

## 1B) DEVELOP AN APPLICATION TO DISPLAY "HELLO WORLD".

### 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"
    android:background="#E8E8ED"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:background="#9C27B0"
        android:fontFamily="cursive"
        android:foregroundTint="#8BC34A"
        android:text="Hello World!"
        android:textColor="#FFFFFF"
        android:textColorHighlight="#8BC34A"
        android:textSize="50sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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



## 2) WRITE AN ANDROID APPLICATION PROGRAM THAT DEMONSTRATES LINEAR LAYOUT, RELATIVE LAYOUT, TABLE LAYOUT, GRIDVIEW LAYOUT

### Linear Layout

### 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">
    <!-- Add vertical in the android:orientation-->

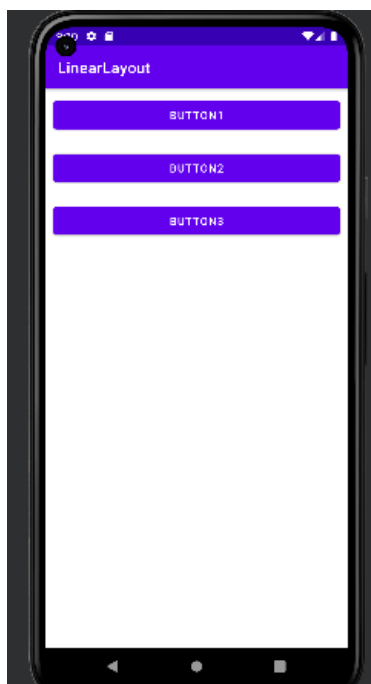
    <!-- Add Button-->
    <Button
        android:layout_width="match_parent"
        android:layout_margin="10dp"
        android:layout_height="wrap_content"
        android:text="Button1"/>

    <!-- Add Button-->
    <Button
        android:layout_width="match_parent"
        android:layout_margin="10dp"
        android:layout_height="wrap_content"
        android:text="Button2"/>

    <!-- Add Button-->
    <Button
        android:layout_width="match_parent"
        android:layout_margin="10dp"
        android:layout_height="wrap_content"
        android:text="Button3"/>

</LinearLayout>

```



**Relative Layout**

## activity\_main.xml

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

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Top Left Button"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"/>

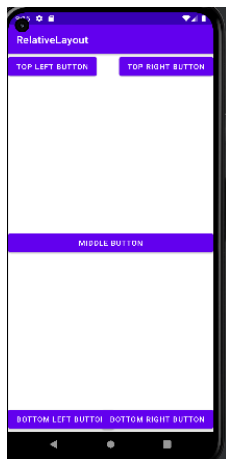
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Top Right Button"
        android:layout_alignParentTop="true"
        android:layout_alignParentRight="true"/>

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Bottom Left Button"
        android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"/>

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Bottom Right Button"
        android:layout_alignParentRight="true"
        android:layout_alignParentBottom="true"/>

    <Button
        android:id="@+id/button5"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Middle Button"
        android:layout_centerVertical="true"
        android:layout_centerHorizontal="true"/>

</RelativeLayout>
```



### Table Layout

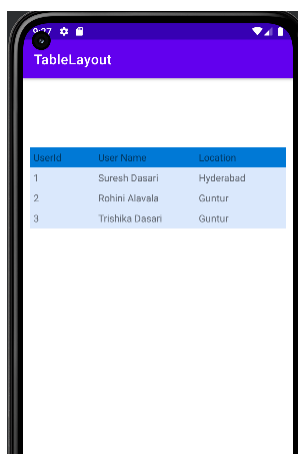
## activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="100dp"
    android:paddingLeft="10dp"
    android:paddingRight="10dp" >
    <TableRow android:background="#0079D6" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="UserId" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="User Name" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Location" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="1" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Suresh Dasari" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="1" />
    </TableRow>
</TableLayout>
```

```

        android:text="Hyderabad" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="2" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Rohini Alavala" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Guntur" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="3" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Trishika Dasari" />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Guntur" />
    </TableRow>
</TableLayout>

```



Userid	User Name	Location
1	Suresh Dasari	Hyderabad
2	Rohini Alavala	Guntur
3	Trishika Dasari	Guntur

**Grid View Layout**

**Activity\_main.xml**

```

<GridView xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/gridView1"
    android:numColumns="auto_fit"
    android:gravity="center"
    android:columnWidth="50dp"
    android:stretchMode="columnWidth"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent" >
</GridView>

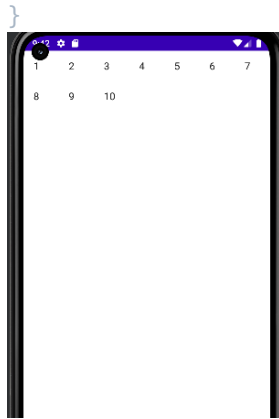
```

## MainActivity.java

```

package com.example.gridviewlayout;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.GridView;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends Activity {
    GridView gridView;
    static final String[] numbers = new String[] {
        "1", "2", "3", "4", "5",
        "6", "7", "8", "9", "10",};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        gridView = (GridView) findViewById(R.id.gridView1);
        ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
            android.R.layout.simple_list_item_1, numbers);
        gridView.setAdapter(adapter);
        gridView.setOnItemClickListener(new OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                Toast.makeText(getApplicationContext(), ((TextView)
view).getText(), Toast.LENGTH_LONG).show();
            }
        });
    }
}

```



### 3A) DEVELOP AN APPLICATION THAT USES GUI COMPONENTS

#### Activity\_main.xml

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:gravity="center"
        android:text="Hello World!"
        android:textSize="25sp"
        android:textStyle="bold" />

    <Button
        android:id="@+id/button1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:gravity="center"
        android:text="Change font size"
        android:textSize="25sp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:gravity="center"
        android:text="Change color"
        android:textSize="25sp" />

</LinearLayout>
```

#### MainActivity.java

```
package com.example.fonts;

import android.graphics.Color;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
```

```

import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {

    int ch=1;
    float font=30;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final TextView t= (TextView) findViewById(R.id.textView);
        Button b1= (Button) findViewById(R.id.button1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                t.setTextSize(font);
                font = font + 5;
                if (font == 50)
                    font = 30;
            }
        });
        Button b2= (Button) findViewById(R.id.button2);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                switch (ch) {
                    case 1:
                        t.setTextColor(Color.RED);
                        break;
                    case 2:
                        t.setTextColor(Color.GREEN);
                        break;
                    case 3:
                        t.setTextColor(Color.BLUE);
                        break;
                    case 4:
                        t.setTextColor(Color.CYAN);
                        break;
                    case 5:
                        t.setTextColor(Color.YELLOW);
                        break;
                    case 6:
                        t.setTextColor(Color.MAGENTA);
                        break;
                }
                ch++;
                if (ch == 7)
                    ch = 1;
            }
        });
    }
}

```





3B) WRITE AN ANDROID APPLICATION PROGRAM THAT CONVERTS THE TEMPERATURE IN CELSIUS TO FARENHEIT.

#### Activity-main.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"
    android:padding="16dp">
    <EditText
        android:id="@+id/edit_text_celsius"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="hint_celsius"
        android:inputType="numberDecimal" />
    <Button
        android:id="@+id/button_convert"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="button_convert" />
    <TextView
        android:id="@+id/text_view_fahrenheit"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="fahrenheit_placeholder"
        android:textAlignment="center"
        android:textSize="24sp" />
</LinearLayout>
```

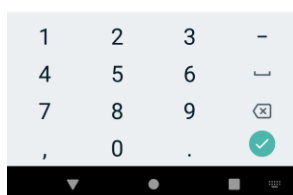
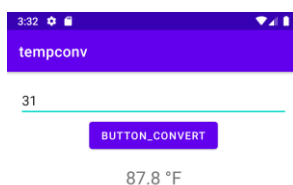
#### MainActivity.java

```
package com.example.tempconv;
```

```

import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
    private EditText editTextCelsius;
    private Button buttonConvert;
    private TextView textViewFahrenheit;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextCelsius = findViewById(R.id.edit_text_celsius);
        //editTextCelsius = findViewById(R.id.edit text celsius);
        buttonConvert = findViewById(R.id.button_convert);
        textViewFahrenheit = findViewById(R.id.text_view_fahrenheit);
        buttonConvert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String celsiusString =
editTextCelsius.getText().toString();
                if (!celsiusString.isEmpty()) {
                    double celsius = Double.parseDouble(celsiusString);
                    double fahrenheit =
convertCelsiusToFahrenheit(celsius);
                    String fahrenheitString = String.format("%.1f",
fahrenheit);
                    textViewFahrenheit.setText(fahrenheitString + " °F");
                }
            }
        });
    }
    private double convertCelsiusToFahrenheit(double celsius) {
        return (celsius * 1.8) + 32;
    }
}

```



#### 4) CREATE AN APPLICATION WITH LOGIN MODULE (CHECK USERNAME AND PASSWORD) TO UNDERSTAND ACTIVITY AND INTENT

Activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <TextView
        android:id="@+id/tvName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="21dp"
        android:layout_marginTop="49dp"
        android:text="User Name"
        android:textSize="18sp" />
    <EditText
        android:id="@+id/etUsername"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvName"
        android:layout_alignBottom="@+id/tvName"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="23dp"
        android:ems="10"
        android:inputType="textPersonName" />
    <TextView
        android:id="@+id/tvPass"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignEnd="@+id/tvName"
        android:layout_below="@+id/etUsername"
        android:layout_marginTop="32dp"
        android:text="Password"
        android:textSize="18sp" />
    <EditText
        android:id="@+id/etPassword"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/tvPass"
        android:layout_alignBottom="@+id/tvPass"
        android:layout_alignStart="@+id/etUsername"
        android:ems="10"
        android:inputType="textPassword" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/etPassword"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="38dp"
        android:text="LOGIN"
    />
    <TextView
        android:id="@+id/tvLoginStatus"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/button"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="100sp">
```

```
</>  
</RelativeLayout>
```

### MainActivity.java

```
package com.example.loginmodule;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
public class MainActivity extends AppCompatActivity {  
    EditText etUsername, etPassword;  
    Button btnStatus;  
    TextView tvLoginStatus;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        etUsername = (EditText) findViewById(R.id.etUsername);  
        etPassword = (EditText) findViewById(R.id.etPassword);  
        btnStatus = (Button) findViewById(R.id.button);  
        tvLoginStatus = (TextView) findViewById(R.id.tvLoginStatus);  
        btnStatus.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View v) {  
                check();  
            }  
        });  
    }  
    public void check(){  
        if(etUsername.getText().toString().equals("tonystark") &&  
        etPassword.getText().toString().equals("loveyou3000")){  
            tvLoginStatus.setText("Login successful");  
        }else{  
            Toast.makeText(this, "Login fail", Toast.LENGTH_LONG).show();  
        }  
    }  
}
```



## 5) DESIGN SIMPLE CALCULATOR GUI APPLICATION WITH ACTIVITY AND INTENTS.

### 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"
    tools:context=".MainActivity"
    android:padding="20dp"
    android:orientation="vertical" >
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="CALCULATOR"
        android:textSize="25sp"
        android:layout_marginBottom="16dp"
        android:textColor="@android:color/black" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginBottom="20dp">

        <EditText
            android:id="@+id/first_no"
            android:layout_width="102dp"
            android:layout_height="59dp"
            android:ems="10"
            android:layout_marginHorizontal="50dp"
            android:hint="Enter" />

        <EditText
            android:id="@+id/second_no"
            android:layout_width="102dp"
            android:layout_height="59dp"
            android:ems="10"
            android:hint="Enter" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginBottom="20dp">

        <TextView
            android:textSize="35sp"
            android:id="@+id/answer"
            android:layout_width="102dp"
            android:layout_height="59dp"
            android:layout_marginHorizontal="50dp"
            android:hint="ans" />

    </LinearLayout>

    <LinearLayout
```

```

        android:orientation="vertical"
        android:layout_marginLeft="250dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="30dp">

        <Button
            android:id="@+id/sub"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="-"
            android:textSize="25sp"
            android:layout_marginBottom="16dp" />

        <Button
            android:id="@+id/add"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginBottom="16dp"
            android:text="+"
            android:textSize="25sp"
            tools:ignore="OnClick" />

        <Button
            android:id="@+id/div"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="/"
            android:textSize="25sp"
            android:layout_marginBottom="16dp" />

        <Button
            android:id="@+id/mul"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginBottom="16dp"
            android:text="X"
            android:textSize="25sp"/>

        <Button
            android:id="@+id/equals"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginBottom="16dp"
            android:text="="
            android:textSize="35sp"/>
    </LinearLayout>

</LinearLayout>

```

## MainActivity.java

```

package com.example.calc;

import androidx.appcompat.app.AppCompatActivity;

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

```

```

import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText no1 , no2;
    Button add ,mul ,div , sub,equal;
    TextView answer;
    double ans = 0;

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

        // for text views
        no1 = findViewById(R.id.first_no);
        no2 = findViewById(R.id.second_no);

        // for button with operations
        add = findViewById(R.id.add);
        mul = findViewById(R.id.mul);
        div = findViewById(R.id.div);
        sub = findViewById(R.id.sub);

        // for equal to button
        equal = findViewById(R.id.equals);

        // for answer field
        answer = findViewById(R.id.answer);

        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String num1 = no1.getText().toString();
                String num2 = no2.getText().toString();

                if (num1.isEmpty() || num2.isEmpty()) {
                    Toast.makeText(getApplicationContext(),"Enter
Numbers",Toast.LENGTH_SHORT).show();
                }
                else {
                    double a =
Double.parseDouble(no1.getText().toString());
                    double b =
Double.parseDouble(no2.getText().toString());
                    ans = a + b;
                }
            }
        });

        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String num1 = no1.getText().toString();
                String num2 = no2.getText().toString();

                if (num1.isEmpty() || num2.isEmpty()) {

```

```

        Toast.makeText(getApplicationContext(), "Enter
Numbers", Toast.LENGTH_SHORT).show();
    }
    else {
        double a =
Double.parseDouble(no1.getText().toString());
        double b =
Double.parseDouble(no2.getText().toString());
        ans = a - b;
    }
}
});

mul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString();
        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {
            Toast.makeText(getApplicationContext(), "Enter
Numbers", Toast.LENGTH_SHORT).show();
        }
        else {
            double a =
Double.parseDouble(no1.getText().toString());
            double b =
Double.parseDouble(no2.getText().toString());
            ans = a * b;
        }
    }
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String num1 = no1.getText().toString();
        String num2 = no2.getText().toString();

        if (num1.isEmpty() || num2.isEmpty()) {
            Toast.makeText(getApplicationContext(), "Enter
Numbers", Toast.LENGTH_SHORT).show();
        } else {
            double a =
Double.parseDouble(no1.getText().toString());
            double b =
Double.parseDouble(no2.getText().toString());
            if (b != 0)
                ans = a / b;
            else
                Toast.makeText(getApplicationContext(), "Enter
Valid Numbers", Toast.LENGTH_SHORT).show();
        }
    }
});

equal.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String ans1 = String.valueOf(ans);
        answer.setText(ans1);
    }
});

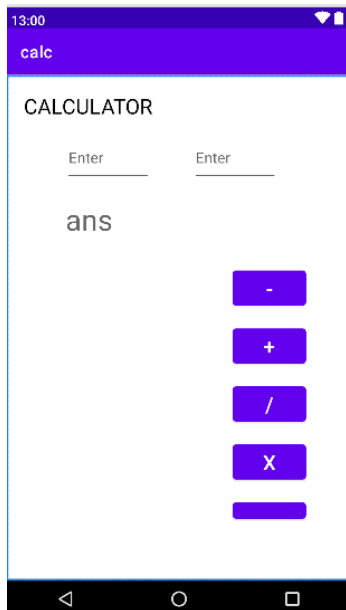
```



```

        ans= 0;
    }
    });
}
}

```



## 6) DEVELOP AN APPLICATION THAT MAKES USE OF RSS FEED

### Activity\_main.xml

```

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

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

</LinearLayout>

```

### MainActivity.java

```

package com.example.rssfeed;

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 headlines;
    List links;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        new MyAsyncTask().execute();
    }

    class MyAsyncTask extends AsyncTask<Object,Void,ArrayAdapter>
    {
        @Override
        protected ArrayAdapter doInBackground(Object[] params)
        {
            headlines = new ArrayList();
            links = new ArrayList();
            try
            {
                URL url = new URL("https://codingconnect.net/feed");
                XmlPullParserFactory factory =
                XmlPullParserFactory.newInstance();
                factory.setNamespaceAware(false);
                XmlPullParser xpp = factory.newPullParser();

                // We will get the XML from an input stream
                xpp.setInput(getInputStream(url), "UTF_8");
                boolean insideItem = false;

                // Returns the type of current event: START_TAG, END_TAG,
etc..

                int eventType = xpp.getEventType();
                while (eventType != XmlPullParser.END_DOCUMENT)
                {
                    if (eventType == XmlPullParser.START_TAG)
                    {
                        if (xpp.getName().equalsIgnoreCase("item"))
                        {
                            insideItem = true;
                        }
                        else if (xpp.getName().equalsIgnoreCase("title"))
                        {
                            if (insideItem)
                                headlines.add(xpp.nextText()); //extract
the headline
                        }
                        else if (xpp.getName().equalsIgnoreCase("link"))
                        {
                            if (insideItem)
                                links.add(xpp.nextText()); //extract the
link of article
                        }
                    }
                }
            }
            catch (MalformedURLException e)
            {
                e.printStackTrace();
            }
        }
    }
}

```

```

        else if(eventType==XmlPullParser.END_TAG &&
xpp.getName().equalsIgnoreCase("item"))
        {
            insideItem=false;
        }
        eventType = xpp.next(); //move to next element
    }

    }
    catch (MalformedURLException e)
    {
        e.printStackTrace();
    }
    catch (XmlPullParserException e)
    {
        e.printStackTrace();
    }
    catch (IOException e)
    {
        e.printStackTrace();
    }
    return null;
}
protected void onPostExecute(ArrayAdapter adapter)
{
    adapter = new ArrayAdapter(MainActivity.this,
android.R.layout.simple_list_item_1, headlines);
    setListAdapter(adapter);
}

@Override
protected void onItemClick(ListView l, View v, int position, long
id)
{
    Uri uri = Uri.parse(links.get(position).toString());
    Intent intent = new Intent(Intent.ACTION_VIEW, uri);
    startActivity(intent);
}

public InputStream getInputStream(URL url)
{
    try
    {
        return url.openConnection().getInputStream();
    }
    catch (IOException e)
    {
        return null;
    }
}
}

```

### AndroidManifest.xml

```

manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:allowBackup="true"

```

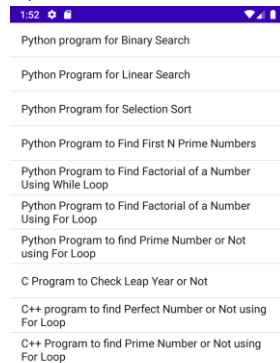
```

        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.Rssfeed"
        tools:targetApi="31">
        <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>



## 7) DESIGN AN APPLICATION THAT DRAWS BASIC LINE-BASED DRAWINGS ON THE SCREEN.

### Activity\_main.xml

```

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

    <ImageView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/imageView" />
</RelativeLayout>

```

### MainActivity.java

```

package com.example.shapes;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.drawable.BitmapDrawable;
import android.os.Bundle;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        //Creating a Bitmap
        Bitmap bg = Bitmap.createBitmap(720, 1280,
        Bitmap.Config.ARGB_8888);

        //Setting the Bitmap as background for the ImageView
        ImageView i = (ImageView) findViewById(R.id.imageView);
        i.setBackgroundDrawable(new BitmapDrawable(bg));

        //Creating the Canvas Object
        Canvas canvas = new Canvas(bg);

        //Creating the Paint Object and set its color & TextSize
        Paint paint = new Paint();
        paint.setColor(Color.BLUE);
        paint.setTextSize(50);

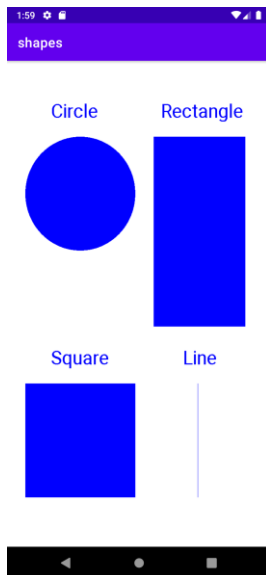
        //To draw a Rectangle
        canvas.drawText("Rectangle", 420, 150, paint);
        canvas.drawRect(400, 200, 650, 700, paint);

        //To draw a Circle
        canvas.drawText("Circle", 120, 150, paint);
        canvas.drawCircle(200, 350, 150, paint);

        //To draw a Square
        canvas.drawText("Square", 120, 800, paint);
        canvas.drawRect(50, 850, 350, 1150, paint);

        //To draw a Line
        canvas.drawText("Line", 480, 800, paint);
        canvas.drawLine(520, 850, 520, 1150, paint);
    }
}

```



## 8) DEVELOP AN ANDROID APPLICATION THAT IMPLEMENTS MULTI-THREADING

### Activity\_main.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" >

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="250dp"
        android:layout_height="250dp"
        android:layout_margin="50dp"
        android:layout_gravity="center" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_gravity="center"
        android:text="Load Image 1" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_gravity="center"
        android:text="Load image 2" />

</LinearLayout>
```

### MainActivity.java

```
package com.example.multithreading;

import androidx.appcompat.app.AppCompatActivity;
```

```

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
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.india1);
                            }
                        });
                    }
                }).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.india2);
                            }
                        });
                    }
                }).start();
            }
        });
    }
}

```

```
}  
}
```

Copy the Images given below and Paste it in “*app -> res -> drawable*” by pressing “right click mouse button on *drawable*” and selecting the “*Paste*” option. (india1.png,india2.png)



## 9) CREATE AN ANDROID APP THAT MAKES USE OF DATABASE (SQLITE)

### Activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_x="50dp"  
        android:layout_y="20dp"  
        android:text="Student Details"  
        android:textSize="30sp" />  
  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_x="20dp"  
        android:layout_y="110dp"  
        android:text="Enter Rollno:"  
        android:textSize="20sp" />  
  
    <EditText  
        android:id="@+id/Rollno"  
        android:layout_width="150dp"  
        android:layout_height="wrap_content"  
        android:layout_x="175dp"  
        android:layout_y="100dp"
```



```

        android:inputType="number"
        android:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="160dp"
    android:text="Enter Name:"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Name"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="150dp"
    android:inputType="text"
    android:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="210dp"
    android:text="Enter Marks:"
    android:textSize="20sp" />

<EditText
    android:id="@+id/Marks"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="200dp"
    android:inputType="number"
    android:textSize="20sp" />

<Button
    android:id="@+id/Insert"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="300dp"
    android:text="Insert"
    android:textSize="30dp" />

<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="300dp"
    android:text="Delete"
    android:textSize="30dp" />

<Button
    android:id="@+id/Update"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="400dp"

```

```

        android:text="Update"
        android:textSize="30dp" />

<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="400dp"
    android:text="View"
    android:textSize="30dp" />

<Button
    android:id="@+id/ViewAll"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_x="100dp"
    android:layout_y="500dp"
    android:text="View All"
    android:textSize="30dp" />

</AbsoluteLayout>

MainActivity.java

package com.example.database;

import androidx.appcompat.app.AppCompatActivity;
import android.app.AlertDialog.Builder;
import android.content.Context;
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;

public class MainActivity extends AppCompatActivity implements
OnClickListener {
    EditText Rollno, Name, Marks;
    Button Insert, Delete, Update, View, ViewAll;
    SQLiteDatabase db;
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Rollno=(EditText) findViewById(R.id.Rollno);
        Name=(EditText) findViewById(R.id.Name);
        Marks=(EditText) findViewById(R.id.Marks);
        Insert=(Button) findViewById(R.id.Insert);
        Delete=(Button) findViewById(R.id.Delete);
        Update=(Button) findViewById(R.id.Update);
        View=(Button) findViewById(R.id.View);
        ViewAll=(Button) findViewById(R.id.ViewAll);

        Insert.setOnClickListener((OnClickListener) this);
        Delete.setOnClickListener(this);
    }

```

```

Update.setOnClickListener(this);
View.setOnClickListener(this);
ViewAll.setOnClickListener(this);

// Creating database and table
db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name
VARCHAR,marks VARCHAR);");
}
public void onClick(View view)
{
    // Inserting a record to the Student table
    if(view==Insert)
    {
        // Checking for empty fields
        if(Rollno.getText().toString().trim().length()==0 ||
            Name.getText().toString().trim().length()==0 ||
            Marks.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter all values");
            return;
        }
        db.execSQL("INSERT INTO student
VALUES('"+Rollno.getText()+"','"+Name.getText()+"
','"+Marks.getText()+"');");
        showMessage("Success", "Record added");
        clearText();
    }
    // Deleting a record from the Student table
    if(view==Delete)
    {
        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter Rollno");
            return;
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst())
        {
            db.execSQL("DELETE FROM student WHERE
rollno='"+Rollno.getText()+"'");
            showMessage("Success", "Record Deleted");
        }
        else
        {
            showMessage("Error", "Invalid Rollno");
        }
        clearText();
    }
    // Updating a record in the Student table
    if(view==Update)
    {
        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter Rollno");
            return;
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE

```

```

rollno='"+Rollno.getText()+"'", null);
    if(c.moveToFirst()) {
        db.execSQL("UPDATE student SET name='"+ Name.getText() +
"' ,marks='"+ Marks.getText() +
        "' WHERE rollno='"+Rollno.getText()+"'");
        showMessage("Success", "Record Modified");
    }
    else {
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
// Display a record from the Student table
if(view==View)
{
    // Checking for empty roll number
    if(Rollno.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
    if(c.moveToFirst())
    {
        Name.setText(c.getString(1));
        Marks.setText(c.getString(2));
    }
    else
    {
        showMessage("Error", "Invalid Rollno");
        clearText();
    }
}
// Displaying all the records
if(view==ViewAll)
{
    Cursor c=db.rawQuery("SELECT * FROM student", null);
    if(c.getCount()==0)
    {
        showMessage("Error", "No records found");
        return;
    }
    StringBuffer buffer=new StringBuffer();
    while(c.moveToNext())
    {
        buffer.append("Rollno: "+c.getString(0)+"\n");
        buffer.append("Name: "+c.getString(1)+"\n");
        buffer.append("Marks: "+c.getString(2)+"\n\n");
    }
    showMessage("Student Details", buffer.toString());
}
}

public void showMessage(String title,String message)
{
    Builder builder=new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}
}

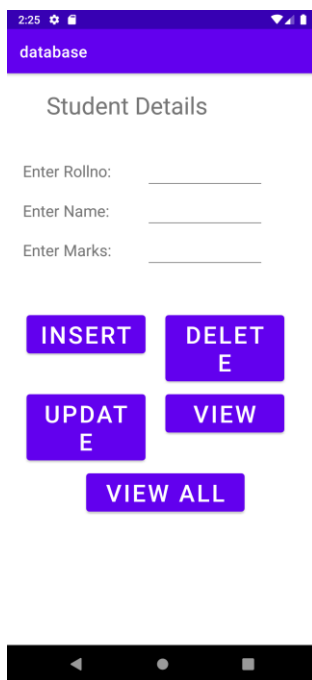
```

```

public void clearText()
{
    Rollno.setText("");
    Name.setText("");
    Marks.setText("");
    Rollno.requestFocus();
}

@Override
public void onPointerCaptureChanged(boolean hasCapture) {
    super.onPointerCaptureChanged(hasCapture);
}
}

```



## 10) DEVELOP AN APPLICATION THAT USES GPS LOCATION INFORMATION

### Activity\_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/relativeLayout1"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <Button
        android:id="@+id/show_Location"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show_Location"
        android:layout_centerVertical="true"
        android:layout_centerHorizontal="true"/>

</RelativeLayout>

```

### MainActivity.java

```

package com.example.gpsact;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button btnShowLocation;
    GPSTrace gps;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btnShowLocation=(Button) findViewById(R.id.show_Location);
        btnShowLocation.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                gps=new GPSTrace(MainActivity.this);
                if(gps.canGetLocation())
                {
                    double latitude=gps.getLatitude();
                    double longitude=gps.getLongitude();
                    Toast.makeText(getApplicationContext(),"Your Location
is \nLat:"+latitude+"\nLong:"+longitude,
                    Toast.LENGTH_LONG).show();
                }
                else {
                    gps.showSettingAlert();
                }
            }
        });
    }
}

```

Go to src folder & right click on your package folder and choose new class and name it GPSTrace

#### GPSTrace.java

```

package com.example.gpsact;

import android.annotation.SuppressLint;
import android.app.AlertDialog;
import android.app.Service;
import android.content.Context;
import android.content.DialogInterface;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.os.IBinder;
import android.provider.Settings;

import androidx.core.app.ActivityCompat;

public class GPSTrace extends Service implements LocationListener {

```

```

private final Context context;
boolean isGPSEnabled = false;
boolean canGetLocation = false;
boolean isNetworkEnabled = false;
Location location;
double latitude;
double longitude;
private static final long MIN_DISTANCE_CHANGE_FOR_UPDATES = 10;
private static final long
    MIN_TIME_BW_UPDATES = 1000 * 60 * 1;
protected LocationManager locationManager;

public GPSTrace(Context context) {
    this.context = context;
    getLocation();
}

@SuppressWarnings("MissingPermission")
public Location getLocation() {
    try {
        locationManager = (LocationManager)
context.getSystemService(LOCATION_SERVICE);
        isGPSEnabled =
locationManager.isProviderEnabled(LocationManager.GPS_PROVIDER);
        isNetworkEnabled =
locationManager.isProviderEnabled(LocationManager.NETWORK_PROVIDER);
        if (!isGPSEnabled && !isNetworkEnabled) {
        } else {
            this.canGetLocation = true;
            if (isNetworkEnabled) {

locationManager.requestLocationUpdates(LocationManager.NETWORK_PROVIDER,
MIN_TIME_BW_UPDATES, MIN_DISTANCE_CHANGE_FOR_UPDATES, this);
                if (locationManager != null) {

location=locationManager.getLastKnownLocation(LocationManager.NETWORK_PROVIDE
DER);
                    if (location != null) { latitude=location.getLatitude();
longitude=location.getLongitude();
                    }
                }
            }
            if (isGPSEnabled) { if (location == null) {

locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER,
MIN_TIME_BW_UPDATES, MIN_DISTANCE_CHANGE_FOR_UPDATES, this);
                if (locationManager != null) {

location=locationManager.getLastKnownLocation(LocationManager.GPS_PROVIDER)
;
                    if (location != null) {
                        latitude=location.getLatitude();
longitude=location.getLongitude();
                    }
                }
            }
        }
    }
    catch (Exception e)

```

```

        {
            e.printStackTrace();
        }
        return location;
    }
    public void stopUsingGPS() { if(locationManager!=null) {
        locationManager.removeUpdates(GPSTrace.this);
    } }
    public double getLatitude() { if(location!=null) {
        latitude=location.getLatitude();
    }
        return latitude;
    }
    public double getLongitude()
    { if(location!=null)
    { longitude=location.getLongitude();
    }
        return longitude;
    }
    public boolean canGetLocation() { return this.canGetLocation;
    }
    public void showSettingAlert() {
        AlertDialog.Builder alertDialog=new AlertDialog.Builder(context);
        alertDialog.setTitle("GPS is settings");
        alertDialog.setMessage("GPS is not enabled.Do you want to go to
setting menu?");
        alertDialog.setPositiveButton("settings", new
DialogInterface.OnClickListener()
        {
            @Override
            public void onClick(DialogInterface dialog,int which) {
                Intent intent=new
Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
                context.startActivity(intent);
            }
        });
        alertDialog.setNegativeButton("cancel", new
DialogInterface.OnClickListener()
        {
            @Override

            public void onClick(DialogInterface dialog, int which) {
// TODO Auto-generated method stub
                dialog.cancel();
            }
        });
        alertDialog.show();
    }
    @Override
    public void onLocationChanged(Location location) {
// TODO Auto-generated method stub
    }
    @Override
    public void onProviderDisabled(String provider) {
// TODO Auto-generated method stub
    }
    @Override
    public void onProviderEnabled(String provider) {
// TODO Auto-generated method stub
    }
    @Override

```



```

        public void onStatusChanged(String provider, int status, Bundle extras)
    {
        // TODO Auto-generated method stub
    }
    @Override
    public IBinder onBind(Intent intent) { // TODO Auto-generated method stub
        return null;
    }
}

```

## Android\_manifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission
        android:name="android.permission.ACCESS_FINE_LOCATION"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.GPSact"
        tools:targetApi="31">
        <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>

```



11. Design an application that writes data to the external card.

Activity\_main.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:layout_margin="20dp"
    android:orientation="vertical">

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Write Data"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Read data"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Clear"
```

```

        android:textSize="30dp" />

</LinearLayout>

```

## AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission
        android:name="android.permission.WRITE_EXTERNAL_STORAGE"></uses-permission>

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.SDCARD"
        tools:targetApi="31">
        <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>

```

## MainActivity.java

```

package com.example.sdcard;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

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

public class MainActivity extends AppCompatActivity {
    EditText e1;
    Button write, read, clear;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);

```

```

setContentView(R.layout.activity_main);

e1= (EditText) findViewById(R.id.editText);
write= (Button) findViewById(R.id.button);
read= (Button) findViewById(R.id.button2);
clear= (Button) findViewById(R.id.button3);

write.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        String message=e1.getText().toString();
        try
        {
            File f=new File("/sdcard/myfile.txt");
            f.createNewFile();
            FileOutputStream fout=new FileOutputStream(f);
            fout.write(message.getBytes());
            fout.close();
            Toast.makeText(getApplicationContext(),"Data Written in
SDCARD",Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
            Toast.makeText(getApplicationContext(),e.getMessage(),Toast.LENGTH_LONG).show();
        }
    }
});

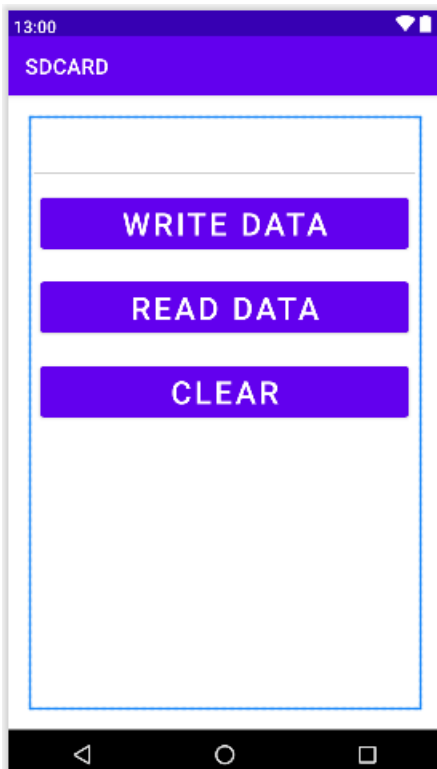
read.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        String message;
        String buf = "";
        try
        {
            File f = new File("/sdcard/myfile.txt");
            FileInputStream fin = new FileInputStream(f);
            BufferedReader br = new BufferedReader(new
InputStreamReader(fin));
            while ((message = br.readLine()) != null)
            {
                buf += message;
            }
            e1.setText(buf);
            br.close();
            fin.close();
            Toast.makeText(getApplicationContext(),"Data Recived from
SDCARD",Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
            Toast.makeText(getApplicationContext(), e.getMessage(),
Toast.LENGTH_LONG).show();
        }
    }
});

```

```

clear.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        e1.setText("");
    }
});
}
}

```



## 12. Develop an android application that creates alarm clock.

File>new>Activity>EmptyActivity -AlarmReceiver

### Activity\_main.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">

    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center" />

    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="20dp"

```

```

        android:checked="false"
        android:onClick="OnToggleClicked" />

</LinearLayout>

```

## AndroidManifest.xml

```

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

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.Alarm"
        tools:targetApi="31">
        <receiver
            android:name=".AlarmReceiver"
            android:exported="false" />
        <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>

```

## MainActivity.java

```

{ package com.example.alarm;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.view.View;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;
import java.util.Calendar;
public class MainActivity extends AppCompatActivity {

    TimePicker alarmTimePicker;
    PendingIntent pendingIntent;
    AlarmManager alarmManager;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {

```

```

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        alarmTimePicker = (TimePicker) findViewById(R.id.timePicker);
        alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
    }
    public void OnToggleClicked(View view)
    {
        long time;
        if (((ToggleButton) view).isChecked())
        {
            Toast.makeText(MainActivity.this, "ALARM ON",
Toast.LENGTH_SHORT).show();
            Calendar calendar = Calendar.getInstance();
            calendar.set(Calendar.HOUR_OF_DAY,
alarmTimePicker.getCurrentHour());
            calendar.set(Calendar.MINUTE,
alarmTimePicker.getCurrentMinute());
            Intent intent = new Intent(this, AlarmReceiver.class);
            pendingIntent = PendingIntent.getBroadcast(this, 0, intent, 0);

            time=(calendar.getTimeInMillis()-
(calendar.getTimeInMillis()%60000));
            if(System.currentTimeMillis()>time)
            {
                if (calendar.AM_PM == 0)
                    time = time + (1000*60*60*12);
                else
                    time = time + (1000*60*60*24);
            }
            alarmManager.setRepeating(AlarmManager.RTC_WAKEUP, time, 10000,
pendingIntent);
        }
        else
        {
            alarmManager.cancel(pendingIntent);
            Toast.makeText(MainActivity.this, "ALARM OFF",
Toast.LENGTH_SHORT).show();
        }
    }
}

```

## AlarmReceiver.java

```

package com.example.alarm;

import android.os.Bundle;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.widget.Toast;

public class AlarmReceiver extends BroadcastReceiver {

```

```

@Override
public void onReceive(Context context, Intent intent)
{
    Toast.makeText(context, "Alarm! Wake up! Wake up!",
Toast.LENGTH_LONG).show();
    Uri alarmUri =
RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);
    if (alarmUri == null)
    {
        alarmUri =
RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION);
    }
    Ringtone ringtone = RingtoneManager.getRingtone(context, alarmUri);
    ringtone.play();
}
}

```

