" />

    </androidx.constraintlayout.widget.ConstraintLayout>
```

- **Activity_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout

    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:background="@color/bg"
    android:clickable="true"
    android:focusableInTouchMode="true">
```

```
<TextView
    android:id="@+id/timeLabel"
    android:layout_width="184dp"
    android:layout_height="51dp"
    android:layout_marginStart="-15dp"
    android:text="@string/time_of_the_day"
    android:textColor="@color/labelClr"
    android:textSize="23sp"
    android:textStyle="bold”
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.124"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView"
    app:layout_constraintVertical_bias="0.491"
    android:focusable="true" />

<TextView
    android:id="@+id/dateLabel"
    android:layout_width="184dp"
    android:layout_height="51dp"
    android:layout_marginStart="-15dp"
    android:text="@string/date"
    android:hint="@string/dateFormat"
    android:textColor="@color/labelClr"
    android:textSize="23sp"
    android:textStyle="bold”
    app:layout_constraintBottom_toTopOf="@+id/timeLabel"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.124"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/medLabel" />

<TextView
```

```
    android:id="@+id/textView"
    android:textAlignment="center"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:fontFamily="sans-serif-medium"
    android:text="@string/title"
    android:textColor="@color/titleClr"
    android:textSize="45sp"
    android:textStyle="bold|italic"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.044" />

  <TextView
    android:id="@+id/medLabel"
    android:layout_width="184dp"
    android:layout_height="51dp"
    android:layout_marginStart="-15dp"
    android:text="@string/medicine_name"
    android:textAlignment="viewStart"
    android:textColor="@color/labelClr"
    android:textSize="23sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.124"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.344" />

  <EditText
```

```
        android:id="@+id/med"
        android:layout_width="184dp"
        android:layout_height="51dp"
        android:layout_marginEnd="12dp"
        android:background="@drawable/textinputborder"
        android:inputType="text"
        android:singleLine="false"
        android:textAlignment="center"
        android:textColor="@color/inputClr"
        android:textSize="23sp"
        app:layout_constraintBottom_toTopOf="@+id/dateLabel"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.819" />

    <EditText
        android:id="@+id/date"
        android:textColorHint="#323232"
        android:layout_width="184dp"
        android:layout_height="51dp"
        android:layout_marginEnd="12dp"
        android:background="@drawable/textinputborder"
        android:focusable="true"
        android:inputType="date"
        android:textAlignment="center"
        android:textColor="@color/inputClr"
        android:textSize="23sp"
        app:layout_constraintBottom_toBottomOf="@+id/dateLabel"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.953" />

    <TextView
        android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:text="@string/dateFormat"
    android:textAlignment="center"
    android:textColor="@color/hintDate"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.731"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.488" />

<Spinner
    android:id="@+id/list"
    android:layout_width="184dp"
    android:layout_height="51dp"
    android:spinnerMode="dropdown"
    android:textSize="23sp"
    android:textAlignment="center"
    android:layout_marginEnd="12dp"
    android:background="@drawable/textinputborder"
    app:layout_constraintBottom_toBottomOf="@+id/timeLabel"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView"
    app:layout_constraintVertical_bias="0.972" />

<Button
    android:id="@+id/insertBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="83dp"
    android:layout_marginBottom="128dp"
    android:background="@color/titleClr"
    android:text="@string/insert"
    android:textSize="18sp"
```

```
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/timeLabel" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

- **Custom_dialogue.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    xmlns:tools="http://schemas.android.com/tools"
    android:background="#E6E5E5"
    android:clickable="true"
    tools:context=".Index"
    android:focusableInTouchMode="true"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:focusable="true">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/dialog_about_us"
        android:textAllCaps="true"
        android:textColor="@color/titleClr"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.058"
        app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.177" />

<TextView
    android:id="@+id/description"
    android:layout_width="327dp"
    android:layout_height="121dp"
    android:layout_marginLeft="20sp"
    android:layout_marginRight="20sp"
    android:paddingTop="30sp"
    android:text="@string/aboutUSText"
    android:textSize="18sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<Button
    android:id="@+id/okbtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/okText"
    android:background="@color/titleClr"
    android:textSize="20sp"
    android:layout_marginBottom="15sp"
    android:layout_marginRight="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.95"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/description"
    app:layout_constraintVertical_bias="0.169" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

- **Display_data.xml**

```
<?xml version="1.0" encoding="utf-8" ?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    tools:context=".DataSource">

    <TableLayout
        android:id="@+id/tableLayout"
        android:layout_width="350sp"
        android:layout_height="match_parent"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <ListView
        android:id="@+id/listView"
        android:layout_width="350sp"
        android:layout_height="match_parent"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

#JAVA Code: - index.java

```
package com.example.medicinedatabase;

import android.*;

import androidx.appcompat.app.AppCompatActivity;

public class Index extends AppCompatActivity {

    private Button insert;
    private Button about, showData;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.index);
        insert = findViewById(R.id.insertBtn);
        about = findViewById(R.id.aboutBtn);
        showData = findViewById(R.id.ShowData);

        // starting other activity when clicked on insert
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(Index.this, MainActivity.class);
                startActivity(intent);
            }
        });

        // about method click listener
        about.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
        public void onClick(View view) {
            aboutUs();
        }
    });

    showData.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(Index.this, DisplayData.class);
            startActivity(intent);
        }
    });
}

private void aboutUs() {

    // Creating a dialog box
    final Dialog dialog = new Dialog(Index.this);
    dialog.requestWindowFeature(Window.FEATURE_NO_TITLE);
    dialog.setCancelable(true);

    // setting design file to this dialog
    dialog.setContentView(R.layout.custom_dialog);
    Button okbtn = dialog.findViewById(R.id.okbtn);

    // disappearing dialog when clicked on ok button
    okbtn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            dialog.dismiss();
        }
    });

    dialog.show();
```

```
    }
}
```

- **Main_activity.java**

```
import androidx.*;
import android.*;
import java.util.*;

public class MainActivity extends AppCompatActivity {

    private Button insert, about;
    private EditText medName;
    private EditText date;
    private Spinner spinner;
    private DataSource dataSource;
    private AlarmManager alarmManager;
    private PendingIntent pendingIntent;
    private Calendar calendar;
    private Intent intent;
    private Pattern pattern;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // Creating a notification channel
        createNotificationChannel();

        // Initializing Data Source and other layout objects
        dataSource = new DataSource(this);
        insert =  findViewById(R.id.insertBtn);
        about =  findViewById(R.id.aboutBtn);
        medName = findViewById(R.id.med);
```

```
        date = findViewById(R.id.date);
        spinner = findViewById(R.id.list);
        // Creating a pattern for date
        pattern = Pattern.compile("^\\d{1,2}/\\d{1,2}/\\d{2}$");

        // Filling dropDown menu
        String[] items = new String[]{"Morning", "Afternoon", "Evening", "Night"};
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this, R.layout.dropdown,
items);
        spinner.setAdapter(adapter);

        View.OnFocusChangeListener focusChangeListener = (view, b) -> {
           if(!b) {
              hideKeyboard(view);
           }
        };
        // setting focus change property of date and medicine name field
        medName.setOnFocusChangeListener(focusChangeListener);
        date.setOnFocusChangeListener(focusChangeListener);

        // Initializing alarm manager service
        alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);

        // insert button on click listener
        insert.setOnClickListener(new View.OnClickListener() {
           @RequiresApi(api = Build.VERSION_CODES.O)
           @Override
           public void onClick(View view) {
              // storing name,date and time field value
            name=medName.getText().toString().toLowerCase(Locale.ROOT);
            if(name.equals("")) {
                Toast.makeText(getBaseContext(), "Enter The Data In Correct Format",
Toast.LENGTH_LONG).show();
                return;
```

```
            }
            String dates = date.getText().toString();
            // matching date pattern
            if(!pattern.matcher(dates).matches()) {
               Toast.makeText(getBaseContext(), "Please enter the date in dd/mm/yy format", Toast.LENGTH_LONG).show();
               date.setText(null);
               return;
            }
            String time = spinner.getSelectedItem().toString().toLowerCase(Locale.ROOT);

            // Separating day, month and year from date string
            String[] data = dates.split("/");
            int day = Integer.parseInt(data[0]);
            int month = Integer.parseInt(data[1]);
            int year = Integer.parseInt("20" + data[2]);

            // Checking if the date entered is valid or not
            if(!isValid(day,month,year)) {
               return;
            }

            // inserting values in database
            boolean insert = dataSource.insertValues(name,dates,time);

            // Setting hour based on selected value of time
            int hour;
            switch (time) {
               case "morning":
                  hour = 8;
                  break;
               case "afternoon":
                  hour = 12;
                  break;
```

```
            case "evening":
                hour = 18;
                break;
            default:
                hour = 21;
                break;
        }

        // setting up alarm if alarm data was successfully inserted in database
        if(insert) {
            // setting the hour of alarm
            calendar = Calendar.getInstance();
            calendar.set(Calendar.HOUR_OF_DAY, hour);
            calendar.set(Calendar.MINUTE, 0);
            calendar.set(Calendar.SECOND, 0);
            calendar.set(year, month-1, day);

            // creating an intent to receiver class
            intent = new Intent(MainActivity.this, AlarmReceiver.class);

            // Creating a bundle adding medicine name to it and adding bundle to intent so
that we can transfer data from one activity to another
            Bundle bundle = new Bundle();
            bundle.putString("med", name);
            intent.putExtras(bundle);

            // setting pending intent to register broadcast class and setting flags depending
on SDK version
            if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
                pendingIntent = PendingIntent.getBroadcast(MainActivity.this, 0, intent,
PendingIntent.FLAG_IMMUTABLE | PendingIntent.FLAG_UPDATE_CURRENT);
            } else {
                pendingIntent = PendingIntent.getBroadcast(MainActivity.this, 0, intent,
PendingIntent.FLAG_UPDATE_CURRENT);
```

```
                }

                // setting alarm. RTC_WAKEUP will wakes the alarm instantly, alarm time is
specified in milliseconds
                alarmManager.set(AlarmManager.RTC_WAKEUP,
calendar.getTimeInMillis(), pendingIntent);
                Toast.makeText(getBaseContext(), "Alarm Created for " + name + "
Reminder: " + dates, Toast.LENGTH_LONG).show();

                medName.setText(null);
                date.setText(null);
            } else {
                Toast.makeText(getBaseContext(), "Couldn't insert Data! Database insertion
error", Toast.LENGTH_LONG).show();
            }
        }
    });
  }

  private void hideKeyboard(View view) {

    InputMethodManager inputMethodManager = (InputMethodManager)
getSystemService(Activity.INPUT_METHOD_SERVICE);
    inputMethodManager.hideSoftInputFromWindow(view.getWindowToken(), 0);
  }

  private void createNotificationChannel() {

    if(Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
      CharSequence name = "sidChannel";
      String desc = "Channel for alarm manager";
      int importance = NotificationManager.IMPORTANCE_HIGH;
      NotificationChannel notificationChannel = new NotificationChannel("sid",
name,importance);
```

```
            notificationChannel.setDescription(desc);

            NotificationManager notificationManager = getSystemService(NotificationManager.class);
            notificationManager.createNotificationChannel(notificationChannel);
        }
    }

    private boolean isValid(int day, int month, int year) {

        if(!(day <= 31 && day >= 1 && month >= 1 && month <= 12 && year >= 22)) {
            Toast.makeText(getBaseContext(), "Please enter the date before the current day in proper manner", Toast.LENGTH_LONG).show();
            date.setText(null);
            return false;
        }

        // checking if alarm is set for future, not past!
        Calendar cal1 = Calendar.getInstance(); // returns today's date
        Calendar cal2 = Calendar.getInstance();
        cal2.set(year, month-1, day); // setting alarm's date
        if(cal2.before(cal1)) {
            Toast.makeText(getBaseContext(), "You cannot set an alarm for the time that is already gone!", Toast.LENGTH_LONG).show();
            date.setText(null);
            return false;
        }
        return true;
    }
```

- **DataSource.java**

```
import android.*;
```

```
public class DataSource extends SQLiteOpenHelper {

    private static final String DB_NAME = "medbase";
    private static final int DB_VERSION = 1;

    public DataSource(Context baseContext) {
        super(baseContext, DB_NAME, null, DB_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase sqLiteDatabase) {
        sqLiteDatabase.execSQL("CREATE TABLE meds(name TEXT, date TEXT, time
TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int oldVersion, int
newVersion) { }

    public boolean insertValues(String medName, String date, String time) {
        SQLiteDatabase database = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("name", medName);
        contentValues.put("date", date);
        contentValues.put("time", time);
        long res = database.insert("meds", null, contentValues);
        return res != -1;
    }

    public Cursor readData() {
        SQLiteDatabase db = this.getReadableDatabase();
        String query = "SELECT * FROM meds";
        return db.rawQuery(query, null);
    }
```

```
}
```

- **AlarmReceiver.java**

```
import android.*;
import androidx.*;

public class AlarmReceiver extends BroadcastReceiver {

    private MediaPlayer mp;

    @Override
    public void onReceive(Context context, Intent intent) {

        // extracting bundle from intent
        Bundle bundle = intent.getExtras();
        String medName = bundle.getString("med");

        // playing a ringtone
mp=MediaPlayer.create(context,Settings.System.DEFAULT_RINGTONE_URI);
        mp.setLooping(true);
        mp.start();
        Toast.makeText(context, "ALARM RINGING", Toast.LENGTH_LONG).show();

        // stopping after 5 seconds
        Handler handler = new Handler();
        handler.postDelayed(() -> mp.stop(),25000);

        // Creating Notification
        NotificationCompat.Builder mBuilder = new
NotificationCompat.Builder(context,"sid");
        // setting title, description, icon and priority of notification
        mBuilder.setContentTitle("Time to take " + medName + " medicine!")
                .setContentText("Please Take " + medName + " now.")
```

```
            .setSmallIcon(R.drawable.clock)
            .setAutoCancel(true)
            .setDefaults(NotificationCompat.DEFAULT_ALL)
            .setPriority(NotificationCompat.PRIORITY_HIGH);

NotificationManagerCompat notificationManagerCompat = NotificationManagerCompat.from(context);
      notificationManagerCompat.notify(123,mBuilder.build());
   }
}
```

- **DisplayData.java**

```
package com.example.medicinedatabase;

import android.database.Cursor;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TableLayout;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;

public class DisplayData extends AppCompatActivity {

   private ArrayList<String> data;
   private ArrayAdapter<String> adapter;
   private ListView listView;
   private DataSource dataSource;
   private TableLayout tableLayout;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.display_data);
        listView = findViewById(R.id.listView);
        tableLayout = findViewById(R.id.tableLayout);
        dataSource = new DataSource(this);

        data = new ArrayList<>();
        Cursor cursor = dataSource.readData();

        data.add(String.format("%10s", "NAME") + String.format("%25s", "DATE") +
String.format("%25s", "TIME"));

        if(cursor.getCount() == 0) {
            Toast.makeText(getBaseContext(), "No data found!",
Toast.LENGTH_LONG).show();
        } else{
            while (cursor.moveToNext()) {
                String name = cursor.getString(0);
                String date = cursor.getString(1);
                String time = cursor.getString(2);
                data.add(String.format("%10s",name) + String.format("%30s",date) +
String.format("%20s",time));
            }
            adapter = new ArrayAdapter<>(this,
com.google.android.material.R.layout.support_simple_spinner_dropdown_item, data);
            listView.setAdapter(adapter);
        }
    }
}
```

CHAPTER 4

RESULTS AND SCREENSHOT

4.1 Index Page

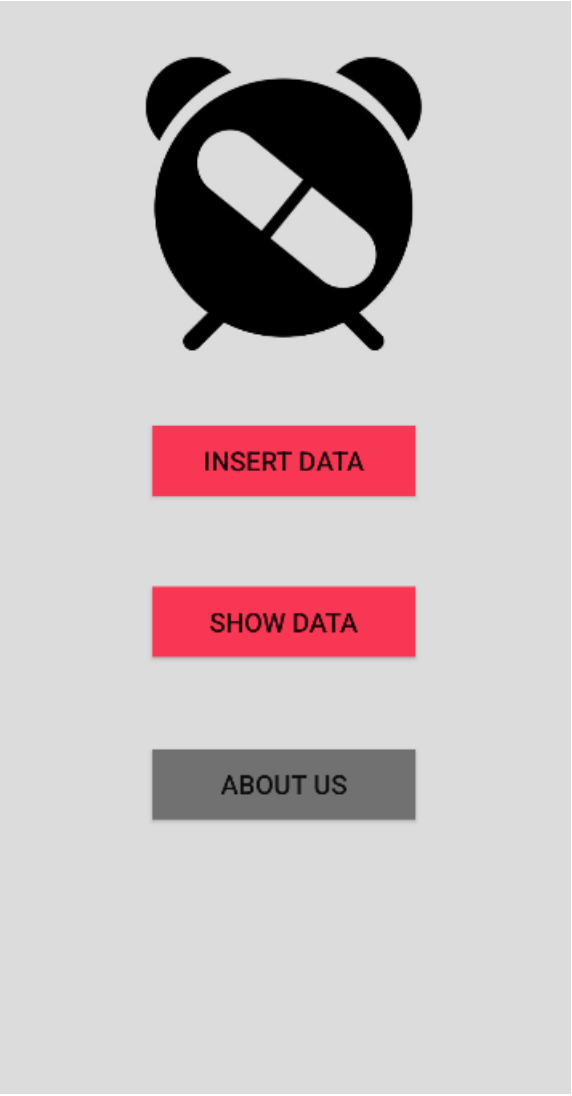


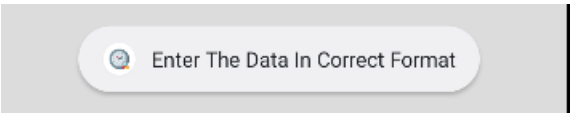
Figure 4.1: Index Page

This is the page that opens up when the applications starts. It contains 3 buttons.

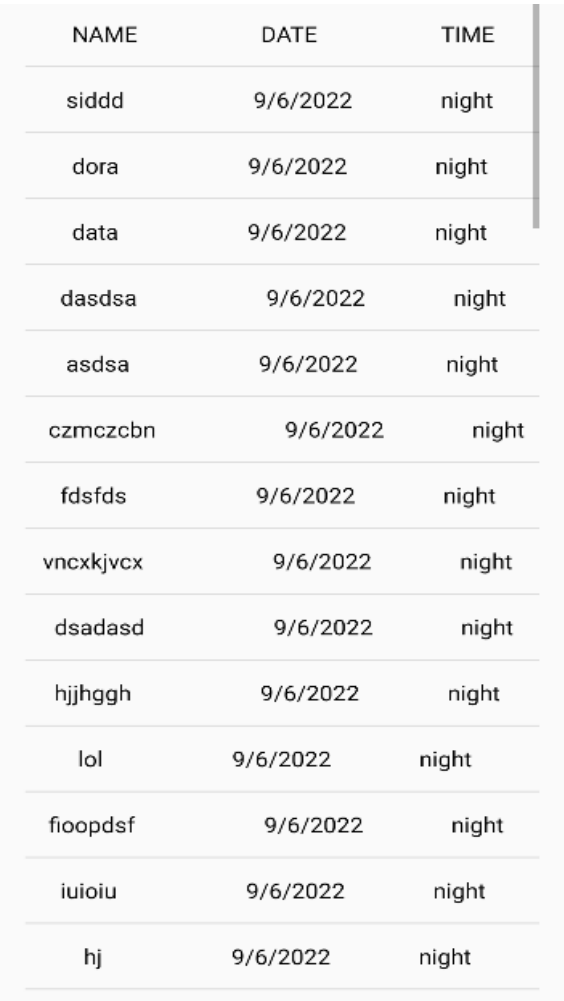
4.2: - Setting up an alarm

Figure 4.2: Setting up an alarm

When the user clicks on insert button, this page appears. It contains 3 text fields and an insert button. If the data is not provided in proper format, it will notify the user by showing a toast. If all the data is valid, it will store the data and will tell the user that the data has been saved and an alarm has been created.



4.3: - Displaying Data



NAME	DATE	TIME
siddd	9/6/2022	night
dora	9/6/2022	night
data	9/6/2022	night
dasdsa	9/6/2022	night
asdsa	9/6/2022	night
czmczcbn	9/6/2022	night
fdsfds	9/6/2022	night
vncxkjvcx	9/6/2022	night
dsadasd	9/6/2022	night
hjjhggh	9/6/2022	night
lol	9/6/2022	night
fioopdsf	9/6/2022	night
iuioiu	9/6/2022	night
hj	9/6/2022	night

Figure 4.3: Displaying data

When the user clicks on show data button, all the alarms that were created by user will be displayed on the screen. The above picture just shows an example of all the alarms.

4.4: - About us

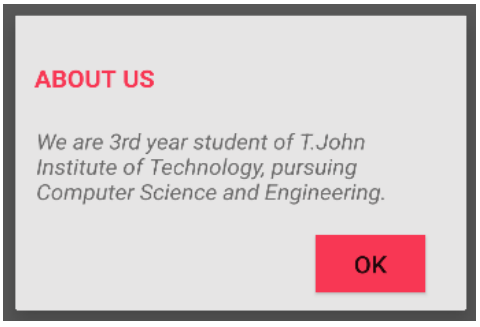


Figure 4.4: About us

CHAPTER 5

CONCLUSION

5.1 Conclusion

The development of the project is not an easy process as it involves lot of challenges in different stages of software analysis, design, coding and testing.

Having understood the requirements properly and implementing the solutions as per the expectation has brought to the closure of the project.

We have tried our best to make this project very user-friendly, so that the user does not face any trouble in the real world while using the application.

REFERENCES

- www.wikipedia.com
- https://developer.android.com
- https://stackoverflow.com