Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY

(An Autonomous Institute, Affiliated to Visvesvaraya Technological University, Belagavi, Accredited by NAAC, with 'A' Grade)
Near JnanaBharathi Campus, Bengaluru – 560056

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Lab Manual

on

"Android Programming"

Subject Code: 18CSL76

Staffs - In – Charge

Ms. Uma K M, Assistant Professor, Dr. AIT
Ms. Lavanya Santhosh, Assistant Professor, Dr. AIT
Ms.Veena A, Assistant Professor, Dr. AIT

2020-21

A. LAORATORY OVERVIEW

Degree:	**BE**	Program:	**CS & E**
Semester:	**6**	Academic Year:	**2020-21**
Laboratory Title:	**Android Programming Laboratory**	Laboratory Code:	**18CSL76**
L-T-P-S:	**0-0-1-0**	Duration of SEE:	**3 Hrs**
CIE Marks:	**50**	SEE Marks:	**50**

B. DESCRIPTION

c

There are no prerequisites for learning Android but I would like to mention that you will be coding in Java and XML. It would be helpful if you could learn just the core Java concepts.

2. BASE COURSE

- **Android Programming Laboratory (18CSL76)**

3. COURSE OUTCOMES

At the end of the course, the student will be able to;

CO1: Create, test and debug Android application by setting up Android development environment.
CO2: Implement adaptive, responsive user interfaces that work across a wide range of devices.
CO3: Infer long running tasks and background work in Android applications.
CO4: Demonstrate methods in storing, sharing and retrieving data in Android applications.
CO5: Infer the role of permissions and security for Android applications.

4. RESOURSES REQUIRED

- **Hardware resources**
  - Desktop PC
  - Microsoft Windows 7/8/10 (32 or 64 bit)
  - 2 GB RAM minimum, 8 GB recommended
  - 2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
  - 1280 x 800 minimum screen resolution
- **Software resources**

All the required tools to develop Android applications are freely available and can be downloaded from the Web. Following is the list of software you will need before you start your Android.

  - Java JDK5 or latest version
  - Java Runtime Environment (JRE) 6
  - Android SDK
  - Android Studio
  - Eclipse IDE for Java Developers
  - Android Development Tool kit (ADT kit) / Eclipse

For testing purpose you require physical device because as per my experience it run smoothly than PC Emulator.

5. RELEVANCE OF THE COURSE:

- To carry out Mini project and Main Project work

6. GENERAL INSTRUCTIONS:

- Implement the program in Android Studio.
- External practical examination.
  - All laboratory experiments are to be included
  - Students are allowed to pick one experiment from the lot.
  - Marks distribution: Procedure + Conduction + Viva: 10 + 30 +10 (50)
  - Change of experiment is allowed only once and marks allotted to the procedure part tobe made zero.

List of Programs

Course objectives:

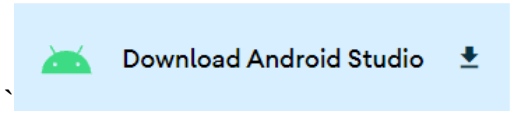
1) To learn and acquire art of Android programming.
2) To configure initial application, run in emulator.
3) Understand and implement Android's advanced User interface functions, audio video applications
4) Create, modify and query on SQlite database.
5) Present different ways of sharing data through the use of services.

Sl. No.	Programs
1.	i) Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner. The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address is to be displayed. Insert a horizontal line between the job title and the phone number. ii) Develop a simple application with one EditText so that the user can write some text in it. Create a button called "Convert Text to Speech" that converts the user input text into voice.
2.	Write a program to create an Activity to read Employee Details (EmpId, Name, Age, Address) from user and store to database and create a menu with menu item (Show Details) on pressing menu details it must go to another activity with employee id search box and search button and display the employee details on the screen.
3.	Write a program to create an activity with a text box and three buttons (save, open and create) open must allow to browse the text file from sdcard and must display the contents of the file on textbox, save button must save the contents of text box to file, create button must allow file user to create a new file and save the entered contents of the textbox.
4.	Write a program to create an activity with two text boxes (date /time and note contents). Create a content provider to store the date and time and note contents to the database. Create another program with a Button (Fetch Today Notes) on press must access the note provider and display the notes stored for today's date.
5.	Write a program to create an activity with two buttons start and stop. On pressing start button the program must start the counter and must keep on counting until stop button is pressed.
6.	Create a program to receive the incoming SMS to the phone and put a notification on screen, on clicking the notification it must display sender number and message content on screen.
7.	Write a program to create a service that will put a notification on the screen every 5 seconds.
8.	Create an .aidl service to do add, subtraction and multiplication and create another application with two buttons to read the inputs and three button add,subtract and multiply to call add, subtract and multiply operation on .aidl service.
9.	Create an activity like a phone dialer with (1,2,3,4,5,6,7,8,9,0,*,#) buttons including call, save and delete buttons. On pressing the call button, it must call the phone number and on pressing the save button it must save the number to the phone contacts.
10.	Create a file of JSON type with values for city_name, Latitude, Longitude, Temperature and Humidity. Develop an application to create an activity with button to parse the JSON file which when clicked should display the data in the textview.

How to Install and Set up Android Studio on Windows?

Step 1: Go to https://developer.android.com **website.**

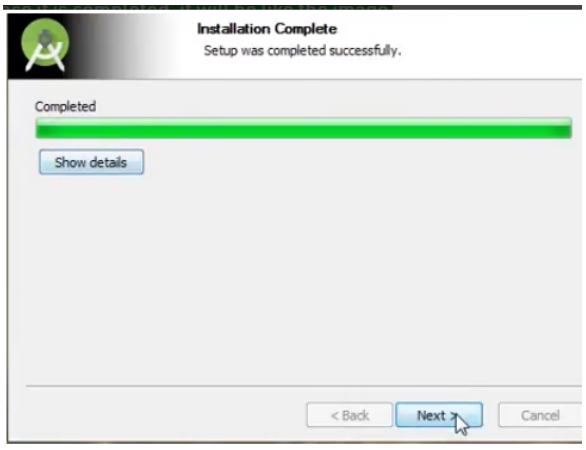
Step 2: Click on the **Download Android Studio** Button.



Step 3: After the downloading has finished, open the file from downloads and run it. It will prompt the following dialog box.

Click on next. In the next prompt, it'll ask for a path for installation. Choose a path and hit next.

Step 4: It will start the installation, and once it is completed, it will be like the image shown below.



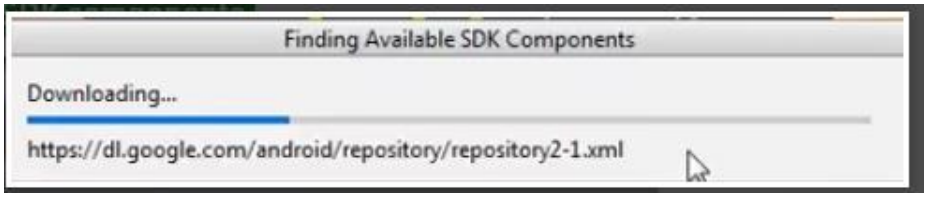
Click on next.

Step 5: Once "**Finish**" is clicked, it will ask whether the previous settings need to be imported [if the Android studio had been installed earlier], or not. It is better to choose the 'Don't import Settings option'.

Click the **OK** button.

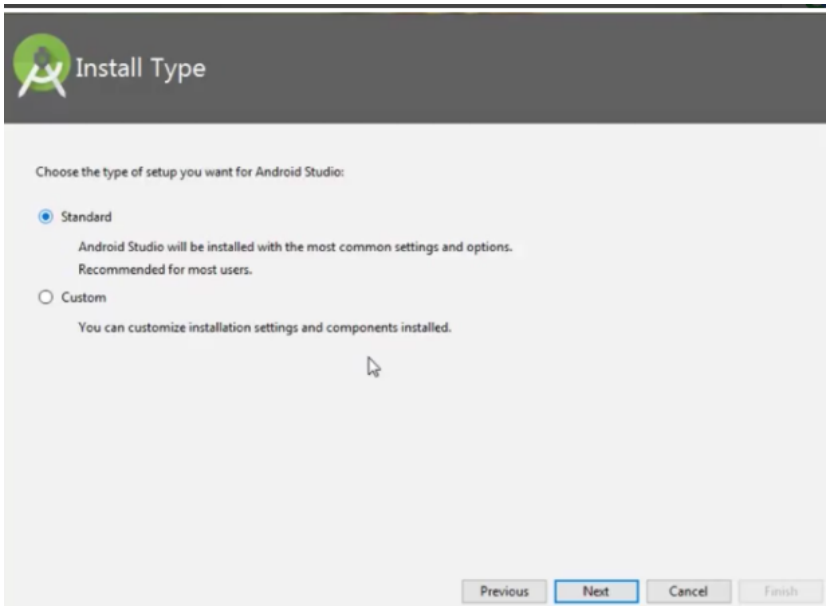
Step 6: This will start the Android Studio.

Meanwhile, it will be finding the available SDK components.



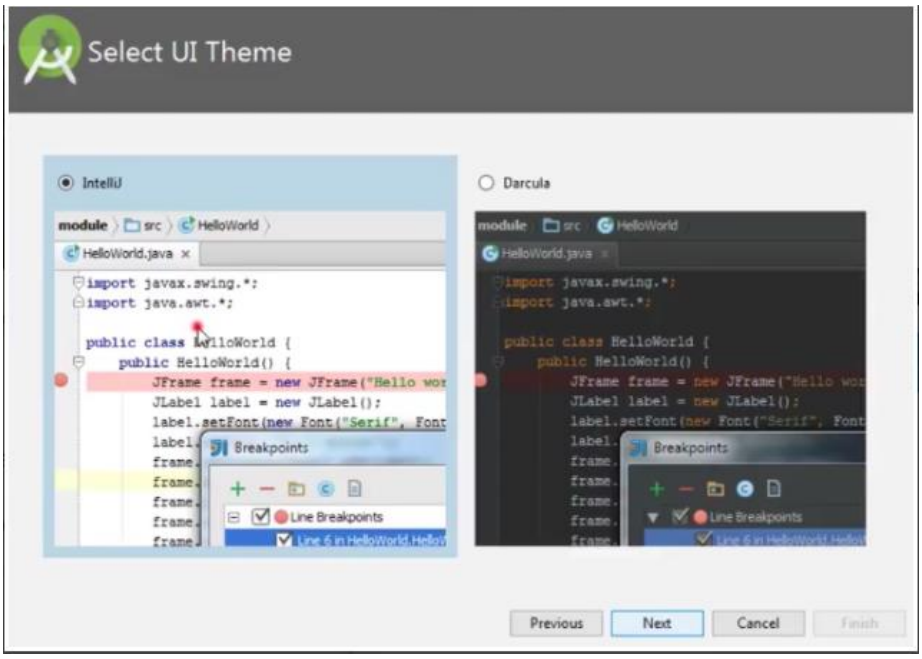
Step 7: After it has found the SDK components, it will redirect to the Welcome dialog box.

Click on **Next**.



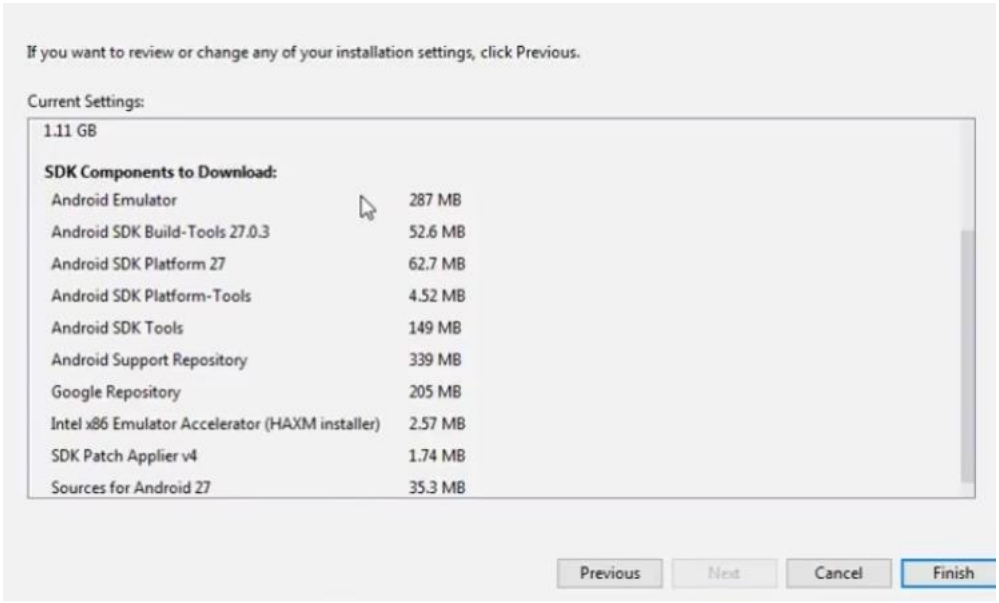
Choose Standard and click on Next. Now choose the theme, whether the **Light** theme or the **Dark** one.

The light one is called the **IntelliJ** theme whereas the dark theme is called **Darcula**. Choose as required.

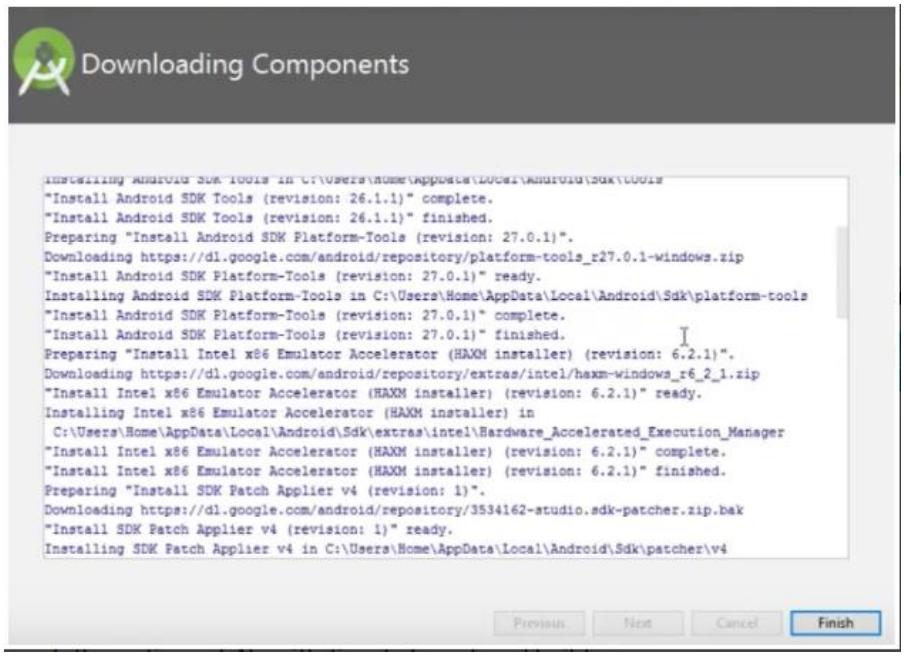


Click on the **Next** button.

Step 8: Now it is time to download the SDK components.

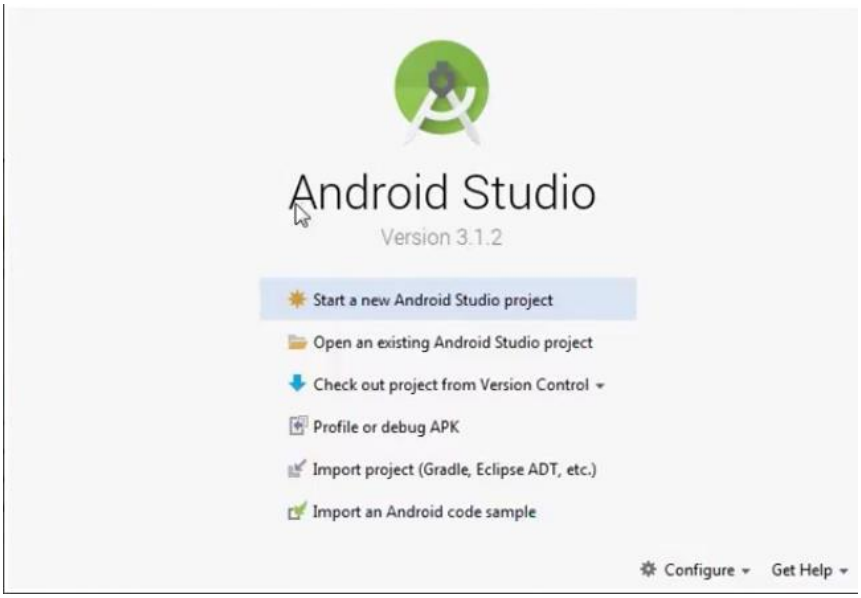


Click on Finish. Components begin to download let it complete.



The Android Studio has been successfully configured. Now it's time to launch and build apps. Click on the Finish button to launch it.

Step 9: Click on **Start a new Android Studio project** to build a new app.



To run your first android app in Android Studio you may refer to **Running your first Android app.**

Create your First Android Application

Step1: Launch Android Studio.
Step 2: Select File → New → New Project
Step 3: In "Choose your project", select "Phone and Tablet" tab → "Empty Activity" → Next.
Step 4: In "Configure your project" → Set "Name" to "Hello Android" (this will be the "Title" in your phone's application menu) → The "Package name" and "Save Location" will be updated automatically → In "Language", select "Java" → Leave the "Minimum API Level" and the rest to default →Finish.

It could take a few minutes to set up your first app. Watch the "progress bar" at the bottom status bar.

Once the progress bar indicates completion, a hello-world app is created by default.

Setup Emulator (Android Virtual Device (AVD))

To run your Android application under the emulator, you need to first create an Android Virtual Devices (AVD). An AVD models a specific device. You can create AVDs to emulate different android devices (e.g., phone/tablet, android version, screen size, and etc.).

Step 1: In Android studio, select "Tools" → AVD Manager.

Step 2: Click "Create Virtual Device".

Step 3: In "Choose a device definition" → In "Category", choose "Phone" → In "Name", choose "2.7 QVGA" (the smallest device available - you can try a bigger device later) → Next.

Step 4: In "System Image: Recommended" → Select the version with the highest API level → Click "Download" → Next.

Step 5: In "AVD Name", enter "2.7 QVGA API 27" (default) →Finish.

Running the Android Application on Emulator

Step 1: Select the "Run" menu → "Run app" → Under "Available Virtual Devices", select "2.7 QVGA API 27" → OK.

Step 2: It may take a few MINUTES to fire up the app on the emulator. You first see a Google logo → then "Android" → then the "wallpaper" → then the "Hello, world!" message.

Step 3: DO NOT CLOSE THE EMULATOR**, as it really takes a long time to start. You could always re-run the app (or run a new app) on the same emulator. Try re-run the app by selecting "Run" menu → "Run app".**

Program -1

i) Create an application to design a Visiting Card. The Visiting card should have a company logo at the top right corner.The company name should be displayed in Capital letters, aligned to the center. Information like the name of the employee, job title, phone number, address, email, fax and the website address is to be displayed. Insert a horizontal line between the job title and the phone number.

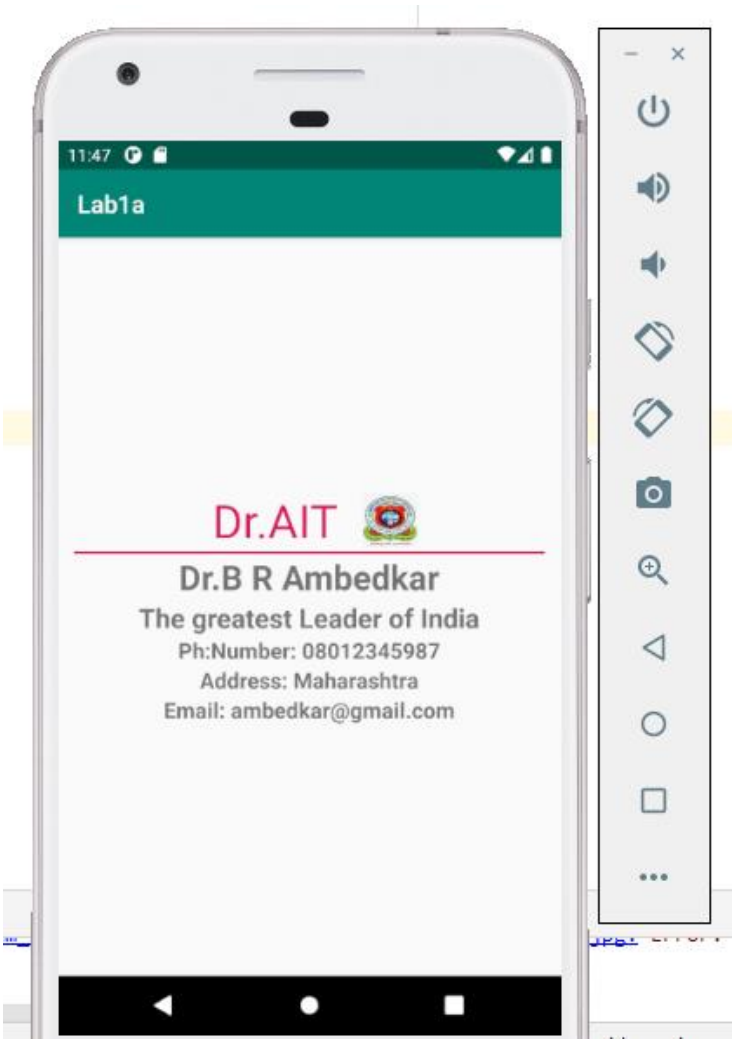
---

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
  -<LinearLayout tools:context=".MainActivity"
    android:gravity="center"
    android:orientation="vertical"
    android:layout_height="match_parent"
    android:layout_width="match_parent"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:android="http://schemas.android.com/apk/res/android">

  -<LinearLayout
    android:layout_height="wrap_content"
    android:layout_width="match_parent"
    android:layout_gravity="center_horizontal">

    <TextView
      android:layout_height="wrap_content"
      android:layout_width="wrap_content"
      android:textSize="38dp"
      android:textColor="@color/colorAccent"
      android:text=" GOOGLE"
      android:id="@+id/textView"/>

  <ImageView
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:id="@+id/imageView"
    app:srcCompat="@drawable/logo"
    android:layout_marginTop="4dp"/>

  <View
    android:layout_height="4dp"
    android:layout_width="wrap_content"
    android:id="@+id/view"
    android:layout_marginTop="103dp"
    android:background="@color/colorAccent"
    android:layout_marginBottom="498dp"/>

</LinearLayout>
```

```
<TextView
    android:layout_height="30dp"
    android:layout_width="81dp"
    android:text="Dr.B R Ambedkar"
    android:id="@+id/textView3"
    android:layout_marginBottom="16dp"
    android:textStyle="bold"/>

  <TextView
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:text="The greatest Leader of India"
    android:id="@+id/textView4"
    android:textStyle="bold"/>

  <TextView
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:text="Ph:Number: 2019201923"
    android:id="@+id/textView6"
    android:textStyle="bold"/>

  <TextView
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:text="Address: Maharashtra"
    android:id="@+id/textView7"
    android:textStyle="bold"/>

  <TextView
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:text="Email: ambedkar@gmail.com"
    android:id="@+id/textView8"
    android:textStyle="bold"/>

</LinearLayout>
```

OUTPUT


11:47
Lab1a
Dr.AIT
Dr.B R Ambedkar
The greatest Leader of India
Ph:Number: 08012345987
Address: Maharashtra
Email: ambedkar@gmail.com

Program -1

ii) Develop a simple application with one EditText so that the user can write some text in it. Create a button called "Convert Text to Speech" that converts the user input text into voice.

---

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TEXT TO SPEECH APPLICATION"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.071"     />

    <EditText
        android:id="@+id/txt_input"
        android:layout_width="237dp"
        android:layout_height="177dp"
        android:layout_marginStart="100dp"
        android:layout_marginTop="209dp"
        android:layout_marginEnd="77dp"
        android:layout_marginBottom="437dp"
        android:inputType="textMultiLine"/>

    <Button
        android:id="@+id/btn_txt2spch"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="75dp"
        android:layout_marginTop="399dp"
        android:layout_marginEnd="51dp"
        android:layout_marginBottom="284dp"

        android:text="Convert Text to Speech"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

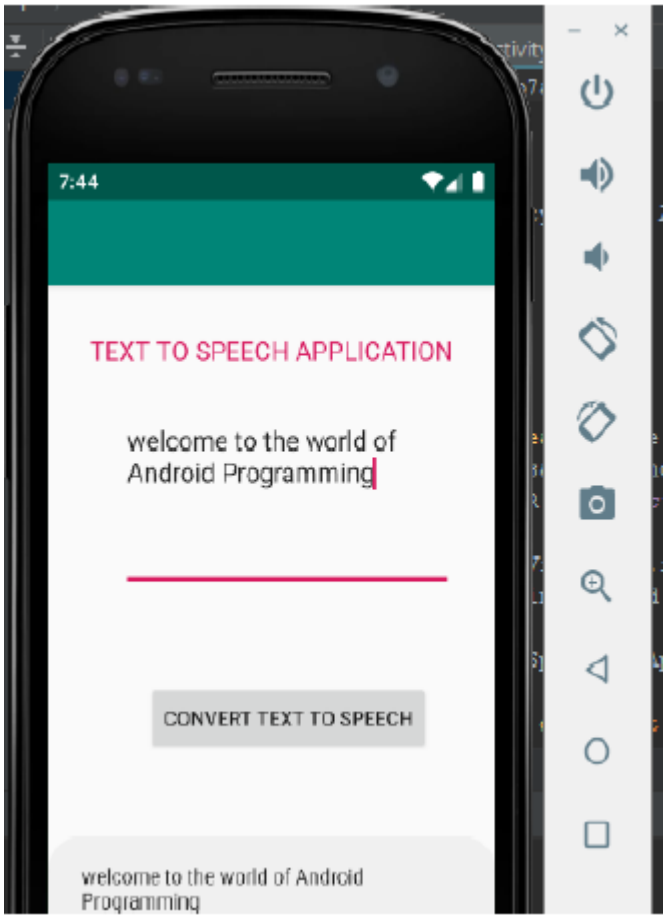
```
    app:layout_constraintTop_toTopOf="parent" />

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

MainActivity.java

```
package com.example.texttospeech;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import java.util.Locale;

public class MainActivity extends AppCompatActivity {

    TextToSpeech t1;
    EditText txtinput;
    Button txttospeech;

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

        txtinput = findViewById(R.id.txt_input);
        txttospeech = findViewById(R.id.btn_txt2spch);

        t1 = new TextToSpeech(getApplicationContext(), new TextToSpeech.OnInitListener() {
            @Override
            public void onInit(int status) {
                if(status != TextToSpeech.ERROR) {
                    t1.setLanguage(Locale.ENGLISH);
                }
            }
        });

        txttospeech.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String tospeak = txtinput.getText().toString();
                Toast.makeText(getBaseContext(),tospeak,Toast.LENGTH_SHORT).show();


                t1.speak(tospeak,TextToSpeech.QUEUE_FLUSH, null);
            }
        });
    }
```

```
    public void onPause()
    {
        if(t1 != null)
        {
            t1.stop();
            t1.shutdown();
        }
        super.onPause();    }
}
```

OUTPUT



Program -2

Write a program to create an Activity to read Employee Details (EmpId, Name, Age, Address) from user and store to database and create a menu with menu item (Show Details) on pressing menu details it must go to another activity with employee id search box and search button and display the employee details on the screen.

---

activity_main.xml

```
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical
"android:gravity="center">

<TextView
android:layout_width="match_paren"
android:layout_height="wrap_conten”
android:text="Employee_id"/>

<EditText
android:layout_width="match_paren"
android:layout_height="wrap_conten"
android:id="@+id/txt_id"/>

<TextView
android:layout_width="match_paren"
android:layout_height="wrap_conten"
android:text="Employee_name"/>

<EditText
android:layout_width="match_paren"
android:layout_height="wrap_conten"
android:id="@+id/txt_name"/>

<TextView
android:layout_width="match_paren"
android:layout_height="wrap_conten"
android:text="Employee_age"/>

<EditTextandroid:layout_width="match_parent"
android:layout_height="wrap_conten"
android:id="@+id/txt_age"/>
```

```
<TextView
android:layout_width="match_paren"
android:layout_height="wrap_conten"
android:text="Employee_address"/>

<EditText
android:layout_width="match_paren"
android:layout_height="wrap_conten"
android:id="@+id/txt_address"/>

<LinearLayout
android:layout_width="wrap_conten"
android:layout_height="wrap_conten"
android:orientation="horizontal"
android:layout_gravity="center">

<Button
android:layout_width="wrap_conten"
android:layout_height="wrap_conten"
android:text="Submit"
android:layout_gravity="center"
android:id="@+id/btn_submit"/>

<Button
android:layout_width="wrap_conten"
android:layout_height="wrap_conten"
android:text="Search"
android:layout_gravity="center"
android:id="@+id/btn_search"/>

</LinearLayout>

</LinearLayout>
```

Search.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical" >

<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Enter Employee id" />

<EditText
android:layout_width="match_pare”
android:layout_height="wrap_content”
android:id="@+id/txt_empid"/>
```

```
<Button
android:layout_width="wrap_conten
android:layout_height="wrap_content”
android:text="Search"
android:layout_gravity="center"
android:id="@+id/txt_search"/>

<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:gravity="center"
android:text="Text view"
android:id="@+id/txt_display"/>

</LinearLayout>
```

Main_activity.java

```
package com.example.employeedetails;

import android.os.Bundle;
import android.app.Activity;
import ndroid.content.ContentValues;
import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.view.Menu;
import android.view.View;
import ndroid.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {
        EditText txtid,txtname,txtage,txtaddress;
        Button btnsubmit,btnsearch;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    txtid=(EditText)findViewById(R.id.txt_id);
    txtname=(EditText)findViewById(R.id.txt_name);
    txtage=(EditText)findViewById(R.id.txt_age);
    txtaddress=(EditText)findViewById(R.id.txt_address);
    btnsubmit=(Button)findViewById(R.id.btn_submit);
    btnsubmit.setOnClickListener(this);
    btnsearch=(Button)findViewById(R.id.btn_search);
    btnsearch.setOnClickListener(this);

  }
```

```
 @Override
 public boolean onCreateOptionsMenu(Menu menu) {

// Inflate the menu; this adds items to the action bar if it is present.

 getMenuInflater().inflate(R.menu.main, menu);
return true;


 }    @Override
      public void onClick(View v) {
            // TODO Auto-generated method stub
            Toast.makeText(this, "buttonclicked", 15000).show();

            if(v.equals(btnsubmit))
            {

                  String sid=txtid.getText().toString();
                  String
                  sname=txtname.getText().toString();
                  String sage=txtage.getText().toString();
                  String saddress=txtaddress.getText().toString();

        MyDatabase dat=new MyDatabase(this,MyDatabase.DATABASE_NAME, null,1);

                  SQLiteDatabase
                  database=dat.getWritableDatabase();ContentValues
                  cv= new ContentValues();
                  cv.put("id", sid);
                  cv.put("name", sname);

                  cv.put("age",sage );
                  cv.put("address",
                  saddress);
                  database.insert("Employee", null,
                  cv);database.close();
                  Toast.makeText(this, "Data Inserted successfully", 15000).show();
            }


            else if(v.equals(btnsearch))
            {
                  Intent it=new Intent(this,SearchActivity.class);
                  startActivity(it);

            }

            }

            }
```

MyDatabase.java

```
package com.example.employeedetails;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
importandroid.database.sqlite.SQLiteDatabase.CursorFactor;
import android.database.sqlite.SQLiteOpenHelper;

  public class MyDatabase extends SQLiteOpenHelper
  {
        public static String
        DATABASE_NAME="Employee.db";public static
        String EMPLOYEE_TABLE="employee";

        public MyDatabase(Context context, String name, CursorFactory
                  factory,int version) {
            super(context, name, factory, version);
            // TODO Auto-generated constructor stub
        }

        @Override
        public void onCreate(SQLiteDatabase db) {
            // TODO Auto-generated method stub
            db.execSQL("create table employee (id TEXT,name TEXT,age TEXT,address
  TEXT)");
        }

        @Override
        public void onUpgrade(SQLiteDatabase arg0, int arg1, int arg2) {
            // TODO Auto-generated method stub

        }

  }
```

Searchactivity.java

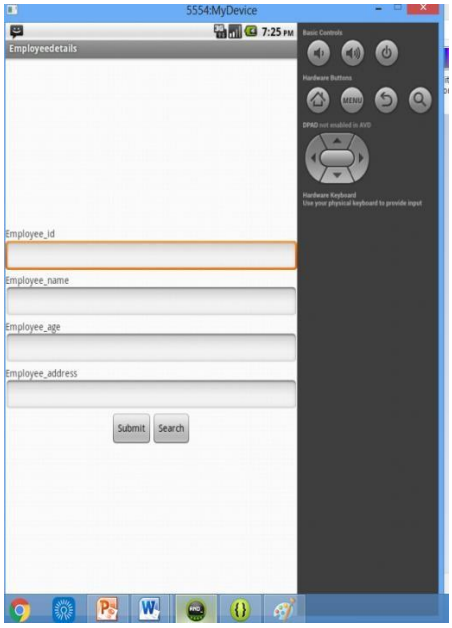
```
package com.example.employeedetails;

import android.app.Activity;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

   public class SearchActivity extends Activity implements OnClickListener{

           EditText txtempid;
           Button btnsearch;
           TextView
           txtdisplay;

   public void onCreate(Bundle b)
                   {
           super.onCreate(b);
           setContentView(R.layout.search
           );

           txtempid=(EditText)findViewById(R.id.txt_empid);
           btnsearch=(Button)findViewById(R.id.txt_search);
           txtdisplay=(TextView)findViewById(R.id.txt_display);

           btnsearch.setOnClickListener(this);

                   }

   @Override
   public void onClick(View v) {
           // TODO Auto-generated method stub
           Toast.makeText(this, "Button clicked",
           15000).show();if(v.equals(btnsearch))
           {

                   String eid=txtempid.getText().toString();

                MyDatabase dat=new MyDatabase(this, MyDatabase.DATABASE_NAME, null,1);

                   SQLiteDatabase database=dat.getReadableDatabase();
                   String[] columns=new String[]
                   {"id","name","age","address"};String where="id=?";
```

```
                String[] value= new String[]  { eid.trim() };
                Cursor cu=database.query(MyDatabase.EMPLOYEE_TABLE, columns, where,
   value, null, null, null);
                txtdisplay.setText(""
                );
                if(cu.moveToNext())
                {

                    String id=cu.getString(0);
                    String name=cu.getString(1);
                    String age=cu.getString(2);
                    String address=cu.getString(3);

                       txtdisplay.append(id+ " " +name+ " "+age+ " "+address+"\n");

}



                else
                {

Toast.makeText(this, "No Id Exist", 15000).show();


                }
        }
        }
   }
```

Manifest.xml

```
<?xmlversion="1.0"encoding="utf-8"?>
<manifestxmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.employeedetails"
android:versionCode="1"
android:versionName="1.0>

<uses-sdk
android:minSdkVersion="8"
android:targetSdkVersion="18"/>

<application
android:allowBackup="true"
android:icon="@drawable/ic_launcher"
android:label="@string/app_name"
android:theme="@style/AppTheme">
<activity
android:name="com.example.employeedetails.MainActivity"
android:label="@string/app_name">

<intent-filter>
<actionandroid:name="android.intent.action.MAIN"/>
<categoryandroid:name="android.intent.category.LAUNCHER"/>
</intent-filter>
</activity>
<activity  android:name="SearchActivity"> </activity>
</application>

    </manifest>
```

OUTPUT:


5554:MyDevice
Employeedetails
Employee_id
Employee_name
Employee_age
Employee_address
Submit
Search


5554:MyDevice
Employeedetails
Employee_id
110231
Employee_name
Ramya
Employee_age
21
Employee_address
Bangalore
Submit
Search


5554:MyDevice
Employeedetails
110231
Ramya
21
Bangalore
Submit
Search
buttonClicked


5554:MyDevice
Employeedetails
110231
Ramya
21
Bangalore
Submit
Search
Data Inserted successfully


5554:MyDevice
7:45 PM
Employeedetails
Enter Employee Id:
110231
Search
Text view
110231


5554:MyDevice
7:47 PM
Employeedetails
Enter Employee Id:
110231
Search
110231 Ramya 21 Bangalore
110231

Program -3

Write a program to create an activity with a text box and three buttons (save, ,open and create) open must allow to browse the text file from sdcard and must display the contents of the file on textbox, save button must save the contents of text box to file, create button must allow file user to create a new file and save the entered contents of the textbox.

---

activity_main.xml

```
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical
   "android:gravity="center">

   <LinearLayout
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:orientation="horizontal"
   android:gravity="center">


   <Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Create new file"
   android:id="@+id/btn_create"
   android:layout_gravity="left"/>

   <Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Open"
   android:id="@+id/btn_open"
   android:layout_gravity="right"/>

   </LinearLayout>

  <TextView
   android:layout_width="fill_parent"
   android:layout_height="wrap_content"
   android:gravity="center"
   android:text="File:"
   android:id="@+id/lbl_file" />
```

```
   <EditText
   android:layout_width="match_parent"
   android:layout_height="200dp"
   android:id="@+id/txt_content"/>

      <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Save"
      android:layout_gravity="center"
      android:id="@+id/btn_save"/>

</LinearLayout>
```

Dialog_layout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical" >

   <TextView
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:text="Enter File Name"/>

     <EditText
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:id="@+id/txt_filename"/>

</LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p2"
   android:versionCode="1"
   android:versionName="1.0"
   >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18"
      />
   <uses-permission
   android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>

   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
         android:name="com.example.p2.MainActivity"
         android:label="@string/app_name" >
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />

          <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>

</manifest>
```

MainActivity.java

```
packagecom.example.p2;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;

import android.os.Bundle;
import android.os.Environment;
import android.app.Activity;
import android.app.AlertDialog;
import android.content.DialogInterface;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import
android.view.View.OnClickListener;import
android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {

        TextView lblFile;
        EditText txtContent;
        Button

        btnCreate,btnSave,btnOpen;int

        FILE_CHOOSE_REQUEST=1;

        String filepath;

        String

        filename;


    @Override
    protected void onCreate(Bundle savedInstanceState)
      {super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      lblFile=(TextView)findViewById(R.id.lbl_file);

      txtContent=(EditText)findViewById(R.id.txt_content);
```

```
    btnCreate=(Button)findViewById(R.id.btn_create);
    btnCreate.setOnClickListener(this);

    btnSave=(Button)findViewById(R.id.btn_save);
    btnSave.setOnClickListener(this);

    btnOpen=(Button)findViewById(R.id.btn_open);
    btnOpen.setOnClickListener(this);
  }

  @Override
  public boolean onCreateOptionsMenu(Menu menu) {
    // Inflate the menu; this adds items to the action bar if it is present.
    getMenuInflater().inflate(R.menu.main, menu);
    return true;
  }

  public void onActivityResult(int requestCode,int resultCode, Intent data)
  {
        super.onActivityResult(requestCode, resultCode, data);


                if(resultCode==RESULT_OK)
                {
                        filepath=data.getData().getPath();
                        filename=filepath.substring(filepath.lastIndexOf("/")+1);
                        filepath=filepath.substring(0,filepath.lastIndexOf("/"));

                        readFromFile(filepath,filename);
                        lblFile.setText(filepath+"/"+filename);
                }
                else
                {
                        Toast.makeText(this,"Wrong Choice of File",
Toast.LENGTH_LONG).sho
              w();
                }


  }

  public void writeToFile(String path,String filename)
  {
        try {
```

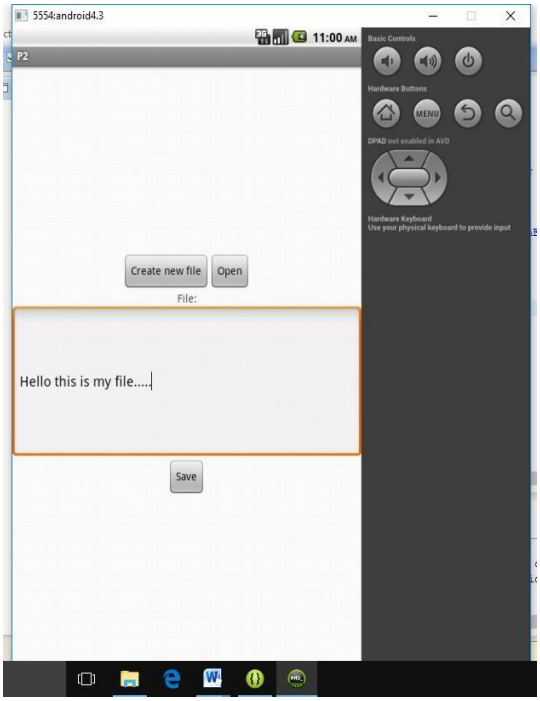
```
                    FileOutputStream fileout=new
FileOutputStream(newFile(path+"/"+filename));
                    OutputStreamWriter outputWriter=new
                    OutputStreamWriter(fileout);
                    outputWriter.write(txtContent.getText().toString());
                    outputWriter.close();

                    //display file saved message
                    Toast.makeText(getBaseContext(), "File Saved
                    successfully!",Toast.LENGTH_SHORT).show();

               } catch (Exception e) {
                    Toast.makeText(getBaseContext(),
                              e.getLocalizedMessage(),
                              Toast.LENGTH_SHORT).show();
               }
  }


  public void readFromFile(String path,String filename)
  {
       try {
                    FileInputStream fileIn=new FileInputStream(path+"/"+filename);
                    InputStreamReader inputReader= new InputStreamReader(fileIn);

                    BufferedReader br=new
                    BufferedReader(inputReader);String
                    data=br.readLine();
                    while(data!=null)
                    {
                         txtContent.append(data)
                         ;data=br.readLine();
                    }
                    br.close();


               } catch (Exception e) {
                    Toast.makeText(getBaseContext(),e.getLocalizedMessage(),
                              Toast.LENGTH_SHORT).show();
               }
  }

  public void onShowCreateDialog()
  {
       AlertDialog.Builder builder=new AlertDialog.Builder(this);
       final View dialogView=getLayoutInflater().inflate(R.layout.dialog_layout,
       null);builder.setView(dialogView);
       builder.setPositiveButton("Ok", new

                    DialogInterface.OnClickListener() {@Override
```

```
                    public void onClick(DialogInterface arg0, int arg1) {
                            // TODO Auto-generated method
                            stubEditText
txtFilename=(EditText)dialogView.findViewById(R.id.txt_filename);

        filepath=Environment.getExternalStorageDirectory().getAbsolutePath();
                            filename=txtFilename.getText().toString();
                            File f=new File(filepath+"/"+filename);
                            try {
                                    f.createNewFile();
                            } catch (IOException e) {
                                    // TODO Auto-generated catch
                                    block
                                    Toast.makeText(getBaseContext(),
              ""+e.getLocalizedMessage(),
                 Toast.LENGTH_LONG).show();
                            }

                            lblFile.setText(filepath+"/"+filename);


                    }
                });
        builder.setNegativeButton("Cancel",
        null);AlertDialog
        dialog=builder.create(); dialog.show();
    }


        @Override
        public void onClick(View v) {
                // TODO Auto-generated method stub

                if(v.equals(btnOpen))
                {
                        Intent it=new Intent(Intent.ACTION_GET_CONTENT);
                        //it.setType("*.*");
                        it.setType("file/*");
                        startActivityForResult(it,
                        0);
                }
                else if(v.equals(btnCreate))
                {
                        onShowCreateDialog();
                }
                else if(v.equals(btnSave))
                {
                        writeToFile(filepath, filename);
                }
```

}

}

OUTPUT:


5554:android4.3
11:00 AM
P2
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard
Use your physical keyboard to provide input
Create new file
Open
File:
Hello this is my file.....
Save


5554:android4.3
11:03 AM
P2
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard
Use your physical keyboard to provide input
Create new file
Open
File:
Enter File Name
sharan.txt
Ok
Cancel
Save

Program -4

Write a program to create an activity with two text boxes (date /time and note contents). Create a content provider to store the date and time and note contents to the database. Create another program with a Button (Fetch Today Notes) on press must access the note provider and display the notes stored for today's date.

---

activity_main.xml

Content Provider part

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:gravity="center"
    android:orientation="vertical"
    >

<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Enter Date:" />

 <EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/txt_date" />

  <TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Enter Note Content:" />

   <EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/txt_Content"
    android:height="200dp" />

     <Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Add Note"
    android:id="@+id/btn_add_note" />

   </LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p3noteprovider"
   android:versionCode="1"
   android:versionName="1.0"
   >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18"
      />

   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
         android:name="com.example.p3noteprovider.MainActivity"
         android:label="@string/app_name" >
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>

      <provider android:name="NotesProvider"
       android:authorities="com.example.notesprovider"
       android:exported="true"/>

   </application>

</manifest>
```

MainActivity.java

```
package com.example.p3noteprovider;

import android.net.Uri;
import android.os.Bundle;
import android.app.Activity;
import android.content.ContentValues;
import android.view.Menu;
import android.view.View;
import ndroid.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;


public class MainActivity extends Activity implements OnClickListener {

        EditText txtDate,txtContent;
        Button btnAddNote;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      txtDate=(EditText)findViewById(R.id.txt_date);
      txtContent=(EditText)findViewById(R.id.txt_Content);

      btnAddNote=(Button)findViewById(R.id.btn_add_note);
      btnAddNote.setOnClickListener(this);
   }
   @Override
   public boolean onCreateOptionsMenu(Menu menu) {
      // Inflate the menu; this adds items to the action bar if it is present.
      getMenuInflater().inflate(R.menu.main, menu);
      return true;
   }

@Override
        public void onClick(View v) {
                // TODO Auto-generated method stub

                if(v.equals(btnAddNote))
                {
                        String sdate=txtDate.getText().toString();
                        String scontent=txtContent.getText().toString();

                         ContentValues values = new ContentValues();
                    values.put("note_date",sdate);
                    values.put("content",scontent);



getContentResolver().insert(Uri.parse("content://com.example.notesprovider/notes"),
values);
```

```
                Toast.makeText(getBaseContext(),"Data Inserted Successfully",
Toast.LENGTH_LONG).show();
            }

        }

}
```

NotesProvider.java

```
package com.example.p3noteprovider;

import
android.content.ContentProvider;
import android.content.ContentValues;
import android.content.Context;
import
android.content.UriMatcher;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import
android.database.sqlite.SQLiteQueryBuilder;
import android.net.Uri;

public class NotesProvider extends ContentProvider
{
        static final String URL =
        "content://com.example.notesprovider/notes";SQLiteDatabase db;
        ProviderDatabase dbHelper;

        static final UriMatcher
          uriMatcher;static{
            uriMatcher = new UriMatcher(UriMatcher.NO_MATCH);
            uriMatcher.addURI("com.example.notesprovider", "notes",1);
          }

        @Override
        public int delete(Uri arg0, String arg1, String[] arg2) {
                // TODO Auto-generated method
                stubreturn 0;
        }

        @Override
        public String getType(Uri arg0) {
                // TODO Auto-generated method
                stubreturn null;
        }



        @Override
        public Uri insert(Uri arg0, ContentValues cv) {
                // TODO Auto-generated method
                stubdb =
```

```
                dbHelper.getWritableDatabase();
                db.insert(ProviderDatabase.TABLE_NAME,null,cv)
                ;db.close();
               return null;
        }

        @Override
        public boolean onCreate() {
                // TODO Auto-generated method stub

                 dbHelper=new
  ProviderDatabase(getContext(),ProviderDatabase.DATABASE_NAME+".db",null,1);
       return (db == null)? false:true;

        }

        @Override
        public Cursor query(Uri uri, String[] arg1, String arg2, String[]
                        arg3,String arg4) {
                // TODO Auto-generated method

                stubCursor cursor=null;

              db = dbHelper.getReadableDatabase();
cursor=db.query(ProviderDatabase.TABLE_NAME,ar
  g1,arg2,arg3,arg4,null,null);
return cursor;

      }

      @Override
      public int update(Uri arg0, ContentValues arg1, String arg2, String[] arg3) {
              // TODO Auto-generated method stub
              return 0;
      }
      }
```

ProviderDatabase.java

```
package com.example.p3noteprovider;import

android.content.Context;
```

```
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteDatabase.CursorFactory;
import android.database.sqlite.SQLiteOpenHelper;

	public class ProviderDatabase extends SQLiteOpenHelper
	{
public static String DATABASE_NAME="noteprovider";
public static String TABLE_NAME="notes";
public static String COLUMN_DATE="note_date";
public static String COLUMN_NOTE="content";

	  public ProviderDatabase(Context context, String
			name,CursorFactory factory, int
			version) {
		super(context, name, factory, version);

		// TODO Auto-generated constructor stub
	  }

	  @Override
	  public void onCreate(SQLiteDatabase db) {
		// TODO Auto-generated method stub

		db.execSQL("create table notes (note_date TEXT,content TEXT)");


	  }

	  @Override
	  public void onUpgrade(SQLiteDatabase db, int arg1, int arg2) {
		// TODO Auto-generated method stub

	  }
	  }
```

Content Resolver part

activity_main.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
```

```
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:orientation="vertical
    "android:gravity="center">

  <TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Enter Date toSearch"/>

    <EditText android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/txt_search"/>

    <Button
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/btn_search"
      android:text="Search"/>

     <TextView
      android:layout_width="wrap_conten"
      android:layout_height="wrap_content
      "android:text="Data To Show"
      android:id="@+id/lbl_message"/>

  </LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.p3providerclient"
  android:versionCode="1"
  android:versionName="1.0"
  >
```

```
    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="18"
        />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="com.example.p3providerclient.MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

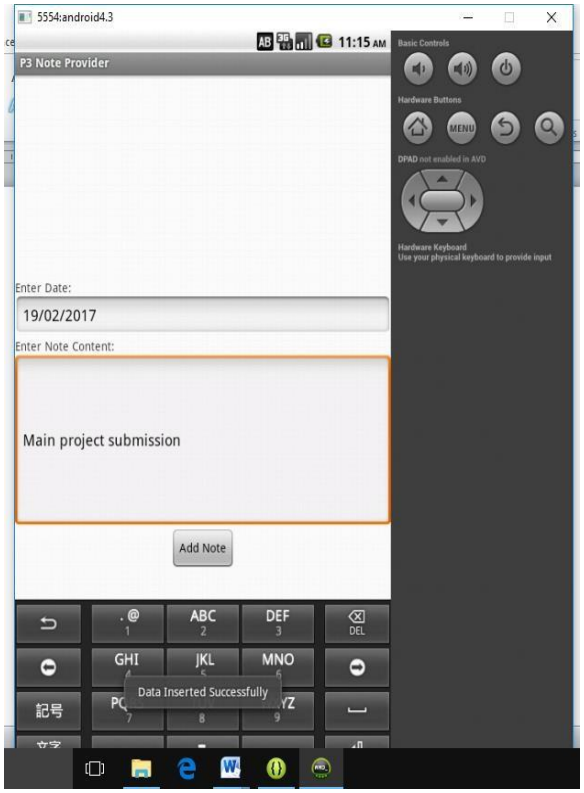
MainActivity.java

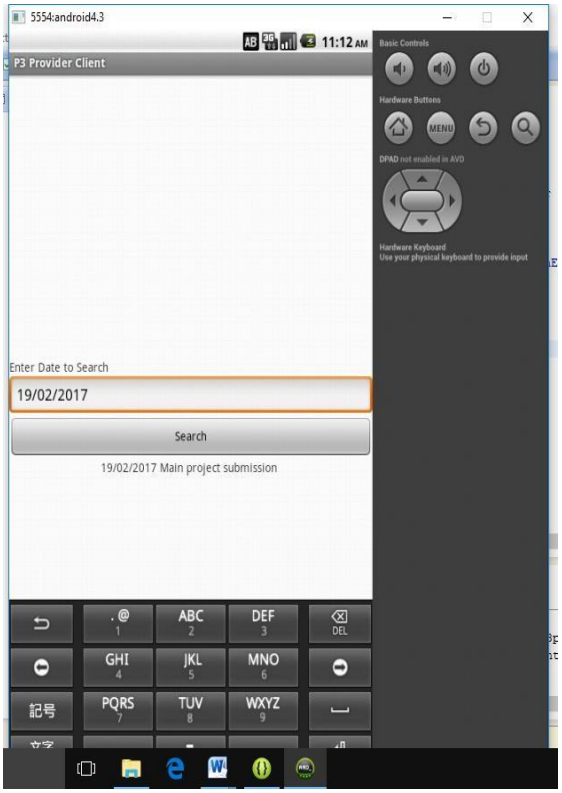
```
package com.example.p3providerclient;

import android.net.Uri;
import android.os.Bundle;
import android.app.Activity;
```

```
import android.content.ContentValues;
import android.database.Cursor;
import android.view.Menu;
import android.view.View;
import
android.view.View.OnClickListener;import
android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;



public class MainActivity extends Activity implements OnClickListener {

        EditText txtSearch;
        Button btnSearch;

        TextView lblMessage;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      txtSearch=(EditText)findViewById(R.id.txt_search);
      lblMessage=(TextView)findViewById(R.id.lbl_message);

      btnSearch=(Button)findViewById(R.id.btn_search);
      btnSearch.setOnClickListener(this);

   }

   @Override
   public boolean onCreateOptionsMenu(Menu menu) {
      // Inflate the menu; this adds items to the action bar if it is present.
      getMenuInflater().inflate(R.menu.main, menu);
      return true;
   }









        @Override
        public void onClick(View v) {
                // TODO Auto-generated method stub

                if(v.equals(btnSearch))
                {
                        String searchDate=txtSearch.getText().toString();
         String where="note_date=?";
```

```
                Cursor cursor
=getContentResolver().query(Uri.parse("content://com.example.notesprovider/notes")
,new String[]{"note_date","content"},where, new String[]{searchDate},null);

                if(cursor!=null&&cursor.moveToNext())
                {

                    String ndate=cursor.getString(0);
                    String content=cursor.getString(1);

                    lblMessage.setText(ndate+" "+content+"\n");
                }
                else
                {
                Toast.makeText(getBaseContext(),"No                Data
                                                                   Available",
Toast.LENGTH_LONG).show();
                }
            }

        }

}
```

OUTPUT





Program -5

Create a program to create an activity with two buttons start and stop. On pressing start button the program must start the counter and must keep on counting until stop button is pressed.

---

activity_main.xml

```
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical
   "android:gravity="center">


<TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Counter"
      android:layout_gravity="center"
      android:id="@+id/lbl_counter"/>

<Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="start"
      android:layout_gravity="center"
      android:id="@+id/btn_start"/>

<Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="stop"
      android:layout_gravity="center"
      android:id="@+id/btn_stop"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.p4;

    import android.os.Bundle;
    import android.os.Handler;
    import android.os.Message;
    import android.app.Activity;
    import android.view.Menu;
    import android.view.View;
    import android.view.View.OnClickListener;
    import android.widget.Button;
    import android.widget.TextView;

    public class MainActivity extends Activity implements OnClickListener,

        Runnable{int i=0;
        TextView lblcounter;
        Button btnstart,btnstop;
        Thread thread;

        boolean running=false;

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

          btnstart=(Button)findViewById(R.id.btn_start);
          btnstop=(Button)findViewById(R.id.btn_stop);
          btnstart.setOnClickListener(this);
          btnstop.setOnClickListener(this);

          lblcounter=(TextView)findViewById(R.id.lbl_counter);

       }


       @Override
       public boolean onCreateOptionsMenu(Menu menu) {
          // Inflate the menu; this adds items to the action bar if it is present.
          getMenuInflater().inflate(R.menu.main, menu);
          return true;
       }
```

```
	@Override
	public void onClick(View v) {
		// TODO Auto-generated method
		stubif(v.equals(btnstart))
		{
			running=true;
		thread=new
		Thread(this);
		thread.start();
		}

		else if(v.equals(btnstop))
		{
			//thread.interrupt();
			running=false;
		}


	}

	Handler hand=new Handler()
	{
		public void handleMessage(Message m)
		{
			lblcounter.setText(""+m.what);
		}
	};

	@Override
	public void run() {
		// TODO Auto-generated method stub
		//int i=0;

		while(i<100 && running)

		{
			try {
				Thread.sleep(1000);
			} catch (InterruptedException e) {
				// TODO Auto-generated catch
				blocke.printStackTrace();
			}
			hand.sendEmptyMessage(i)
			;i++;
			// lblcounter.setText(""+i);

		}

	}

}
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p4"
   android:versionCode="1"
   android:versionName="1.0"
   >

<uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18"
      />


<application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme">
<activity
         android:name="com.example.p4.MainActivity"
         android:label="@string/app_name">
<intent-filter>
<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
</application>

</manifest>
```

OUTPUT:


5554:MyDevice
7:51 PM
COUNTER
START
STOP


5554:MyDevice
7:53 PM
7
START
STOP


5554:MyDevice
8:00 PM
10
START
STOP


5554:MyDevice
8:01 PM
12
START
STOP

Program -6

Create a program to receive the incoming SMS to the phone and put a notification on screen, on clicking the notification it must display sender number and message content on screen.

---

activity_main.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:gravity="center">

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Sender Number"
      android:paddingBottom="50px"
      android:id="@+id/lbl_number"/>

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Message content"
      android:id="@+id/lbl_message"/>

</LinearLayout>
```

MainActivity.java

```
package  com.example.p5; import
android.os.Bundle; import
android.app.Activity; import
android.view.Menu; import
android.widget.TextView;

   public class MainActivity extends
            Activity {TextView
            lblnumber,lblmessage;

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

```
        lblnumber=(TextView)findViewById(R.id.lbl_number);
        lblmessage=(TextView)findViewById(R.id.lbl_message);
        Bundle b= getIntent().getBundleExtra("data");

          if(b!=null)
          {
String number=b.getString("number");
String content=b.getString("content");

          lblnumber.setText(number)
          ;
          lblmessage.setText(content);
          }
          }
       @Override
        public boolean onCreateOptionsMenu(Menu menu) {
          // Inflate the menu; this adds items to the action bar if it is present.
          getMenuInflater().inflate(R.menu.main, menu);
          return true;
        }
    }
```

MySmsReceiver.java

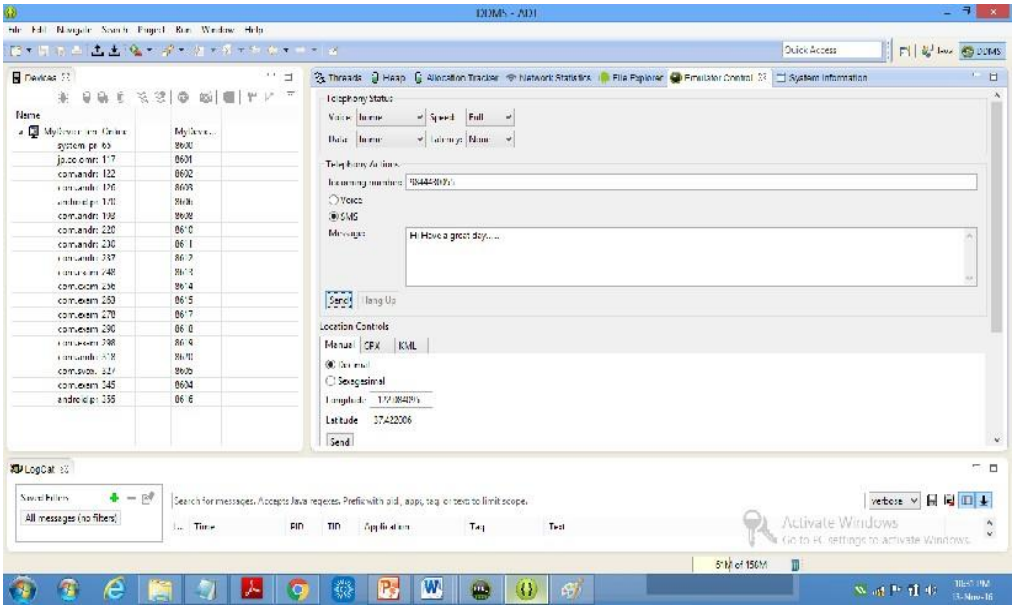
```
    package com.example.p5;
    import
    android.content.BroadcastReceiver;
    import android.content.Context;
    import
    android.content.Intent;
    import android.os.Bundle;
    import android.telephony.SmsMessage;

    public class MySmsReceiver extends BroadcastReceiver{
            @Override
            public void onReceive(Context arg0, Intent arg1) {
                    // TODO Auto-generated method stub
                    Object[]
                    objmessages=(Object[])arg1.getExtras().get("pdus");
                    for(int i=0; i<objmessages.length;i++)
                    {
                            SmsMessage
                            m=SmsMessage.createFromPdu((byte[])objmessages[i]);Bundle
                            b1=new Bundle();
                            b1.putString("number",
                            m.getOriginatingAddress());
                            b1.putString("content", m.getMessageBody());
                            Intent it=new Intent(arg0, MainActivity.class);
                            it.putExtra("data", b1);
```

```
                    it.setFlags(Intent.FLAG_ACTIVITY_NEW_
                    TASK);arg0.startActivity(it);
                    break;
                }
            }
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.p5"
  android:versionCode="1"
  android:versionName="1.0"
  >

  <uses-sdk
    android:minSdkVersion="8"
    android:targetSdkVersion="18"
    />
  <uses-permission android:name="android.permission.RECEIVE_SMS"/>
  <application
    android:allowBackup="true"
    android:icon="@drawable/ic_launcher"
    android:label="@string/app_name"
    android:theme="@style/AppTheme" >
    <activity
      android:name="com.example.p5.MainActivity
      "android:label="@string/app_name" >
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
    <receiver android:name="com.example.p5.MySmsReceiver">
     <intent-filter>
      <action android:name="android.provider.Telephony.SMS_RECEIVED"/>
     </intent-filter>
    </receiver>
      </application>
</manifest>
```

OUTPUT:


DDMS - ADT
Hi Have a great day.....
Send
Hang Up
Latitude
Send
LogCat
All messages (no filters)
Activate Windows


5554:MyDevice
10:33 PM
9844430055
Hi Have a great day.....


5554:MyDevice
November 13, 2016
10:36 PM
Android
Clear
Notifications
9844430055
Hi Have a great day.....
10:36 PM

Program -7

Create a program to create a service that will put a notification on the screen every 5 seconds.

---

activity_main.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
         android:orientation="vertical"
         android:gravity="center"    >

   <Button
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:text="Start Notification"
     android:layout_gravity="center"
     android:id="@+id/btn_start"/>


   <Button
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
      android:text="Stop  Notification"
      android:layout_gravity="center"
      android:id="@+id/btn_stop"/>
   </LinearLayout>
```

MainActivity.java

```
   package com.example.p6;
   import android.os.Bundle;
   import android.app.Activity;
   import
   android.content.Intent;
   import android.view.Menu;
   import android.view.View;
   import
   android.view.View.OnClickListener;
   import android.widget.Button;
   import android.widget.Toast;

   public class MainActivity extends Activity implements OnClickListener{
            Button btnstart,btnstop;
@Override
      protected void onCreate(Bundle savedInstanceState)
         {super.onCreate(savedInstanceState);
         setContentView(R.layout.activity_main);
         btnstart=(Button)findViewById(R.id.btn_start);
         btnstart.setOnClickListener(this);
```

```
        btnstop=(Button)findViewById(R.id.btn_stop);
        btnstop.setOnClickListener(this);
          }
      @Override
      public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.main, menu);
        return true;
      }
    @Override
            public void onClick(View v) {
                    // TODO Auto-generated method stub

                    if(v.equals(btnstart))
                    {
                            Intent it=new
                            Intent(this,ServiceClass.class);Bundle
                            b=new Bundle(); b.putBoolean("stop",
                            true); it.putExtra("data", b);
                            startService(it);
                     }

                    else
                  {

                  Intent it=new Intent(this,ServiceClass.class);
                  stopService(it);


                  }
          }

}
```

ServiceClass.Java

```
package com.example.p6; import

android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import  android.app.Service;
import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import android.os.IBinder;
import android.os.Message;
import android.support.v4.app.NotificationCompat;
import android.view.ViewDebug.FlagToString;
import android.widget.Toast;

   public class ServiceClass extends Service{

           boolean
           running=false;
           MyThread thread;


           public void onCreate()
           {
                   super.onCreate();
                   Toast.makeText(getBaseContext(), "Service
   Created",Toast.LENGTH_LONG).show();
                   running=true;
                   thread=new
                   MyThread();
                   thread.start();
           }

           public int onStartCommand(Intent intent, int flags,int startId)
           {
                   super.onStartCommand(intent, flags, startId);
   Toast.makeText(getBaseContext(), "Service started",
   Toast.LENGTH_LONG).show();
                Bundle b=intent.getBundleExtra("data");
                running=b.getBoolean("stop");

                   if(!thread.isAlive())
                   {
                           thread=new
                           MyThread();
                           thread.start();
                   }
```

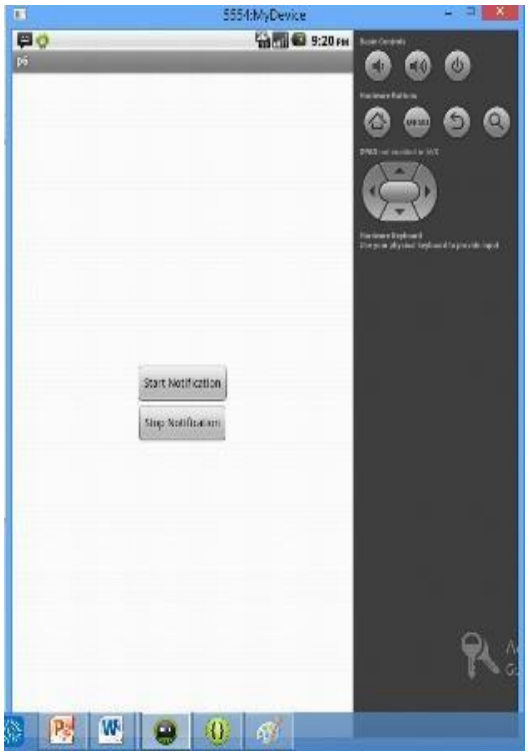
```
		return Service.START_NOT_STICKY;
	}

	@Override
	public  IBinder  onBind(Intent arg0) {
		// TODO Auto-generated method
		stubreturn null;
	}

	public void onDestroy()
	{
		running=false;
Toast.makeText(getBaseContext(), "Service stoped",
Toast.LENGTH_LONG).show();
		super.onDestroy();
	}

	Handler hand=new Handler()
	{
		public void handleMessage(Message m)
		{
		    NotificationManager
manager=(NotificationManager)getSystemService(NOTIFICATION_SERVICE);
			NotificationCompat.Builder
  builder=newNotificationCompat.Builder(getBaseContext());
			builder.setContentTitle("From Service");
			builder.setContentText("Hai " +m.what);
			builder.setSmallIcon(R.drawable.ic_launcher);
			builder.setContentIntent(PendingIntent.getActivity(getBaseContext(),
  1,new Intent(getBaseContext(),MainActivity.class),1));
			Notification
			nof=builder.build();
			manager.notify(100, nof);

		}

	};
```

```
        class MyThread extends Thread
        {
                public void run()
                {
                    int i=0;
                    while(running)
                      {

                      try {
                            Thread.sleep(5000);
                      } catch (InterruptedException e) {
                            // TODO Auto-generated catch
                            blocke.printStackTrace();
                      }

                      hand.sendEmptyMessage(i++);
                      }
                }
        }
}
```

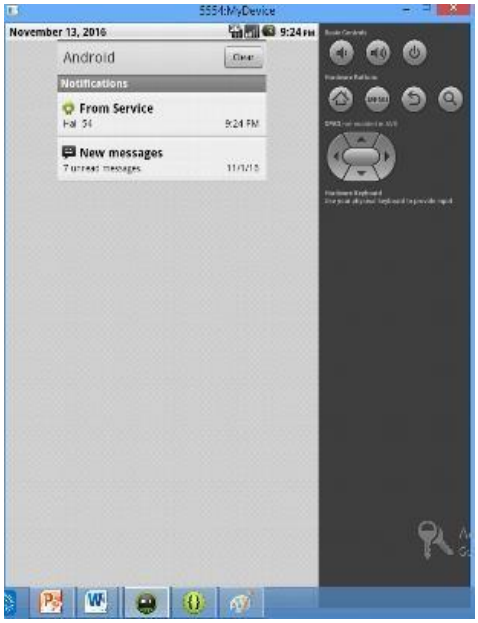
AndroidManifest.xml

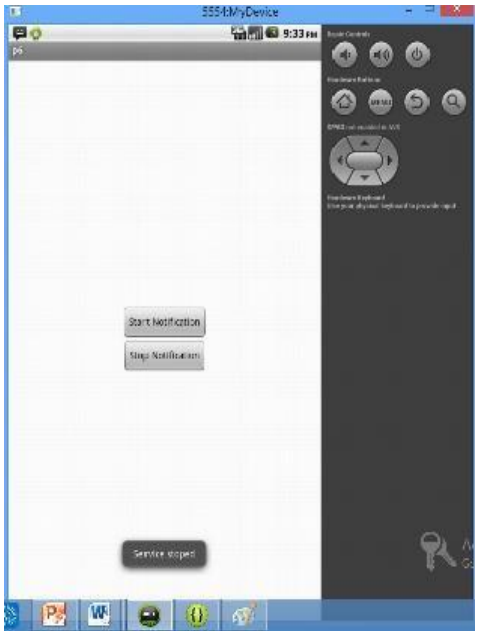
```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.p6"
  android:versionCode="1"
  android:versionName="1.0" >
  <uses-sdk
    android:minSdkVersion="8"
    android:targetSdkVersion="18" />
    <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
        android:name="com.example.p6.MainActivity"
        android:label="@string/app_name" >
        <intent-filter>
          <action android:name="android.intent.action.MAIN" />
          <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
      </activity>
      <service android:name="ServiceClass"></service>

    </application>

  </manifest>
```

OUTPUT:


5554:MyDevice
9:20 PM
Start Notification
Stop Notification


5554:MyDevice
9:23 PM
Start Notification
Stop Notification
Service started


5554:MyDevice
November 13, 2016
9:24 PM
Android
Clear
Notifications
From Service
9:24 PM
New messages


5554:MyDevice
9:33 PM
Start Notification
Stop Notification
Service stopped

Program -8

Create an .aidl service to do add, subtraction and multiplication and create another application with two buttons to read the inputs and three button add,subtract and multiply to call add,subtract and multiply operation on .aidl service.

---

activity_main.xml

Part-1 (has an empty layout)

Activity_main.xml

-NA-

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
  package="com.example.p7"
  android:versionCode="1"
  android:versionName="1.0" >

<uses-sdk android:minSdkVersion="8"
  android:targetSdkVersion="18" />
    <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
        android:name="com.example.p7.MainActivity"
        android:label="@string/app_name" >
        <intent-filter>
          <action android:name="android.intent.action.MAIN" />
          <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
      </activity>
      <service
        android:name="MyCalService">
       <intent-filter>
         <action android:name="com.simple.cal"/>
       </intent-filter>
      </service>

    </application>

  </manifest>
```

calculator.aidl

Create a new package and under this , new ->file->save with .aidl extension

```
package com.example.cal;

 interface calculator
{
int add(int a, int b);
int sub(int a, int b);
int mul(int a, int b);
}
```

MyCalService.java

```
package com.example.p7;

import com.example.cal.calculator;

import android.app.Service;
import android.content.Intent;
import android.os.IBinder;
import android.os.RemoteException;

public class MyCalService extends

Service{

        @Override
        public IBinder onBind(Intent arg0) {
                // TODO Auto-generated method
                stubreturn stub;
        }

        calculator.Stub stub=new

                calculator.Stub() {@Override
                public int sub(int a, int b) throws RemoteException {
                        // TODO Auto-generated method
                        stubreturn a-b;
                }
```

```
        @Override
        public int mul(int a, int b) throws RemoteException {
            // TODO Auto-generated method
            stubreturn a*b;
        }

        @Override
        public int add(int a, int b) throws RemoteException {
            // TODO Auto-generated method
            stubreturn a+b;
        }
    };
}
```

Part-2

Activity_main.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center" >

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter first number" />

<EditText android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/txt_first"/>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enter second number" />

<EditText android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/txt_second"/>

    <TextView
     android:layout_width="wrap_content
     "
     android:layout_height="wrap_content
     "android:text="result"
     android:id="@+id/txt_result"/>
```

```
<LinearLayout
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="horizontal"
android:gravity="center">

<Button android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="add"
   android:layout_gravity="center"
   android:id="@+id/btn_add"/>

<Button android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="sub"
   android:layout_gravity="center"
   android:id="@+id/btn_sub"/>

 <Button android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="mul"
   android:layout_gravity="center"
   android:id="@+id/btn_mul"/>

</LinearLayout>
</LinearLayout>
```

Manifest.xml

```
   <?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p7_1"
   android:versionCode="1"
   android:versionName="1.0" >
<uses-sdk android:minSdkVersion="8"
   android:targetSdkVersion="18" />
      <application
         android:allowBackup="true"
         android:icon="@drawable/ic_launcher"
         android:label="@string/app_name"
         android:theme="@style/AppTheme" >
         <activity
            android:name="com.example.p7_1.MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
               <action android:name="android.intent.action.MAIN" />

               <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
         </activity>
        </application>
   </manifest>
```

calculator.aidl

Create a new package and under this , new ->file->save with .aidl extension

```
package com.example.cal;

 interface calculator
{
int add(int a, int b);
int sub(int a, int b);
int mul(int a, int b);
 }
```

MainActivity.java

```
package  com.example.p7_1;

import com.example.cal.calculator;

import android.os.Bundle;
import android.os.IBinder;
import android.os.RemoteException;
import android.app.Activity;
import android.content.ComponentName;
import android.content.Intent;
import android.content.ServiceConnection;
import android.view.Menu;
import android.view.View;
importandroid.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener,

        ServiceConnection{EditText txtfirst, txtsecond;
        Button
        btnadd,btnsub,btnmul;
        TextView txtresult;

    calculator cal;
```

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

   txtfirst=(EditText)findViewById(R.id.txt_first);
   txtsecond=(EditText)findViewById(R.id.txt_second);
   txtresult=(TextView)findViewById(R.id.txt_result);
   btnadd=(Button)findViewById(R.id.btn_add);
   btnadd.setOnClickListener(this);
   btnsub=(Button)findViewById(R.id.btn_sub);
   btnsub.setOnClickListener(this);
   btnmul=(Button)findViewById(R.id.btn_mul);
   btnmul.setOnClickListener(this);
   bindService(new Intent("com.simple.cal"), this, BIND_AUTO_CREATE);


}

@Override
public boolean onCreateOptionsMenu(Menu menu) {
   // Inflate the menu; this adds items to the action bar if it is present.
   getMenuInflater().inflate(R.menu.main, menu);
   return true;
}


@Override
public void onClick(View v) {
      // TODO Auto-generated method stub

      String s1=txtfirst.getText().toString();
      String
      s2=txtsecond.getText().toString();

      int
      a=Integer.parseInt(s1);
      int
      b=Integer.parseInt(s2);


      if(v.equals(btnadd))
      {
       try {
                  int result=cal.add(a,b);
                  txtresult.setText(""+result
                  );
            } catch (RemoteException e) {
                  // TODO Auto-generated catch
                  blocke.printStackTrace();
```

```
                }
            }


            else if(v.equals(btnsub))
            {
          try {
          int result=cal.sub(a,b);
          txtresult.setText(""+result);
              } catch (RemoteException e) {
// TODO Auto-generated catch blocke.printStackTrace();
}
}

else if(v.equals(btnmul))

{ try
 {int result=cal.mul(a,b); txtresult.setText(""+result);

                } catch (RemoteException e) {
                        // TODO Auto-generated catch
                        blocke.printStackTrace();
                }
            }      }
@Override
public void onServiceConnected(ComponentName arg0, IBinder arg1) {
          // TODO Auto-generated method stub
          Toast.makeText(getBaseContext(), "Service Connected",
Toast.LENGTH_LONG).show();
   cal=(calculator)calculator.Stub.asInterface(arg1);
            }


            @Override
            public void onServiceDisconnected(ComponentName arg0) {
                    // TODO Auto-generated method stub

            }

        }
```

OUTPUT:

Addition

Subtraction

Multiplication

Program -9

Create an activity like a phone dialer with (1,2,3,4,5,6,7,8,9,0,*,#) buttons and call and save button on pressing the call button, it must call the phone number and on pressing the save button it must save the number to the phone contacts.

---

activity_main.xml

```
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:gravity="center"
   android:orientation="vertical"
   >

   <RelativeLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content>

      <Button
      android:id="@+id/btn_del"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Del"
      android:layout_alignParentRight="true" />

  <EditText android:id="@+id/txt_display"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_toLeftOf="@id/btn_del"
android:layout_alignBaseline="@id/btn_del" />


</RelativeLayout>


<LinearLayout
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_gravity="center"
   android:orientation="horizontal" >
```

```
        <Button
          android:id="@+id/btn_one"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="1" />

        <Button
          android:id="@+id/btn_two"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="2" />

        <Button
          android:id="@+id/btn_three"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="3" />
      </LinearLayout>

  <LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:orientation="horizontal" >

        <Button
          android:id="@+id/btn_four"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="4" />

        <Button
          android:id="@+id/btn_five"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="5" />

  <Button
    android:id="@+id/btn_six"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
```

```
android:text="6" />
</LinearLayout>

<LinearLayout
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_gravity="center"
   android:orientation="horizontal" >

        <Button
          android:id="@+id/btn_seven"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="7" />

        <Button
          android:id="@+id/btn_eight"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="8" />

        <Button
          android:id="@+id/btn_nine"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="9" />
     </LinearLayout>

<LinearLayout
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_gravity="center"
   android:orientation="horizontal" >

        <Button
          android:id="@+id/btn_star"
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="*" />

        <Button
          android:id="@+id/btn_zero"
          android:layout_width="wrap_content"
```

```
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="0" />

         <Button
            android:id="@+id/btn_ash"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:text="#" />
      </LinearLayout>

      <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content
        "android:gravity="center"
        android:orientation="horizontal" >
<Button
   android:id="@+id/btn_call"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:gravity="center"
   android:text="call" />

   <Button
      android:id="@+id/btn_save"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="save" />

      </LinearLayout>

   </LinearLayout>
```

MainActivity.java

```
   package com.example.p8;

import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
```

```
import android.widget.Button;
import
android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener {

        EditText txtNumber;

        Button
btnOne,btnTwo,btnThree,btnFour,btnFive,btnSix,btnSeven,btnEight,btnNine,btnZero,btnCall,
btnSave,btnDel,btnStar,btnHash;

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

      txtNumber=(EditText)findViewById(R.id.txt_display);

      btnOne=(Button)findViewById(R.id.btn_one);
      btnOne.setOnClickListener(this);

      btnTwo=(Button)findViewById(R.id.btn_two);
      btnTwo.setOnClickListener(this);

      btnThree=(Button)findViewById(R.id.btn_three);
      btnThree.setOnClickListener(this);

      btnFour=(Button)findViewById(R.id.btn_four);
      btnFour.setOnClickListener(this);

      btnFive=(Button)findViewById(R.id.btn_five);
      btnFive.setOnClickListener(this);


      btnSix=(Button)findViewById(R.id.btn_six);
      btnSix.setOnClickListener(this);

      btnSeven=(Button)findViewById(R.id.btn_seven);
      btnSeven.setOnClickListener(this);

      btnEight=(Button)findViewById(R.id.btn_eight);
      btnEight.setOnClickListener(this);

      btnNine=(Button)findViewById(R.id.btn_nine);
      btnNine.setOnClickListener(this);
```

```
    btnZero=(Button)findViewById(R.id.btn_zero);
    btnZero.setOnClickListener(this);

    btnSave=(Button)findViewById(R.id.btn_save);
    btnSave.setOnClickListener(this);

    btnCall=(Button)findViewById(R.id.btn_call);
    btnCall.setOnClickListener(this);

    btnStar=(Button)findViewById(R.id.btn_star);
    btnStar.setOnClickListener(this);

    btnHash=(Button)findViewById(R.id.btn_ash);
    btnHash.setOnClickListener(this);

    btnDel=(Button)findViewById(R.id.btn_del);
    btnDel.setOnClickListener(this);


}


@Override
public boolean onCreateOptionsMenu(Menu menu) {
    // Inflate the menu; this adds items to the action bar if it is present.
    getMenuInflater().inflate(R.menu.main, menu);
    return true;
}


        @Override
        public void onClick(View v) {
                // TODO Auto-generated method stub

                if(v.equals(btnOne))
                {
                        txtNumber.append("1");
                }
                else if(v.equals(btnTwo))
                {
                        txtNumber.append("2");
                }
                else if(v.equals(btnThree))
                {
                        txtNumber.append("3");
                }
```

```
else if(v.equals(btnFour))
{
        txtNumber.append("4");
}
else if(v.equals(btnFive))
{
        txtNumber.append("5");
}
else if(v.equals(btnSix))
{
        txtNumber.append("6");
}
else if(v.equals(btnSeven))
{
        txtNumber.append("7");
}
else if(v.equals(btnEight))
{
        txtNumber.append("8");
}
else if(v.equals(btnNine))
{
        txtNumber.append("9");
}
else if(v.equals(btnZero))
{
        txtNumber.append("0");
}
else if(v.equals(btnStar))
{
        txtNumber.append("*");
}
else if(v.equals(btnHash))
{
        txtNumber.append("#");
}
else if(v.equals(btnDel))
{
        String
        num=txtNumber.getText().toString();
        if(num.length()>0)
        {
        num=num.substring(0,num.length()-1);
        }
        txtNumber.setText(num);
}
else if(v.equals(btnCall))
{
```

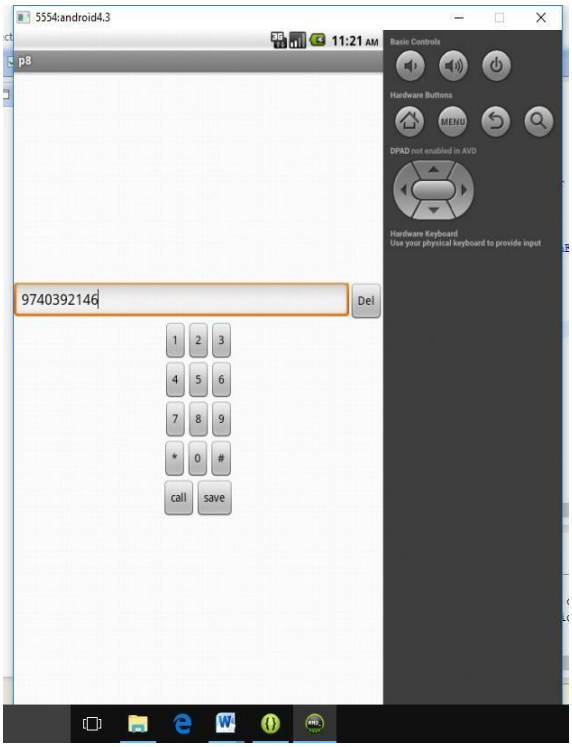
```
                String num=txtNumber.getText().toString();
                Intent it=new Intent(Intent.ACTION_CALL);
                it.setData(Uri.parse("tel:"+num));
                startActivity(it);
            }
            else if(v.equals(btnSave))
            {
                String  num=txtNumber.getText().toString(); Intent
                intent = new Intent(Intent.ACTION_INSERT,
  ContactsContract.Contacts.CONTENT_URI);
                intent.putExtra(ContactsContract.Intents.Insert.PHONE,num);
                startActivity(intent);

            }

        }

    }
```

Manifest.xml

```
    <?xml version="1.0" encoding="utf-8"?>
    <manifest xmlns:android="http://schemas.android.com/apk/res/android"
      package="com.example.p8"
      android:versionCode="1"
      android:versionName="1.0"
<uses-sdk android:minSdkVersion="8"
    android:targetSdkVersion="18" />
      <uses-permission  android:name="android.permission.CALL_PHONE"/>

      <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name" android:theme="@style/AppTheme" >
        <activity
          android:name="com.example.p8.MainActivity"
          android:label="@string/app_name" >
          <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
          </activity>
        </application>

    </manifest>
```

called **Darcula**. Choose as required. the **IntelliJ** theme whereas the dark theme is ıe or

OUTPUT:



called **Darcula**. Choose as required. the **IntelliJ** theme whereas the dark theme is ıe or

Program -10

Create a file of JSON type with values for city_name, Latitude, Longitude, Temperature and Humidity. Develop an application to create an activity with button to parse the JSON file which when clicked should display the data in the textview.

---

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="Parsing JSON File"
        android:textColor="@android:color/holo_red_dark"
        android:textStyle="bold" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="PARSE JSON FILE"
        android:layout_gravity="center"
        android:id="@+id/btn_parsejson" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="Display Results"
        android:id="@+id/txt_resultdisplay"/>

</LinearLayout>
```

called **Darcula**. Choose as required. the **IntelliJ** theme whereas the dark theme is ıe or

MainActivity.java

```
package com.example.labmanualjsonparse;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

import org.json.JSONArray;
import org.json.JSONObject;
import org.w3c.dom.Document;
import org.w3c.dom.Element;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;

import java.io.InputStream;

import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;

public class MainActivity extends AppCompatActivity {

    Button btnjson;
    TextView txtdisplayresults;

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

        btnjson = findViewById(R.id.btn_parsejson);
        txtdisplayresults = findViewById(R.id.txt_resultdisplay);


        btnjson.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try{
                    InputStream is = getAssets().open("samplecity.json");
                    int size = is.available();
                    byte[] buffer = new byte[size];
                    is.read(buffer);
                    is.close();

                    String json = new String(buffer, "UTF-8");
```

called **Darcula**. Choose as required. the **IntelliJ** theme whereas the dark theme is ıe or

```
                JSONArray jsonArray = new JSONArray(json);

                txtdisplayresults.setText(" ");
                for(int i = 0;i<jsonArray.length();i++)
                {
                    JSONObject obj =jsonArray.getJSONObject(i);
  txtdisplayresults.setText(txtdisplayresults.getText() + "\n Name: " + obj.getString("name")+ "\n");
  txtdisplayresults.setText(txtdisplayresults.getText() +  " Latitude: " + obj.getString("lat")+ "\n");
                    txtdisplayresults.setText(txtdisplayresults.getText() + " Longitude: " +
obj.getString("long")+ "\n");
                    txtdisplayresults.setText(txtdisplayresults.getText() + " Temperature: " +
obj.getString("temperature")+ "\n");
                    txtdisplayresults.setText(txtdisplayresults.getText() + " Humidity: " +
obj.getString("humidity")+ "\n");
                    txtdisplayresults.setText(txtdisplayresults.getText() + "---------------------------- ");
                }
            }
            catch (Exception e)
            {
                e.printStackTrace();
            }
        }
      });
   }

}
```

samplecity.json

```
[
 { "name": "Mysore ",
   "lat": "12.295 ",
   "long": "76.639 ",
   "temperature":"22 ",
   "humidity": "92 %"
 },
 { "name": "Bangalore",
   "lat": "12.97165 ",
   "long": "77.5946 ",
   "temperature":"25 ",
   "humidity": "74 %"
 }
]
```

called **Darcula**. Choose as required. the **IntelliJ** theme whereas the dark theme is ıe or

OUTPUT: