1. **Display Text Message**

Java:

package com.example.learningapp;  
  
import android.graphics.Color;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.TextView;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
// R.id.hello  
 }  
 public void changecolor(View v){  
 TextView t = (TextView) findViewById(R.id.hello);  
 t.setTextColor(Color.GREEN);  
 }  
 public void changesize(View v){  
 TextView t = (TextView) findViewById(R.id.hello);  
 float font = t.getTextSize();  
 t.setTextSize(font+=0.5);  
 }  
  
}

XML:

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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:id="@+id/hello"  
 android:layout\_width="274dp"  
 android:layout\_height="129dp"  
 android:text="Hello World!"  
 app:autoSizeMaxTextSize="10dp"  
 app:autoSizeMinTextSize="4dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.16" />  
  
 <Button  
 android:id="@+id/button1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="changecolor"  
 android:text="Change Font Color"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.676" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="changesize"  
 android:text="Change Font Size"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.426"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.525" />  
  
</android.support.constraint.ConstraintLayout>

1. **Draw shapes:**
2. import 'package:flutter/material.dart';  
     
     
   void main() {  
    runApp(const MyApp());  
   }  
   class MyBookings extends StatelessWidget {  
    @override  
    Widget build(BuildContext context) {  
    return Scaffold(  
    appBar: AppBar(  
    title: Text('Custom paint Demo'),  
    ),  
    body: Container(  
    child: Center(  
    child: CustomPaint(  
    size: Size(300, 200),  
    painter: LinePainter(),  
    ),  
    ),  
    ),  
    );  
    }  
   }  
     
     
   class LinePainter extends CustomPainter {  
    @override  
    void paint(Canvas canvas, Size size) {  
    var paint = Paint()  
    ..color = Colors.*deepPurple* ..strokeWidth = 25;  
    var paint2 = Paint()  
    ..color = Colors.*white* ..strokeWidth = 15;  
    var paint3 = Paint()  
    ..color = Colors.*black* ..strokeWidth = 15;  
    Offset start = Offset(0, size.height / 2);  
    Offset end = Offset(size.width, size.height / 2);  
    canvas.drawCircle(Offset(160, 10), 80, paint3);  
    canvas.drawCircle(Offset(160, 190), 80, paint3);  
    canvas.drawCircle(Offset(130, 10), 10, paint2);  
    canvas.drawCircle(Offset(190, 10), 10, paint2);  
    canvas.drawLine(start, end, paint);  
    }  
     
    @override  
    bool shouldRepaint(CustomPainter oldDelegate) {  
    return false;  
    }  
   }  
     
     
   class MyApp extends StatelessWidget {  
    const MyApp({super.key});  
    @override  
    Widget build(BuildContext context) {  
    return MaterialApp(  
    home: MyBookings(),  
    );  
    }  
   }
3. **List user details:**

MainAcitvity.java:

package com.example.alertapp;

import android.content.DialogInterface;

import android.os.Bundle;

import androidx.appcompat.app.AlertDialog;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

}

// Declare the onBackPressed method when the back button is pressed this method will call

@Override

public void onBackPressed() {

// Create the object of AlertDialog Builder class

AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);

// Set the message show for the Alert time

builder.setMessage("Do you want to exit ?");

// Set Alert Title

builder.setTitle("Alert !");

// Set Cancelable false for when the user clicks on the outside the Dialog Box then it will remain show

builder.setCancelable(false);

// Set the positive button with yes name Lambda OnClickListener method is use of DialogInterface interface.

builder.setPositiveButton("Yes", (DialogInterface.OnClickListener) (dialog, which) -> {

// When the user click yes button then app close

finish();

});

// Set the Negative button with No name Lambda OnClickListener method is use of DialogInterface interface.

builder.setNegativeButton("No", (DialogInterface.OnClickListener) (dialog, which) -> {

// If user click no then dialog box is canceled.

dialog.cancel();

});

// Create the Alert dialog

AlertDialog alertDialog = builder.create();

// Show the Alert Dialog box

alertDialog.show();

}}

Activity\_main.xml:

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

<RelativeLayout 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">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="180dp"

android:gravity="center\_horizontal"

android:text="Press The Back Button of Your Phone."

android:textSize="30dp"

android:textStyle="bold" />

</RelativeLayout>

Java:

package com.example.learningapp3;  
  
import android.content.Intent;  
import android.content.res.Resources;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 setTitle("Home");  
 }  
 public void launchsettings(View v){  
 Intent i = new Intent(this,SettingsActivity.class);  
 String valz = ((EditText)findViewById(R.id.*editTextTextPersonName*)).getText().toString();  
 i.putExtra("idz",valz);  
 startActivity(i);  
 }  
}

Settingsactivity:

package com.example.learningapp3;  
  
import android.content.Intent;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.widget.TextView;  
  
public class SettingsActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_settings*);  
 Intent i = getIntent();  
 String strz = i.getStringExtra("idz");  
 ((TextView)findViewById(R.id.*textView2*)).setText(strz);  
  
 }  
}

XML:

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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">  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="launchsettings"  
 android:text="SETTINGS"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.529"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextTextPersonName"  
 app:layout\_constraintVertical\_bias="0.367" />  
  
 <EditText  
 android:id="@+id/editTextTextPersonName"  
 android:layout\_width="321dp"  
 android:layout\_height="76dp"  
 android:layout\_marginTop="188dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="Name"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</android.support.constraint.ConstraintLayout>

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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=".SettingsActivity">  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="TextView"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</android.support.constraint.ConstraintLayout>

1. **Create simple database**

Java:

package com.example.ex4databaseapplication;  
  
import android.database.Cursor;  
import android.support.v7.app.AlertDialog;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
 DatabaseHelper mydb;  
 EditText editTextName, editTextSurname, editTextMarks;  
 Button buttonAdd, buttonView;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 editTextName = (EditText) findViewById(R.id.*editTextName*);  
 editTextSurname = (EditText) findViewById(R.id.*editTextSurname*);  
 editTextMarks = (EditText) findViewById(R.id.*editTextMarks*);  
 buttonAdd= (Button) findViewById(R.id.buttonAdd);  
 buttonView = (Button) findViewById(R.id.buttonView);  
  
 }  
  
 public void addData(View view){  
 mydb = new DatabaseHelper(this);  
 boolean isAdded = mydb.insertData(editTextName.getText().toString(),editTextSurname.getText().toString(),editTextMarks.getText().toString());  
 if (isAdded==true){  
 Toast.makeText(this,"Inserted",Toast.LENGTH\_LONG).show();  
 }  
 else{  
 Toast.makeText(this,"No",Toast.LENGTH\_LONG).show();  
 }  
 }  
 public void viewData(View view){  
 Cursor res = mydb.getAllData();  
 if(res.getCount()==0){  
 showMessage("Err", "No data");  
 return;  
 }  
 else{  
 StringBuffer buffer = new StringBuffer();  
 while (res.moveToNext()){  
 buffer.append("ID: "+ res.getString(0)+"\n");  
 buffer.append("NAME: "+ res.getString(1)+"\n");  
 buffer.append("SURNAME: "+ res.getString(2)+"\n");  
 buffer.append("MARKS: "+ res.getString(3)+"\n\n");  
  
  
 }  
 showMessage("data", buffer.toString());  
 }  
 }  
 public void showMessage(String title, String message){  
 AlertDialog.Builder builder = new AlertDialog.Builder(this);  
 builder.setCancelable(true);  
 builder.setTitle(title);  
 builder.setMessage(message);  
 builder.show();  
 }  
}

Helper:

package com.example.ex4databaseapplication;  
  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
import android.support.annotation.Nullable;  
  
public class DatabaseHelper extends SQLiteOpenHelper {  
 public static final String DATABASE\_NAME = "Student.db";  
 public static final String TABLE\_NAME = "student\_table";  
 public static final String COL\_1 = "ID";  
 public static final String COL\_2 = "NAME";  
 public static final String COL\_3 = "SURNAME";  
 public static final String COL\_4 = "MARKS";  
  
  
 public DatabaseHelper(@Nullable Context context) {  
 super(context, DATABASE\_NAME, null, 1);  
 }  
  
 @Override  
 public void onCreate(SQLiteDatabase sqLiteDatabase) {  
 sqLiteDatabase.execSQL("CREATE TABLE " + TABLE\_NAME+  
 "(ID INTEGER PRIMARY KEY AUTOINCREMENT, NAME TEXT, SURNAME TEXT, MARKS INTEGER)");  
 }  
  
 @Override  
 public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {  
 sqLiteDatabase.execSQL("DROP TABLE IF EXISTS " + TABLE\_NAME);  
 onCreate(sqLiteDatabase);  
 }  
 public boolean insertData(String name, String surname, String marks){  
 SQLiteDatabase db = this.getWritableDatabase();  
 ContentValues contentValues = new ContentValues();  
 contentValues.put(*COL\_2*, name);  
 contentValues.put(*COL\_3*, surname);  
 contentValues.put(*COL\_4*, marks);  
 long result = db.insert(*TABLE\_NAME*,null,contentValues);  
 if (result==-1){  
 return false;  
 }  
 return true;  
 }  
 public Cursor getAllData(){  
 SQLiteDatabase db = this.getWritableDatabase();  
 Cursor res = db.rawQuery("SELECT \* from "+ TABLE\_NAME,null);  
 return res;  
 }  
}

XML:

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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">  
  
 <EditText  
 android:id="@+id/editTextName"  
 android:layout\_width="213dp"  
 android:layout\_height="77dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="Name"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.393"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.266" />  
  
 <EditText  
 android:id="@+id/editTextSurname"  
 android:layout\_width="213dp"  
 android:layout\_height="72dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="sname"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.393"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.424" />  
  
 <EditText  
 android:id="@+id/editTextMarks"  
 android:layout\_width="213dp"  
 android:layout\_height="72dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="mark"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.449"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.553" />  
  
 <Button  
 android:id="@+id/buttonAdd"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="addData"  
 android:text="ADD"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.628"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.655" />  
  
 <Button  
 android:id="@+id/buttonView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="viewData"  
 android:text="VIEW ALL"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.275"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.667" />  
  
</android.support.constraint.ConstraintLayout>

1. **Develop calculator**

Java:

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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">  
  
 <EditText  
 android:id="@+id/one"  
 android:layout\_width="193dp"  
 android:layout\_height="92dp"  
 android:ems="10"  
 android:inputType="numberDecimal"  
 android:textSize="34sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.143" />  
  
 <EditText  
 android:id="@+id/two"  
 android:layout\_width="193dp"  
 android:layout\_height="92dp"  
 android:ems="10"  
 android:inputType="number|numberDecimal"  
 android:textSize="34sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.573"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.336" />  
  
 <Button  
 android:id="@+id/add"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:onClick="addition"  
 android:text="ADD"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.16"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.499" />  
  
 <Button  
 android:id="@+id/sub"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:layout\_marginBottom="8dp"  
 android:onClick="subtract"  
 android:text="SUBTRACT"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.514"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/two"  
 app:layout\_constraintVertical\_bias="0.087" />  
  
 <Button  
 android:id="@+id/mul"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:layout\_marginBottom="8dp"  
 android:onClick="multiply"  
 android:text="MULTIPLY"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.857"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/two"  
 app:layout\_constraintVertical\_bias="0.087" />  
  
 <Button  
 android:id="@+id/div"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="8dp"  
 android:layout\_marginBottom="8dp"  
 android:onClick="division"  
 android:text="DIVISION"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.479"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/two"  
 app:layout\_constraintVertical\_bias="0.341" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="161dp"  
 android:layout\_height="76dp"  
 android:layout\_marginTop="8dp"  
 android:layout\_marginBottom="8dp"  
 android:text="RESULT"  
 android:textSize="34sp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/div"  
 app:layout\_constraintVertical\_bias="0.273" />  
</android.support.constraint.ConstraintLayout>

XML:

package com.example.calculatorapp;  
  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.TextView;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
  
 public void addition(View view){  
 float res = 0;  
 float x = Float.*parseFloat*(((EditText)findViewById(R.id.*one*)).getText().toString());  
 float y = Float.*parseFloat*(((EditText)findViewById(R.id.*two*)).getText().toString());  
 res = x + y;  
 ((TextView)findViewById(R.id.*textView*)).setText( x + "+"+ y +"="+ res);  
  
 }  
 public void subtract(View view){  
 float res = 0;  
 float x = Float.*parseFloat*(((EditText)findViewById(R.id.*one*)).getText().toString());  
 float y = Float.*parseFloat*(((EditText)findViewById(R.id.*two*)).getText().toString());  
 res = x - y;  
 ((TextView)findViewById(R.id.*textView*)).setText( x + "-"+ y +"="+ res);  
  
 }  
 public void multiply(View view){  
 float res = 0;  
 float x = Float.*parseFloat*(((EditText)findViewById(R.id.*one*)).getText().toString());  
 float y = Float.*parseFloat*(((EditText)findViewById(R.id.*two*)).getText().toString());  
 res = x \* y;  
 ((TextView)findViewById(R.id.*textView*)).setText( x + "\*"+ y +"="+ res);  
  
 }  
 public void division(View view){  
 float res = 0;  
 float x = Float.*parseFloat*(((EditText)findViewById(R.id.*one*)).getText().toString());  
 float y = Float.*parseFloat*(((EditText)findViewById(R.id.*two*)).getText().toString());  
 res = x / y;  
 ((TextView)findViewById(R.id.*textView*)).setText( x + "/"+ y +"="+ res);  
  
 }  
}

1. **RSS:**

**Java:**

package com.example.rssapplication;  
import android.app.ListActivity;  
import android.content.Intent;  
import android.net.Uri;  
import android.os.AsyncTask;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.ArrayAdapter;  
import android.widget.ListView;  
  
import org.xmlpull.v1.XmlPullParser;  
import org.xmlpull.v1.XmlPullParserException;  
import org.xmlpull.v1.XmlPullParserFactory;  
  
import java.io.IOException;  
import java.io.InputStream;  
import java.net.MalformedURLException;  
import java.net.URL;  
import java.util.ArrayList;  
import java.util.List;  
  
public class MainActivity extends ListActivity  
{  
 List links;  
 List headlines;  
 @Override  
 protected void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 new myAsyncTask().execute();  
 }  
 class myAsyncTask extends AsyncTask<Object,Void, ArrayAdapter>  
 {  
 @Override  
 protected void onPostExecute(ArrayAdapter arrayAdapter) {  
 arrayAdapter = new ArrayAdapter(MainActivity.this,  
 android.R.layout.*simple\_list\_item\_1*, headlines);  
 setListAdapter(arrayAdapter);  
  
 }  
  
 @Override  
 protected ArrayAdapter doInBackground(Object[] params) {  
 try {  
 URL url = new URL("https://timesofindia.indiatimes.com/rssfeedmostrecent.cms");  
 links = new ArrayList();  
 headlines = new ArrayList();  
 XmlPullParserFactory factory = XmlPullParserFactory.*newInstance*();  
 factory.setNamespaceAware(false);  
 XmlPullParser xpp = factory.newPullParser();  
 xpp.setInput(getInputstream(url),"UTF-8");  
 int eventType = xpp.getEventType();  
 boolean isinsideitem = false;  
 while(eventType!=XmlPullParser.*END\_DOCUMENT*){  
 if (eventType == XmlPullParser.*START\_TAG*){  
 if(xpp.getName().equalsIgnoreCase("item")){  
 isinsideitem = true;  
 }  
 else if(xpp.getName().equalsIgnoreCase("title")){  
 if (isinsideitem){  
 headlines.add(xpp.nextText());  
 }  
 }  
 else if(xpp.getName().equalsIgnoreCase("link")){  
 if (isinsideitem){  
 links.add(xpp.nextText());  
 }  
 }  
 }  
 else if (eventType == XmlPullParser.*END\_TAG* && xpp.getName().equalsIgnoreCase("item")){  
 isinsideitem = false;  
 }  
 eventType = xpp.next();  
 }  
  
 } catch (MalformedURLException e) {  
 e.printStackTrace();  
 } catch (XmlPullParserException e) {  
 e.printStackTrace();  
 } catch (IOException e) {  
 e.printStackTrace();  
 }  
 return null;  
 }  
 }  
  
 private InputStream getInputstream(URL url) throws IOException {  
 return url.openConnection().getInputStream();  
 }  
  
}

**Xml:**

<?xml version="1.0" encoding="utf-8"?>  
<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"  
 tools:context=".MainActivity"  
 >  
  
 <ListView  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent" />  
</LinearLayout>

**Mani:**

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

1. **Multithreading:**

MainAcivity.java:

package com.example.threadapplication;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.ImageView;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity  
{  
 ImageView img;  
 Button bt1,bt2;  
 @Override  
 protected void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 bt1 = (Button)findViewById(R.id.*button*);  
 bt2= (Button) findViewById(R.id.*button2*);  
 img = (ImageView)findViewById(R.id.*imageView*);  
 bt1.setOnClickListener(new View.OnClickListener()  
 {  
 @Override  
 public void onClick(View v)  
 {  
 new Thread(new Runnable()  
 {  
 @Override  
 public void run()  
 {  
 img.post(new Runnable()  
 {  
 @Override  
 public void run()  
 {  
 img.setImageResource(R.drawable.*foreign*);  
 }  
 });  
 }  
 }).start();  
 }  
 });  
 bt2.setOnClickListener(new View.OnClickListener()  
 {  
 @Override  
 public void onClick(View v)  
 {  
 new Thread(new Runnable()  
 {  
 @Override  
 public void run()  
 {  
 img.post(new Runnable()  
 {  
 @Override  
 public void run()  
 {  
 img.setImageResource(R.drawable.*india*);  
 }  
 });  
 }  
  
 }).start();  
 }  
 });  
 }  
}

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:backgroundTint="#FFFFFF" android:orientation="vertical">  
 <ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="250dp"  
 android:layout\_height="250dp"  
  
 android:layout\_gravity="center"  
 android:layout\_margin="50dp" />  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="168dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_margin="10dp"  
 android:backgroundTint="#F6F0B7"  
 android:text="San Francisco"  
 android:textColor="#FA0505"  
 android:textStyle="bold" />  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="168dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_gravity="center"  
 android:layout\_margin="10dp"  
 android:backgroundTint="#F6F0B7"  
 android:text="Los Angeles"  
 android:textColor="#FA0505"  
 android:textStyle="bold" />  
</LinearLayout>

1. **GPS:**

**CODE:**

**AndroidManifest.xml:**

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

**<manifest xmlns:android="http://schemas.android.com/apk/res/android"**

**package="com.example.gps">**

**<uses-permission android:name="android.permission.ACCESS\_COARSE\_LOCATION" />**

**<uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION" />**

**<application**

**android:allowBackup="true"**

**android:icon="@mipmap/ic\_launcher"**

**android:label="@string/app\_name"**

**android:roundIcon="@mipmap/ic\_launcher\_round"**

**android:supportsRtl="true"**

**android:theme="@style/Theme.Gps">**

**<activity**

**android:name=".MainActivity"**

**android:exported="true">**

**<intent-filter>**

**<action android:name="android.intent.action.MAIN" />**

**<category android:name="android.intent.category.LAUNCHER" />**

**</intent-filter>**

**</activity>**

**</application>**

**</manifest>**

**MainAcitvity.java:**

**package com.example.gps;**

**import androidx.annotation.NonNull;**

**import androidx.appcompat.app.AppCompatActivity;**

**import androidx.core.app.ActivityCompat;**

**import android.Manifest;**

**import android.annotation.SuppressLint;**

**import android.location.Location;**

**import android.location.LocationListener;**

**import android.location.LocationManager;**

**import android.os.Bundle;**

**import android.widget.Button;**

**import android.widget.TextView;**

**public class MainActivity extends AppCompatActivity {**

**TextView lat;**

**TextView lon;**

**Button click;**

**LocationManager locMg;**

**LocationListener lis;**

**@SuppressLint("MissingPermission")**

**@Override**

**protected void onCreate(Bundle savedInstanceState) {**

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**lat = (TextView) findViewById(R.id.lat);**

**lon = (TextView) findViewById(R.id.lon);**

**click = (Button) findViewById(R.id.gps);**

**locMg = (LocationManager) getSystemService(LOCATION\_SERVICE);**

**lis = new LocationListener() {**

**@Override**

**public void onLocationChanged(@NonNull Location location) {**

**lat.setText(""+location.getLatitude());**

**lon.setText(""+location.getLongitude());**

**}**

**};**

**ActivityCompat.requestPermissions(this,new String[]{Manifest.permission.ACCESS\_FINE\_LOCATION}, 1);**

**click.setOnClickListener(view -> {**

**locMg.requestLocationUpdates("gps", 5000, 0, lis);**

**}); }}**

**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:id="@+id/textView"**

**android:layout\_width="98dp"**

**android:layout\_height="40dp"**

**android:textColor="#090808"**

**android:textSize="24sp"**

**android:textStyle="bold"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toTopOf="parent" />**

**<TextView**

**android:id="@+id/textView3"**

**android:layout\_width="99dp"**

**android:layout\_height="38dp"**

**android:layout\_marginStart="26dp"**

**android:layout\_marginLeft="26dp"**

**android:layout\_marginTop="46dp"**

**android:layout\_marginEnd="286dp"**

**android:layout\_marginRight="286dp"**

**android:text="longitude"**

**android:textColor="#090808"**

**android:textSize="20sp"**

**android:textStyle="bold"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/textView" />**

**<TextView**

**android:id="@+id/lon"**

**android:layout\_width="251dp"**

**android:layout\_height="42dp"**

**android:layout\_marginStart="28dp"**

**android:layout\_marginLeft="28dp"**

**android:layout\_marginTop="42dp"**

**android:layout\_marginEnd="6dp"**

**android:layout\_marginRight="6dp"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toEndOf="@+id/textView3"**

**app:layout\_constraintTop\_toBottomOf="@+id/lat" />**

**<Button**

**android:id="@+id/gps"**

**android:layout\_width="177dp"**

**android:layout\_height="56dp"**

**android:layout\_marginStart="119dp"**

**android:layout\_marginLeft="119dp"**

**android:layout\_marginTop="71dp"**

**android:layout\_marginEnd="115dp"**

**android:layout\_marginRight="115dp"**

**android:text="GET LOCATION"**

**app:layout\_constraintEnd\_toEndOf="parent"**

**app:layout\_constraintStart\_toStartOf="parent"**

**app:layout\_constraintTop\_toBottomOf="@+id/textView3" />**

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

1. **SD card:**

Manifest:

<uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE"/>  
<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE"/>

Java:

package com.example.applicationsdcard;  
  
import android.os.Bundle;  
import android.os.Environment;  
import android.support.v7.app.AppCompatActivity;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
import java.io.BufferedReader;  
import java.io.File;  
import java.io.FileNotFoundException;  
import java.io.FileOutputStream;  
import java.io.FileReader;  
import java.io.IOException;  
  
public class MainActivity extends AppCompatActivity {  
  
 Button read,write;  
 TextView ReadBox;  
 EditText WriteBox;  
 String fileName,filePath,fileContents;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
 read = findViewById(R.id.read);  
 ReadBox = findViewById(R.id.ReadBox);  
 WriteBox = findViewById(R.id.WriteBox);  
  
 fileName = "myFile.txt";  
 filePath = "FileDir";  
 if (!isExternalStorageAvailableRW()) {  
 write.setEnabled(false);  
 }  
 }  
 private boolean isExternalStorageAvailableRW() {  
 String ExternalStorageState = Environment.getExternalStorageState();  
 if(ExternalStorageState.equals(Environment.MEDIA\_MOUNTED)){  
 return true;  
 }  
 return false;  
 }  
 public void onWrite(View view) throws IOException {  
 write = findViewById(R.id.write);  
 ReadBox.setText("");  
 fileContents = WriteBox.getText().toString().trim();  
 if (!fileContents.equals("")) {  
 //Get external files dir  
 File myExtFile = new File(getExternalFilesDir(filePath), fileName);  
 FileOutputStream fos = new FileOutputStream(myExtFile);  
 fos.write(fileContents.getBytes());  
 } else {  
 Toast.makeText(MainActivity.this, "Input Field Empty", Toast.LENGTH\_SHORT).show();  
 }  
 }  
 public void onRead(View view) {  
 FileReader fr;  
 File myExtFile = new File(getExternalFilesDir(filePath),fileName);  
 StringBuilder sb = new StringBuilder();  
 String contents = "";  
 try {  
 fr = new FileReader(myExtFile);  
 BufferedReader br = new BufferedReader(fr);  
 String line = br.readLine();  
 while(line!=null){  
 contents += line;  
 line = br.readLine();  
 }  
 ReadBox.setText(contents);  
 } catch (IOException e) {  
 e.printStackTrace();  
 }  
 }  
}

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"  
 tools:context=".MainActivity"  
 android:gravity="center"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Type the text here to save on SD Card"  
 android:id="@+id/WriteBox"  
 />  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 android:gravity="center"  
 >  
  
 </LinearLayout>  
 <ScrollView  
 android:layout\_width="match\_parent"  
 android:layout\_height="80dp"  
 >  
  
 <TextView  
 android:id="@+id/ReadBox"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text=""  
 android:textSize="34sp" />  
  
 </ScrollView>  
  
 <Button  
 android:id="@+id/read"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:onClick="onRead"  
 android:text="READ" />  
  
 <Button  
 android:id="@+id/write"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:onClick="onWrite"  
 android:text="WRITE" />  
  
</LinearLayout>

1. **Alarm clock**

Java:

package com.example.alarmapplication;  
  
import android.media.Ringtone;  
import android.media.RingtoneManager;  
import android.os.Bundle;  
import android.support.v7.app.AppCompatActivity;  
import android.widget.EditText;  
import android.widget.ImageView;  
import android.widget.TextClock;  
import android.widget.TimePicker;  
import android.widget.Toast;  
  
import java.util.Timer;  
import java.util.TimerTask;  
public class MainActivity extends AppCompatActivity {  
 TimePicker tp;  
 TextClock tc;  
 EditText et;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
 et=findViewById(R.id.id1);  
 tp=findViewById(R.id.tp);  
 tc=findViewById(R.id.tc);  
 final Ringtone r = RingtoneManager.getRingtone(getApplicationContext(),  
 RingtoneManager.getDefaultUri(RingtoneManager.TYPE\_RINGTONE));  
 Timer t= new Timer();  
 t.scheduleAtFixedRate(new TimerTask() {  
 @Override  
 public void run() {  
 if(tc.getText().toString().equals(AlarmTime())){  
 r.play();  
 }  
 else{  
 r.stop();  
 }  
 }  
 },0,1000);  
 }  
 public String AlarmTime(){  
 Integer hours=tp.getCurrentHour();  
 Integer minutes=tp.getCurrentMinute();  
 String mins;  
 if(minutes<10){  
 mins="0";  
 mins=mins+minutes;  
 }  
 else{  
 mins=minutes.toString();  
 }  
 String atime;  
 if(hours>12){  
 hours=hours-12;  
 atime= hours+":"+mins+" PM";  
 }  
 else{  
 atime=hours+":"+mins+" AM";  
 }  
 return atime;  
 }  
}

xml:

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.ConstraintLayout xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto">  
  
 <TextClock  
 android:id="@+id/tc"  
 android:layout\_width="150dp"  
 android:layout\_height="92dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.436"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.708"></TextClock>  
  
 <TimePicker  
 android:id="@+id/tp"  
 android:layout\_width="229dp"  
 android:layout\_height="408dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.049"></TimePicker>  
  
 <EditText  
 android:id="@+id/id1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:minHeight="48dp"  
 android:text="Name"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.877"  
 app:layout\_editor\_absoluteX="70dp"  
 app:layout\_editor\_absoluteY="647dp" />  
</android.support.constraint.ConstraintLayout>

1. **Game:**