Expt. No. : 1 **Date :**

Reg. No. :

Develop an application to change the font and color of the text and display toast message when the user presses the button

AIM:

To Develop an application to change the font and color of the text and display toast message when the user presses the button.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example. it17611_exptno_1">

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

</manifest>
```

activity_main.xml

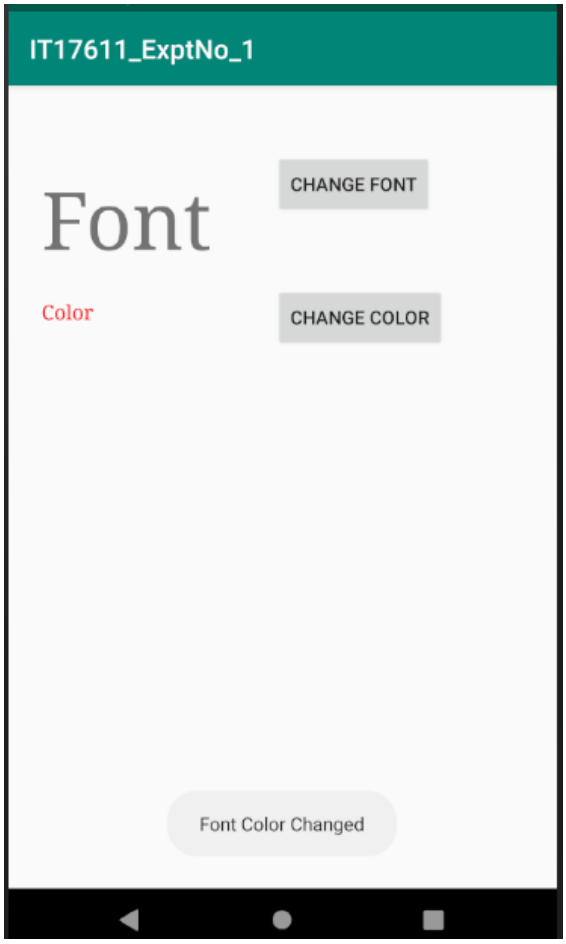
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Font"
        android:typeface="serif"
        android:textSize="40px"
        android:layout_marginLeft="25dp"
        android:layout_marginTop="60dp"
        android:id="@+id/T1"    />

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

```
        android:text="Color"
        android:typeface="serif"
        android:textSize="40px"
        android:layout_marginLeft="25dp"
        android:layout_marginTop="160dp"
        android:id="@+id/T2"        />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Change Font"
        android:layout_marginLeft="200dp"
        android:layout_marginTop="50dp"
        android:id="@+id/B1"        />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Change Color"
        android:layout_marginLeft="200dp"
        android:layout_marginTop="150dp"
        android:id="@+id/B2"        />
</RelativeLayout>
```

MainActivity.java

```
package com.example. it17611_exptno_1;

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

public class MainActivity extends AppCompatActivity {
   TextView T1,T2;
   Button B1,B2;

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

      T1=(TextView)findViewById(R.id.T1);
      T2=(TextView)findViewById(R.id.T2);
      B1=(Button)findViewById(R.id.B1);
      B2=(Button)findViewById(R.id.B2);

      B1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            T1.setTextSize(40);
            Toast.makeText(getApplicationContext(),
                           "Font Size Changed",Toast.LENGTH_LONG).show();
         }
      });
      B2.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            T2.setTextColor(Color.RED);
            Toast.makeText(getApplicationContext(),
                           "Font Color Changed", Toast.LENGTH_LONG ).show();
         }
      });
   }
}
```

OUTPUT:



RESULT:

Thus, an android application to change the font and color of the text and display toast message when the user presses the button was successfully developed.

Expt. No. : 2 **Date :**

Reg. No. :

Develop an application to add two numbers (Read the input values in first and second text box) and display the result in third text box using Event Manager and display the UI in Grid layout format

AIM:

To develop Develop an application to add two numbers (Read the input values in first and second text box) and display the result in third text box using Event Manager and display the UI in Grid layout formats.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example. it17611_exptno_2">

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

activity_main.xml

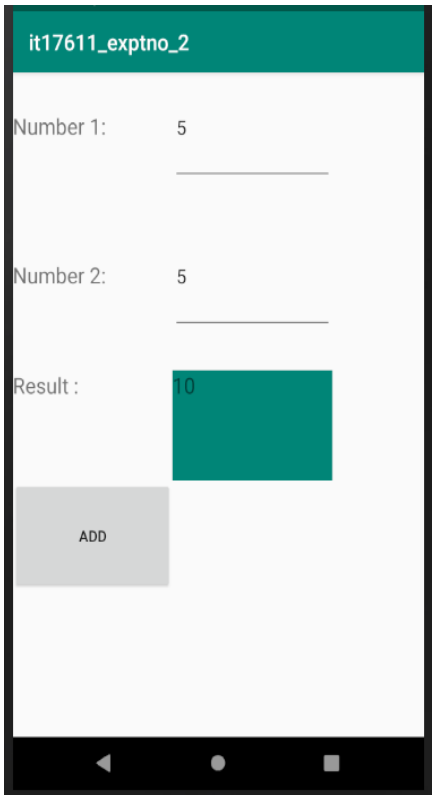
```
?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <GridLayout
        android:id="@+id/GridLayout1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_alignParentBottom="true"
        android:layout_marginBottom="0dp"
        android:columnCount="2"
        android:orientation="horizontal"
        android:rowCount="4"
        tools:context=".GridXMLActivity"
        tools:layout_editor_absoluteX="56dp"
        tools:layout_editor_absoluteY="0dp">
```

```
    <TextView
        android:id="@+id/textView"
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:text="Number 1:"
        android:textSize="20dp" />

    <EditText
        android:id="@+id/E1"
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:inputType="number" />

    <TextView
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:text="Number 2:"
        android:textSize="20dp" />

    <EditText
        android:id="@+id/E2"
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:inputType="number" />

    <TextView
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:text="Result :"
        android:textSize="20dp" />

    <TextView
        android:id="@+id/T1"
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:background="@color/colorPrimary"
        android:text=""
        android:textSize="20dp" />

    <Button
        android:id="@+id/B1"
        android:layout_width="160dp"
        android:layout_height="100dp"
        android:text="Add" />

  </GridLayout>
</RelativeLayout>
```

MainActivity.java

```
package com.example. it17611_exptno_2;

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;

public class MainActivity extends AppCompatActivity {

    Button b1,b2,b3,b4;
    EditText e1,e2;
    TextView t1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1 = (Button) findViewById(R.id.B1);

        e1 = (EditText) findViewById(R.id.E1);
        e2 = (EditText) findViewById(R.id.E2);
        t1 = (TextView) findViewById(R.id.T1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Integer N1 = Integer.parseInt(e1.getText().toString());
                Integer N2 = Integer.parseInt(e2.getText().toString());
                Integer RES = N1 + N2;
                t1.setText(RES.toString());
            }
        });
    }
}
```

OUTPUT:



RESULT:

Thus, an application to add two numbers using Event Manager was developed successfully.

Expt. No. : 3 **Date :**

Reg. No. :

Develop a scientific calculator to perform arithmetic and mathematical functions using Math class. [Your scientific calculator should contain +, *, /, -, cos, sin, tan, pow, sqrt, log, lan and mod].

AIM:

To develop an android application for a scientific calculator to perform arithmetic and mathematical functions using Math class.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example. it17611_exptno_3">

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

</manifest>
```

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:background="#FCF8F8"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="0.3"
        android:orientation="vertical">

        <TextView
            android:id="@+id/input"
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:textSize="30sp" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="0.3"
```

```
    android:orientation="vertical"
    android:background="#EEF2F3">

    <TextView
        android:id="@+id/display"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:textSize="30sp" />

</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/buttonclr"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="Clear"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttoneql"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="="
        android:textSize="30sp" />

</LinearLayout>


<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/buttoncos"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="cos"
        android:textSize="20sp" />
```

```
    <Button
        android:id="@+id/buttonsin"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="sin"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttontan"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="tan"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttonsqrt"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="sqrt"
        android:textSize="20sp" />



</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/buttonsq"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="x^2"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttonpow"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="x^y"
        android:textSize="20sp" />
```

```
    <Button
        android:id="@+id/buttonlog"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="log"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttonexp"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="e^x"
        android:textSize="20sp" />

</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/button7"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="7"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button8"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="8"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button9"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="9"
        android:textSize="20sp" />
```

```
    <Button
        android:id="@+id/buttondiv"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="/"
        android:textSize="30sp" />

</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="4"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button5"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="5"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button6"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="6"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttonmul"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="*"
        android:textSize="30sp" />
```

```
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="1"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="2"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="3"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttonsub"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="-"
        android:textSize="30sp" />

</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="0.2"
    android:orientation="horizontal">

    <Button
        android:id="@+id/buttondot"
```

```
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_margin="1dp"
            android:layout_weight="0.25"
            android:text="."
            android:textSize="20sp" />

        <Button
            android:id="@+id/button0"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_margin="1dp"
            android:layout_weight="0.25"
            android:text="0"
            android:textSize="20sp" />

        <Button
            android:id="@+id/buttonrem"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_margin="1dp"
            android:layout_weight="0.25"
            android:text="%"
            android:textSize="30sp" />

        <Button
            android:id="@+id/buttonadd"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_margin="1dp"
            android:layout_weight="0.25"
            android:text="+"
            android:textSize="30sp" />

    </LinearLayout>

</LinearLayout>
```

MainActivity.java

```
package com.example.it17611_exptno_3;

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 {

    double input1 = 0, input2 = 0;
    TextView edt1,edt2;
    boolean Add, Sub, Mul, Div, Rem, dec, cos, sin, tan, pow, sq, sqrt, log, exp;
    Button button0, button1, button2, button3, button4, button5, button6, button7, button8,
            button9, buttonAdd, buttonSub, buttonMul, buttonDiv, buttonEqual, buttonClr,
            buttonDot, buttonRem, buttonCos, buttonSin, buttonTan, buttonPow, buttonSq,
            buttonSqrt, buttonLog, buttonExp;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        button0 = (Button) findViewById(R.id.button0);
        button1 = (Button) findViewById(R.id.button1);
        button2 = (Button) findViewById(R.id.button2);
        button3 = (Button) findViewById(R.id.button3);
        button4 = (Button) findViewById(R.id.button4);
        button5 = (Button) findViewById(R.id.button5);
        button6 = (Button) findViewById(R.id.button6);
        button7 = (Button) findViewById(R.id.button7);
        button8 = (Button) findViewById(R.id.button8);
        button9 = (Button) findViewById(R.id.button9);
        buttonDot = (Button) findViewById(R.id.buttondot);
        buttonAdd = (Button) findViewById(R.id.buttonadd);
        buttonSub = (Button) findViewById(R.id.buttonsub);
        buttonMul = (Button) findViewById(R.id.buttonmul);
        buttonDiv = (Button) findViewById(R.id.buttondiv);
        buttonRem = (Button) findViewById(R.id.buttonrem);

        buttonCos = (Button) findViewById(R.id.buttoncos);
        buttonSin = (Button) findViewById(R.id.buttonsin);
        buttonTan = (Button) findViewById(R.id.buttontan);
        buttonSqrt = (Button) findViewById(R.id.buttonsqrt);
        buttonPow = (Button) findViewById(R.id.buttonpow);
        buttonLog = (Button) findViewById(R.id.buttonlog);
        buttonExp = (Button) findViewById(R.id.buttonexp);
        buttonSq = (Button) findViewById(R.id.buttonsq);

        buttonClr = (Button) findViewById(R.id.buttonclr);
        buttonEqual = (Button) findViewById(R.id.buttoneql);
        edt1 = (TextView) findViewById(R.id.input);
        edt2 = (TextView) findViewById(R.id.display);
```

```
button1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "1");
    }
});

button2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "2");
    }
});

button3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "3");
    }
});

button4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "4");
    }
});

button5.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "5");
    }
});

button6.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "6");
    }
});

button7.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "7");
    }
});

button8.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "8");
```

```
    }
});

button9.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "9");
    }
});

button0.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText(edt1.getText() + "0");
    }
});

buttonAdd.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Add = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonSub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Sub = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonMul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Mul = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonDiv.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Div = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonRem.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            Rem = true;
            dec = false;
            edt1.setText(null);
        }
    }
});


buttonCos.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1=Float.parseFloat(edt1.getText() + "");
            cos = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonSin.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1=Float.parseFloat(edt1.getText() + "");
            sin = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonTan.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1=Float.parseFloat(edt1.getText() + "");
            tan = true;
```

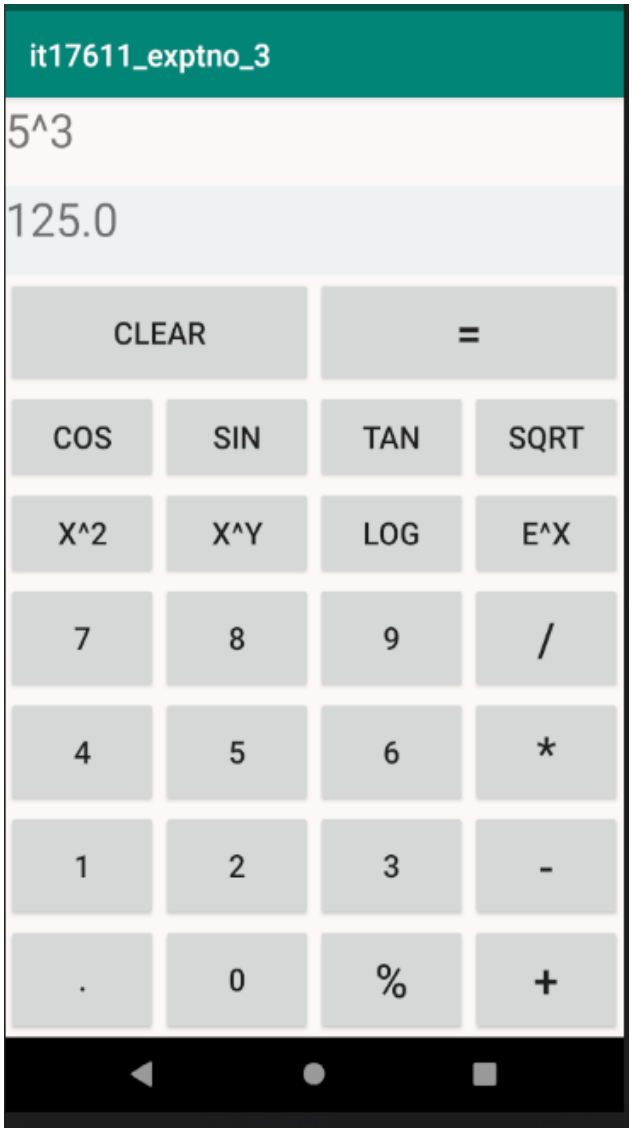
```
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonPow.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            pow = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonSq.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {

            input1 = Float.parseFloat(edt1.getText() + "");
            sq = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonSqrt.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            sqrt = true;
            dec = false;
            edt1.setText(null);
        }
    }
});

buttonLog.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            log = true;
            dec = false;
            edt1.setText(null);
        }
    }
});
```

```
buttonExp.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (edt1.getText().length() != 0) {
            input1 = Float.parseFloat(edt1.getText() + "");
            exp = true;
            dec = false;
            edt1.setText(null);
        }
    }
});


buttonDot.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (dec) {
            //do nothing or you can show the error
        } else {
            edt1.setText(edt1.getText() + ".");
            dec = true;
        }

    }
});

buttonClr.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        edt1.setText("");
        edt2.setText("");
        input1 = 0.0;
        input2 = 0.0;
    }
});

buttonEqual.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (Add || Sub || Mul || Div || Rem || pow) {
            input2 = Float.parseFloat(edt1.getText() + "");
        }

        if (Add) {
            edt1.setText((int)input1+"+"+(int)input2);
            double radd=input1+input2;
            edt2.setText((int)radd+"");
            Add = false;
        }

        if (Sub) {
            edt1.setText((int)input1+"-"+(int)input2);
            double rsub=input1-input2;
```

```
    edt2.setText((int)rsub+"");
    Sub = false;
}

if (Mul) {
    edt1.setText((int)input1+"*"+(int)input2);
    double rmul=input1*input2;
    edt2.setText((int)rmul+"");
    Mul = false;
}

if (Div) {
    edt1.setText((int)input1+"/"+(int)input2);
    double rdiv=input1/input2;
    edt2.setText(rdiv+"");
    Div = false;
}
if (Rem) {
    edt1.setText((int)input1+"%"+(int)input2);
    double rrem=input1%input2;
    edt2.setText((int)rrem+"");
    Rem = false;
}

if(cos){
    edt1.setText("cos("+(int)input1+")");
    double ceql=Math.cos(Math.toRadians(input1));
    edt2.setText(ceql+"");
    cos = false;
}

if(sin){
    edt1.setText("sin("+(int)input1+")");
    double seql=Math.sin(Math.toRadians(input1));
    edt2.setText(seql+"");
    sin = false;
}

if(tan){
    edt1.setText("tan("+(int)input1+")");
    double teql=Math.tan(Math.toRadians(input1));
    edt2.setText(teql+"");
    tan = false;
}

if(sqrt){
    edt1.setText("sqrt("+(int)input1+")");
    double sqrteql=Math.sqrt(input1);
    edt2.setText(sqrteql+"");
    sqrt = false;
}

if(sq){
    edt1.setText((int)input1+"^2");
```

```
                double sqeql=input1 * input1;
                edt2.setText(sqeql+"");
                log = false;
            }

            if(pow){
                edt1.setText((int)input1+"^"+(int)input2);
                double peql=Math.pow(input1,input2);
                edt2.setText(peql+"");
                pow = false;
            }

            if(log){
                edt1.setText("log("+(int)input1+")");
                double lgeql=Math.log10(input1);
                edt2.setText(lgeql+"");
                log = false;
            }

            if(exp){
                edt1.setText("e^"+(int)input1);
                double expeql=Math.exp(input1);
                edt2.setText(expeql+"");
                exp = false;
            }
        }
    });
  }
}
```

OUTPUT:



RESULT:

Thus, an android application that as a scientific calculator to perform arithmetic and mathematical functions using Math class was developed successfully.

Expt. No. : 4 **Date :**

Reg. No. :

Develop an android application to draw the circle, ellipse, rectangle and some text using Android Graphical primitives

AIM:

To develop an android application to draw the circle, ellipse, rectangle and some text using Android Graphical primitives.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package=" com.example.it17611_exptno_4 ">

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

</manifest>
```

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">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="50dp"
        android:orientation="horizontal"
        android:layout_gravity="bottom">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:text="Graphical Primitives"
            android:textSize="30dp"/>
    </LinearLayout>


    <com.example.it17611_exptno_4.TouchScreen
        android:id="@+id/t1"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:layout_weight="1" />
```

```
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="50dp"
            android:orientation="horizontal"
            android:layout_gravity="bottom">
            <Button
                android:id="@+id/b1"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Circle/Ellipse"
                android:singleLine="false"/>
            <Button
                android:id="@+id/b2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Square/Rect"/>
            <Button
                android:id="@+id/b3"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Text"/>
            <Button
                android:id="@+id/b4"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Clear"/>
        </LinearLayout>
</LinearLayout>
```

MainActivity.java

```
package com.example.it17611_exptno_4;

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

public class MainActivity extends AppCompatActivity {
    TouchScreen t1;
    Button b1,b2,b3,b4;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t1=(TouchScreen)findViewById(R.id.t1);
        b1=(Button)findViewById(R.id.b1);
        b2=(Button)findViewById(R.id.b2);
        b3=(Button)findViewById(R.id.b3);
        b4=(Button)findViewById(R.id.b4);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

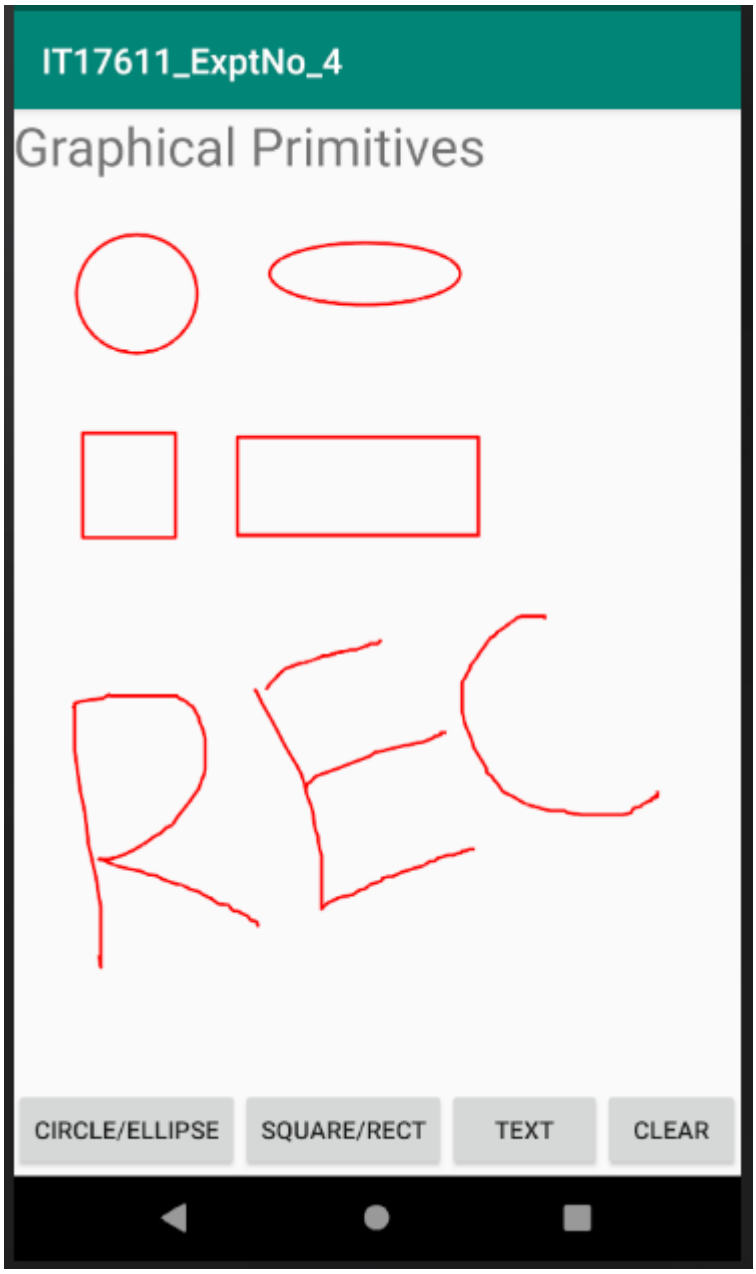
```
            t1.setDrawint(0);}
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                t1.setDrawint(1);
            }
        });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                t1.setDrawint(2);
            }
        });
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                t1.startDrawing();
            }
        });
    }
}
```

TouchScreen.java

```
package com.example.it17611_exptno_4;

import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.Path;
import android.graphics.RectF;
import android.util.AttributeSet;
import android.view.MotionEvent;
import android.view.View;
public class TouchScreen extends View {
    Paint paint=new Paint();
    Path path=new Path();
    float x,y,x1,y1;
    int flag;
    public TouchScreen(Context context, AttributeSet attributeSet)
    {
        super(context,attributeSet);
        paint.setColor(Color.RED);
        paint.setAntiAlias(true);
        paint.setStrokeJoin(Paint.Join.ROUND);
        paint.setStyle(Paint.Style.STROKE);
        paint.setStrokeWidth(5f);
    }
    @Override
    public void onDraw(Canvas canvas)
    {canvas.drawPath(path,paint);
    }
```

```
    @Override
    public boolean onTouchEvent(MotionEvent event)
    {
        if(flag==2) {
            float X = event.getX();
            float Y = event.getY();
            switch (event.getAction())
            {
                case MotionEvent.ACTION_DOWN:
                    path.moveTo(X, Y);
                    return true;
                case MotionEvent.ACTION_MOVE:
                    path.lineTo(X, Y);
                    break;
                case MotionEvent.ACTION_UP:
                    break;
                default:
                    return false;
            }
        }
        if(flag == 0 || flag == 1){
            switch (event.getAction()) {
                case MotionEvent.ACTION_DOWN:
                    x = event.getX();
                    y = event.getY();
                    return true;
                case MotionEvent.ACTION_MOVE:
                    break;
                case MotionEvent.ACTION_UP:
                    x1 = event.getX();
                    y1 = event.getY();
                    RectF rectF = new RectF(x, y, x1, y1);
                    if(flag == 0)
                        path.addOval(rectF, Path.Direction.CCW);
                    if(flag == 1)
                        path.addRect(rectF, Path.Direction.CCW);
                    break;
                default:
                    return false;
            }
        }
        invalidate();
        return true;
    }
    public void setDrawint(int F)
    {
        flag=F;
    }
    public void startDrawing()
    {
        path.rewind();
        invalidate();
    }
}
```

OUTPUT:



RESULT:

Thus, an android application to draw the circle, ellipse, rectangle and some text using Android Graphical primitives was developed successfully.

Expt. No. : 5 **Date :**

Reg. No. :

Create a Database table with the following structure using SQLite: Student (Name, roll no, Marks). Develop an android application to perform the following operation (1. Insert student Details 2. Update the student Record 3. Delete the student record by Roll no 4. View the details)

AIM:

To Create a Database table with the following structure using SQLite: Student (Name, roll no, Marks). Develop an android application to perform the following operation (1. Insert student Details 2. Update the student Record 3. Delete the student record by Roll no 4. View the details).

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package=" com.example.it17611_exptno_5">

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

</manifest>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout 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:text="Student Details"
      android:layout_x="150dp"
      android:layout_y="20dp"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"/>

   <TextView
      android:text="Enter Roll No."
      android:layout_x="30dp"
      android:layout_y="60dp"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"/>

   <EditText
      android:id="@+id/editRollno"
      android:inputType="number"
      android:layout_x="150dp"
      android:layout_y="50dp"
      android:layout_width="150dp"
```

```
    android:layout_height="40dp"/>

<TextView
    android:text="Enter Name"
    android:layout_x="30dp"
    android:layout_y="120dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editName"
    android:inputType="text"
    android:layout_x="150dp"
    android:layout_y="110dp"
    android:layout_width="150dp"
    android:layout_height="40dp"/>

<TextView
    android:text="Enter Marks"
    android:layout_x="30dp"
    android:layout_y="180dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editMarks"
    android:inputType="number"
    android:layout_x="150dp"
    android:layout_y="160dp"
    android:layout_width="150dp"
    android:layout_height="40dp"/>

<Button
    android:id="@+id/btnInsert"
    android:text="Insert"
    android:layout_x="30dp"
    android:layout_y="250dp"
    android:layout_width="100dp"
    android:layout_height="40dp"/>

<Button
    android:id="@+id/btnUpdate"
    android:text="Update"
    android:layout_x="140dp"
    android:layout_y="250dp"
    android:layout_width="100dp"
    android:layout_height="40dp"/>

<Button
    android:id="@+id/btnDelete"
    android:text="Delete"
    android:layout_x="250dp"
    android:layout_y="250dp"
    android:layout_width="100dp"
```

```
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnView"
        android:text="View Single Record"
        android:layout_x="30dp"
        android:layout_y="350dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnViewAll"
        android:text="View All Record"
        android:layout_x="140dp"
        android:layout_y="350dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>

</AbsoluteLayout>
```

MainActivity.java

```
package com.example.it17611_exptno_5;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
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 editRollno,editName,editMarks;
    Button btnInsert,btnUpdate, btnDelete,btnView,btnViewAll;
    SQLiteDatabase db;

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

        editRollno=(EditText)findViewById(R.id.editRollno);
        editName=(EditText)findViewById(R.id.editName);
        editMarks=(EditText)findViewById(R.id.editMarks);
        btnInsert=(Button)findViewById(R.id.btnInsert);
        btnUpdate=(Button)findViewById(R.id.btnUpdate);
        btnDelete=(Button)findViewById(R.id.btnDelete);
```

```
        btnView=(Button)findViewById(R.id.btnView);
        btnViewAll=(Button)findViewById(R.id.btnViewAll);

        btnInsert.setOnClickListener(this);
        btnUpdate.setOnClickListener(this);
        btnDelete.setOnClickListener(this);
        btnView.setOnClickListener(this);
        btnViewAll.setOnClickListener(this);

        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)
    {
        if(view==btnInsert)
        {
            if(editRollno.getText().toString().trim().length()==0||
editName.getText().toString().trim().length()==0||
                    editMarks.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter all values");
                return;
            }
            db.execSQL("INSERT INTO student
VALUES('"+editRollno.getText()+"','"+editName.getText()+ "','"+editMarks.getText()+"');");
            showMessage("Success", "Record added");
            clearText();
        }

        if(view==btnUpdate)
        {
            if(editRollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+editRollno.getText()+"'", null);
            if(c.moveToFirst())
            {
                db.execSQL("UPDATE student SET
name='"+editName.getText()+"',marks='"+editMarks.getText()+
                                            "' WHERE rollno='"+editRollno.getText()+"'");
                showMessage("Success", "Record Modified");
            }
            else
            {
                showMessage("Error", "Invalid Rollno");
            }
            clearText();
        }

        if(view==btnDelete)
```

```
        {
            if(editRollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+editRollno.getText()+"'", null);
            if(c.moveToFirst())
            {
                db.execSQL("DELETE FROM student WHERE rollno='"+editRollno.getText()+"'");
                showMessage("Success", "Record Deleted");
            }
            else
            {
                showMessage("Error", "Invalid Rollno");
            }
            clearText();
        }

        if(view==btnView)
        {
            if(editRollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
            Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+editRollno.getText()+"'", null);
            if(c.moveToFirst())
            {
                editName.setText(c.getString(1));
                editMarks.setText(c.getString(2));
            }
            else
            {
                showMessage("Error", "Invalid Rollno");
                clearText();
            }
        }

        if(view==btnViewAll)
        {
            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()
    {
        editRollno.setText("");
        editName.setText("");
        editMarks.setText("");
        editRollno.requestFocus();
    }
}
```

OUTPUT:

RESULT:

Thus, an android application to Create a Database table with the following structure using SQLite: Student (Name, roll no, Marks). was developed successfully.

Expt. No. : 6 **Date :**

Reg. No. :

Create on-line recruitment form for XXX-InfoTech Company. The form should consist of First Name, Last Name, DOB, Phone No, Gender, Address, E-mail, Highest Qualification, Branch, Percentage of marks, Language Known, upload the image and provide with save and cancel button. All form controls should have appropriate validation.

AIM:

To develop an android application Create on-line recruitment form for XXX-InfoTech Company.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_exptno_6">

  <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
  <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout 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:text="ABC-InfoTech Company on-line recruitment form"
        android:layout_x="50dp"
        android:layout_y="20dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:background="#FFEB3B"
        android:textStyle="bold"/>

    <TextView
        android:text="Enter First Name"
        android:layout_x="30dp"
        android:layout_y="50dp"
        android:textSize="12dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <EditText
        android:id="@+id/editFName"
```

```
    android:layout_x="180dp"
    android:layout_y="50dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Last Name"
    android:layout_x="30dp"
    android:layout_y="90dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editLName"
    android:layout_x="180dp"
    android:layout_y="90dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter DOB"
    android:layout_x="30dp"
    android:layout_y="130dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editDOB"
    android:inputType="date"
    android:layout_x="180dp"
    android:layout_y="130dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Phone No"
    android:layout_x="30dp"
    android:layout_y="170dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editPhoneNo"
    android:inputType="number"
    android:layout_x="180dp"
    android:layout_y="170dp"
    android:textSize="12dp"
    android:layout_width="150dp"
```

```
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Gender"
    android:layout_x="30dp"
    android:layout_y="210dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editGender"
    android:layout_x="180dp"
    android:layout_y="210dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Address"
    android:layout_x="30dp"
    android:layout_y="250dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editAddress"
    android:inputType="textPostalAddress"
    android:layout_x="180dp"
    android:layout_y="250dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter E-Mail"
    android:layout_x="30dp"
    android:layout_y="290dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editEMail"
    android:inputType="textEmailAddress"
    android:layout_x="180dp"
    android:layout_y="290dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Qualification"
```

```
    android:layout_x="30dp"
    android:layout_y="330dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editQualification"
    android:layout_x="180dp"
    android:layout_y="330dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Branch"
    android:layout_x="30dp"
    android:layout_y="370dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editBranch"
    android:layout_x="180dp"
    android:layout_y="370dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Enter Mark (%)"
    android:layout_x="30dp"
    android:layout_y="410dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/editPMark"
    android:layout_x="180dp"
    android:layout_y="410dp"
    android:textSize="12dp"
    android:layout_width="150dp"
    android:layout_height="35dp"/>

<TextView
    android:text="Languages Known"
    android:layout_x="30dp"
    android:layout_y="450dp"
    android:textSize="12dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"/>
```

```
    <EditText
        android:id="@+id/editLanguages"
        android:layout_x="180dp"
        android:layout_y="450dp"
        android:textSize="12dp"
        android:layout_width="150dp"
        android:layout_height="35dp"/>

    <TextView
        android:text="Upload Photo"
        android:layout_x="30dp"
        android:layout_y="490dp"
        android:textSize="12dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <ImageView
        android:id="@+id/imagePhoto"
        android:layout_width="60dp"
        android:layout_height="50dp"
        android:layout_x="180dp"
        android:layout_y="490dp"
        android:padding="5dp"
        android:src="@mipmap/ic_launcher"
        android:adjustViewBounds="true" />

    <Button
        android:id="@+id/btnUploadPhoto"
        android:text="Choose"
        android:textSize="12dp"
        android:layout_x="250dp"
        android:layout_y="490dp"
        android:layout_width="80dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnSave"
        android:text="Save"
        android:textSize="12dp"
        android:layout_x="100dp"
        android:layout_y="550dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnCancel"
        android:text="Cancel"
        android:textSize="12dp"
        android:layout_x="250dp"
        android:layout_y="550dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>
</AbsoluteLayout>
```

MainActivity.java

```
package com.example.it17611_exptno_6;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;

import android.Manifest;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.graphics.drawable.BitmapDrawable;
import android.net.Uri;
import android.os.Bundle;
import android.database.sqlite.SQLiteDatabase;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.Toast;

import java.io.ByteArrayOutputStream;
import java.io.FileNotFoundException;
import java.io.InputStream;

public class MainActivity extends AppCompatActivity
{
   EditText editFName,editLName,editDOB, editPhoneNo, editGender, editAddress, editEMail,
editQualification, editBranch, editPMark, editLanguages;
   ImageView imagePhoto;
   Button btnUploadPhoto, btnSave, btnCancel;
   SQLiteDatabase db;

   public static EmployeeDB employeeDB;

    final int PICKFILE_RESULT_CODE = 1;

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

      editFName=(EditText)findViewById(R.id.editFName);
      editLName=(EditText)findViewById(R.id.editLName);
      editDOB=(EditText)findViewById(R.id.editDOB);
      editPhoneNo=(EditText)findViewById(R.id.editPhoneNo);
      editGender=(EditText)findViewById(R.id.editGender);
      editAddress=(EditText)findViewById(R.id.editAddress);
      editEMail=(EditText)findViewById(R.id.editEMail);
      editQualification=(EditText)findViewById(R.id.editQualification);
```

```
        editBranch=(EditText)findViewById(R.id.editBranch);
        editPMark=(EditText)findViewById(R.id.editPMark);
        editLanguages=(EditText)findViewById(R.id.editLanguages);

        imagePhoto=(ImageView)findViewById(R.id.imagePhoto);
        btnUploadPhoto=(Button)findViewById(R.id.btnUploadPhoto);
        btnSave=(Button)findViewById(R.id.btnSave);
        btnCancel=(Button)findViewById(R.id.btnCancel);

        imagePhoto.setImageResource(0);

        ActivityCompat.requestPermissions(this,new
String[]{Manifest.permission.READ_EXTERNAL_STORAGE},23);

        employeeDB = new EmployeeDB(this, "RecruitmentDB",null,1);
        employeeDB.queryData("CREATE TABLE IF NOT EXISTS Recruitment(FName
VARCHAR,LName VARCHAR,DOB VARCHAR, " +
                        "PhoneNo VARCHAR, Gender VARCHAR, Address VARCHAR, EMail
VARCHAR, Qualification VARCHAR, " +
                        "Branch VARCHAR, Mark VARCHAR, Languages VARCHAR, Photo
BLOG);");

        btnUploadPhoto.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view){
                ActivityCompat.requestPermissions(MainActivity.this,
                        new String[]{Manifest.permission.READ_EXTERNAL_STORAGE},
                        PICKFILE_RESULT_CODE);
            }
        });

        btnSave.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view){
                try{

employeeDB.insertData(editFName.getText().toString().trim(),editLName.getText().toString().trim()
,
                            editDOB.getText().toString().trim(), editPhoneNo.getText().toString().trim(),
                            editGender.getText().toString().trim(),editAddress.getText().toString().trim(),
                            editEMail.getText().toString().trim(), editQualification.getText().toString().trim(),
                            editBranch.getText().toString().trim(), editPMark.getText().toString().trim(),
                            editLanguages.getText().toString().trim(), imageViewToByte(imagePhoto));
                }
                catch(Exception e){
                    e.printStackTrace();
                }
                Toast.makeText(getApplicationContext(),
                        "Sucess, Data Added to Database", Toast.LENGTH_SHORT).show();
                }
        });

        btnCancel.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
        public void onClick(View view){
            clearText();
        }
        });
    }
    private byte[] imageViewToByte(ImageView image ) {
        Bitmap bitmap = ((BitmapDrawable)image.getDrawable()).getBitmap();
        ByteArrayOutputStream stream = new ByteArrayOutputStream();
        bitmap.compress(Bitmap.CompressFormat.PNG,100,stream);
        byte[] byteArray = stream.toByteArray();
        return byteArray;
    }

    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[] permission,
@NonNull int[] grantResults) {
        if (requestCode == PICKFILE_RESULT_CODE) {
            if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED){
                Intent intent = new Intent(Intent.ACTION_GET_CONTENT);
                intent.setType("*/*");
                startActivityForResult(intent, PICKFILE_RESULT_CODE);
            }
            else {
                Toast.makeText(getApplicationContext(),
                        "You don't have permission to access file location",
                        Toast.LENGTH_SHORT).show();
            }
            return;
        }
        super.onRequestPermissionsResult(requestCode,permission,grantResults);
    }

    @Override
    protected void onActivityResult(int requestCode, int resultCode, Intent data){
        if(requestCode == PICKFILE_RESULT_CODE && resultCode == RESULT_OK && data !=
null) {
            Uri uri = data.getData();
            try {
                InputStream inputStream = getContentResolver().openInputStream(uri);
                Bitmap bitmap = BitmapFactory.decodeStream(inputStream);
                imagePhoto.setImageBitmap(bitmap);
            } catch(FileNotFoundException e){
                e.printStackTrace();
            }
        }
        super.onActivityResult(requestCode,resultCode,data);
    }

    public void clearText()
    {
        editFName.setText("");
        editLName.setText("");
        editDOB.setText("");
```

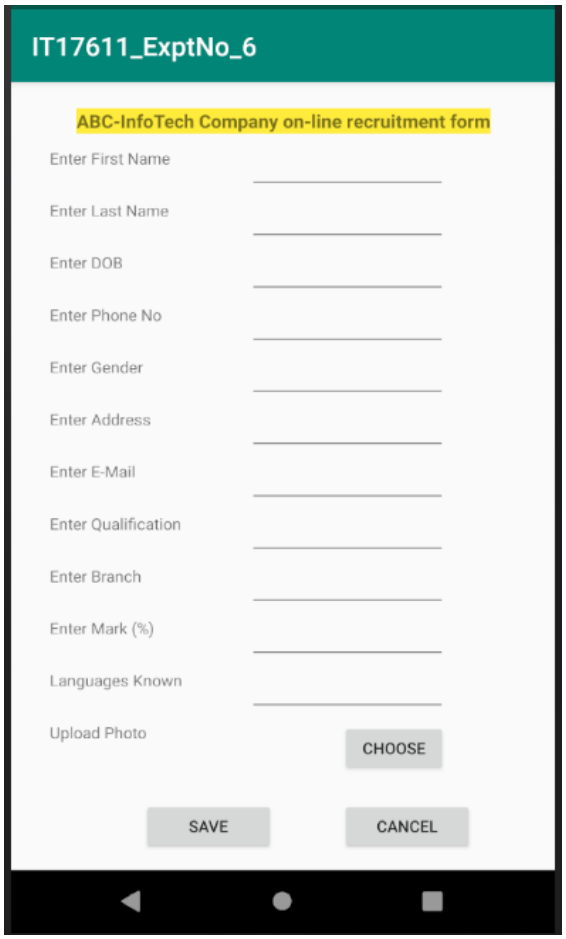
```
        editPhoneNo.setText("");
        editGender.setText("");
        editAddress.setText("");
        editEMail.setText("");
        editQualification.setText("");
        editBranch.setText("");
        editPMark.setText("");
        editLanguages.setText("");
        imagePhoto.setImageBitmap(null);

        editFName.requestFocus();
    }
}
```

EmployeeDB.java

```
package com.example.it17611_exptno_6;

import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.database.sqlite.SQLiteStatement;
import android.os.Build;

public class EmployeeDB extends SQLiteOpenHelper {

    public EmployeeDB(Context context, String name, SQLiteDatabase.CursorFactory factory,int
version){
        super(context, name, factory,version);
    }

    public void queryData(String sql){
        SQLiteDatabase database = getWritableDatabase();
        database.execSQL(sql);
    }

    public void insertData(String FName ,String LName ,String DOB , String PhoneNo , String
Gender ,
                           String Address,String EMail , String Qualification ,String Branch , String Mark ,
String Languages, byte[] Photo ){
        SQLiteDatabase database = getWritableDatabase();
        String sql = "INSERT INTO Recruitment Values(NULL, ?,?,?,?,?,?,?,?,?,?,?)";

        SQLiteStatement  statement = database.compileStatement(sql);
        statement.clearBindings();

        statement.bindString(1,FName);
        statement.bindString(2,LName);
        statement.bindString(3,DOB);
        statement.bindString(4,PhoneNo);
        statement.bindString(5,Gender);
        statement.bindString(6,Address);
        statement.bindString(7,EMail);
```

```
        statement.bindString(8,Qualification);
        statement.bindString(9,Branch);
        statement.bindString(10,Mark);
        statement.bindString(11,Languages);
        statement.bindBlob(12,Photo);

        statement.executeInsert();
    }

    public Cursor getData(String sql){
        SQLiteDatabase database = getReadableDatabase();
        return database.rawQuery(sql,null);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
    }

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

OUTPUT:



RESULT:

Thus, an android application to Create on-line recruitment form for XXX-InfoTech Company was developed successfully.

Expt. No. : 7 **Date :**

Reg. No. :

Design an android activity with a text box (username) where the user can enter a name and another text box (ID) where the user enters only four-digit ID NO and a button “validate”. Validate the entered username and ID field for the following using android code. i) Both the fields should not be empty, ii) Name field should have alphabets, iii) ID field should have numeric

AIM:

To implement an android application to Validate the entered username and ID field.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package=" com.example.it17611_exptno_7">

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

</manifest>
```

activity_main.xml

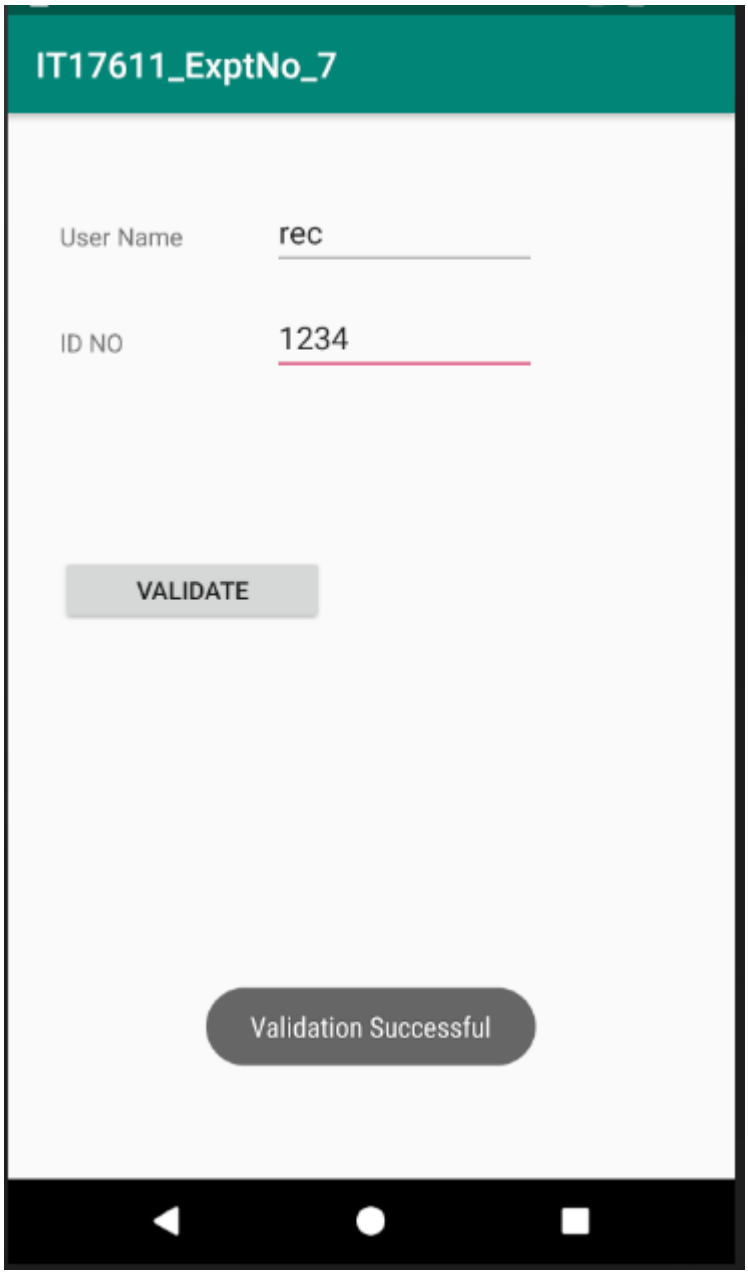
```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"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

   <TextView
      android:text="User Name"
      android:layout_x="30dp"
      android:layout_y="60dp"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"/>

   <EditText
      android:id="@+id/editUName"

      android:layout_x="150dp"
      android:layout_y="50dp"
      android:layout_width="150dp"
      android:layout_height="40dp"/>

   <TextView
      android:text="ID NO"
      android:layout_x="30dp"
      android:layout_y="120dp"
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"/>

    <EditText
        android:id="@+id/editIDNo"

        android:layout_x="150dp"
        android:layout_y="110dp"
        android:layout_width="150dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnValidate"
        android:text="Validate"
        android:layout_x="30dp"
        android:layout_y="250dp"
        android:layout_width="150dp"
        android:layout_height="40dp"/>

</AbsoluteLayout>
```

MainActivity.java

```
package com.example.it17611_exptno_7;

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;

public class MainActivity extends AppCompatActivity {
   EditText editUName, editIDNo;
   Button btnValidate;

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

      editUName=(EditText)findViewById(R.id.editUName);
      editIDNo=(EditText)findViewById(R.id.editIDNo);
      btnValidate=(Button)findViewById(R.id.btnValidate);

      btnValidate.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View view) {
            if(editUName.getText().toString().matches("[a-zA-Z ]+") &&
                        (editIDNo.getText().toString().matches("[\\d]+")&&
                                    editIDNo.getText().toString().trim().length()==4))
               Toast.makeText(getApplicationContext(), "Validation Successful",
               Toast.LENGTH_LONG).show();

            if(editUName.getText().toString().trim().length()==0 ||
                                    editIDNo.getText().toString().trim().length()==0)
               Toast.makeText(getApplicationContext(),"Please enter allvalues",
               Toast.LENGTH_LONG).show();

            if(!(editUName.getText().toString().trim().matches("[a-zA-Z ]+")))
               Toast.makeText(getApplicationContext(),"Please enter only
               alphabets",Toast.LENGTH_LONG).show();

            if(!(editIDNo.getText().toString().trim().matches("[\\d ]+")) ||
                        editIDNo.getText().toString().trim().length()!=4)
               Toast.makeText(getApplicationContext(),"Please enter only four digit number",
               Toast.LENGTH_LONG).show();
         }
      });
   }
}
```

OUTPUT:



RESULT:

Thus, an android application that Validate the entered username and ID field was developed successfully.

Expt. No. : 8 **Date :**

Reg. No. :

Develop an application to get the Latitude, Longitudes of the current location using android Location Manager and also convert the Latitude/Longitude to address format using Geocoder Class.

AIM:

To develop a native application to get the Latitude, Longitudes of the current location using Geocoder Class.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_8">

   <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
   <uses-permission android:name="android.permission.ACCESS_COARSE_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/AppTheme">
       <activity android:name=".MainActivity">
          <intent-filter>
             <action android:name="android.intent.action.MAIN" />
             <category android:name="android.intent.category.LAUNCHER" />
          </intent-filter>
       </activity>
    </application>
</manifest>
```

activity_main.xml

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

    <TextView
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_centerHorizontal="true"
       android:layout_marginTop="50dp"
       android:text="GPS Location"
       android:textStyle="bold"/>

    <TextView
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_marginLeft="20dp"
       android:layout_marginTop="120dp"
       android:text="Longitude and Latitude"
       android:textStyle="bold"/>

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

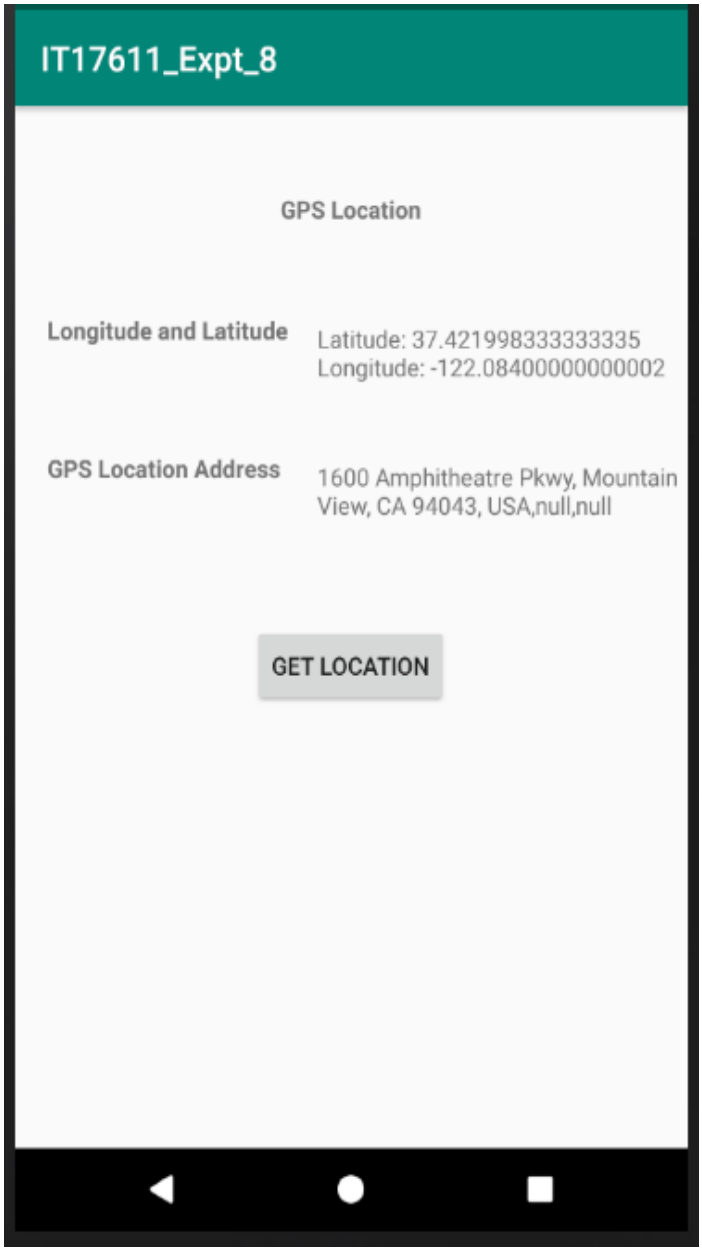
```
        android:layout_marginLeft="180dp"
        android:layout_marginTop="120dp"
        android:text=""
        android:id="@+id/t1"
        android:padding="5dp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="200dp"
        android:text="GPS Location Address"
        android:textStyle="bold" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="180dp"
        android:layout_marginTop="200dp"
        android:text=""
        android:id="@+id/t2"
        android:padding="5dp"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="300dp"
        android:text="Get Location"
        android:id="@+id/b1"/>

</RelativeLayout>
```

MainActivity.java

```
package com.example.it17611_expt_8;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

import android.content.Context;
import android.location.Address;
import android.location.Geocoder;
import android.os.Bundle;

import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

import java.util.List;
import java.util.Locale;

public class MainActivity extends AppCompatActivity implements LocationListener{
   TextView t1, t2;
   Button b1;
   LocationManager LM;

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

      t1 = (TextView)findViewById(R.id.t1);
      t2 = (TextView)findViewById(R.id.t2);
      b1 = (Button)findViewById(R.id.b1);

      if (ContextCompat.checkSelfPermission(getApplicationContext(),
android.Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED &&

ActivityCompat.checkSelfPermission(getApplicationContext(),android.Manifest.permission.ACCES
S_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED)
      {
         ActivityCompat.requestPermissions(this, new
String[]{android.Manifest.permission.ACCESS_FINE_LOCATION,
               android.Manifest.permission.ACCESS_COARSE_LOCATION}, 101);
      }
      b1.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            getLocation();
```

```
        }
      });

   }
   void getLocation() {
      try {
         LM = (LocationManager)
               getSystemService(Context.LOCATION_SERVICE);
         LM.requestLocationUpdates(LocationManager.NETWORK_PROVIDER, 5000,5, this);
      }
      catch(SecurityException e) {
         e.printStackTrace();
      }
   }
   @Override
   public void onLocationChanged(Location location) {
      t1.setText("Latitude: " + location.getLatitude() + "\nLongitude: " +  location.getLongitude());
      try {
         Geocoder geocoder = new Geocoder(this, Locale.getDefault());
         List<Address> addresses = geocoder.getFromLocation(location.getLatitude(),
location.getLongitude(), 1);
         t2.setText(addresses.get(0).getAddressLine(0)+","+
addresses.get(0).getAddressLine(1)+","+addresses.get(0).getAddressLine(2));
         //t1.getText() + "\n" +
      }catch(Exception e)
      {
      }
   }
   @Override
   public void onProviderDisabled(String provider) {
      Toast.makeText(MainActivity.this, "Please Enable GPS and Internet",
Toast.LENGTH_SHORT).show();
   }
   @Override
   public void onStatusChanged(String provider, int status, Bundle extras) {
   }
   @Override
   public void onProviderEnabled(String provider) {
   }
}
```

OUTPUT:



RESULT:

Thus, a native application that uses GPS location information using android studio and sdk was developed successfully.

Expt. No. : 9 **Date :**

Reg. No. :

Implement an application to write the name and marks to SD card in text file format.

AIM:

To implement an android application that writes data (name and marks) to the SD card in text file format using android studio and sdk.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_9">

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

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:textSize="40px"
        android:text="Read and Write Data in SD Card"
        android:id="@+id/textView" />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="200dp"
        android:layout_marginTop="30dp"
        android:id="@+id/E1" />
    <Button
        android:text="Save"
        android:layout_width="75dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="0dp"
        android:layout_marginTop="230dp"
        android:id="@+id/B1" />
    <Button
```

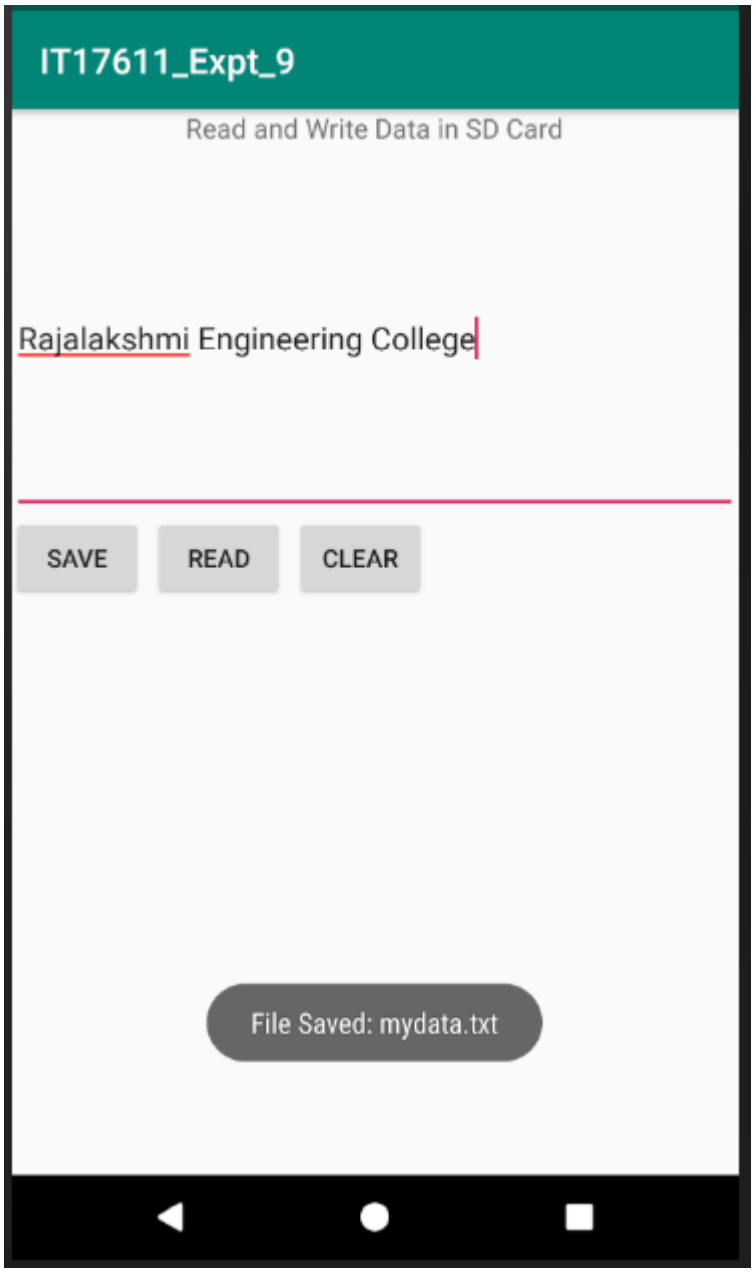
```
        android:text="Read"
        android:layout_width="75dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="80dp"
        android:layout_marginTop="230dp"
        android:id="@+id/B2" />
    <Button
        android:text="Clear"
        android:layout_width="75dp"
        android:layout_height="wrap_content"
        android:layout_marginLeft="160dp"
        android:layout_marginTop="230dp"
        android:id="@+id/B3" />
</RelativeLayout>
```

MainActivity.java

```
package com.example.it17611_expt_9;

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.FileInputStream;
import java.io.FileOutputStream;


public class MainActivity extends AppCompatActivity {
    EditText E1;
    Button B1,B2,B3;
    String data;
    String filename="mydata.txt";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        E1 = (EditText) findViewById(R.id.E1);
        B1 = (Button) findViewById(R.id.B1);
        B2 = (Button) findViewById(R.id.B2);
        B3 = (Button) findViewById(R.id.B3);
        E1.setHint("Enter Some Text Here");

        B1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                writeData();
            }
        });
        B2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                readData();
            }
        });
        B3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                E1.setText("");
            }
        });
    }
    public void writeData()
    {
        String data=E1.getText().toString();try
    {
```

```
        FileOutputStream fos=openFileOutput(filename,MODE_PRIVATE);
        fos.write(data.getBytes());
        fos.close();
        Toast.makeText(getApplicationContext(),"File Saved: "
                + filename,Toast.LENGTH_LONG).show();
    }
    catch (Exception e)
    {
        Toast.makeText(getApplicationContext(),e.getMessage(),
                Toast.LENGTH_LONG).show();
    }
    }
    public void readData()
    {
        int c;
        String temp="";
        try
        {
            FileInputStream fis=openFileInput(filename);
            while((c=fis.read())!=-1)
            {
                temp=temp+Character.toString((char)c);
            }
            E1.setText(temp);
            Toast.makeText(getApplicationContext(), "File Read: "
                    + filename, Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
            Toast.makeText(getApplicationContext(),
                    e.getMessage(), Toast.LENGTH_LONG).show();
        }
    }
}
```

OUTPUT:



RESULT:

Thus, an android application to writes data to the SD card using android studio and sdk was implemented successfully.

Expt. No. : 10 **Date :**

Reg. No. :

Implement an application to display the alert box message when your application receives the SMS.

AIM:

To implement an android application to display the alert box message when your application receives the SMS.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_10">

    <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/AppTheme">

        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Alert Box"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp"
        android:textSize="30sp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="150dp"
        android:text=" Type Message"
        android:textSize="20sp" />
```

```
    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="200dp"
        android:singleLine="true"
        android:textSize="20sp" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="300dp"
        android:text="Alert"
        android:textSize="20sp"/>

</RelativeLayout>
```

activity_sms_aler.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="150dp"
        android:text=""
        android:id="@+id/showmsg"
        android:textSize="20sp" />

</RelativeLayout>
```

MainActivity.java

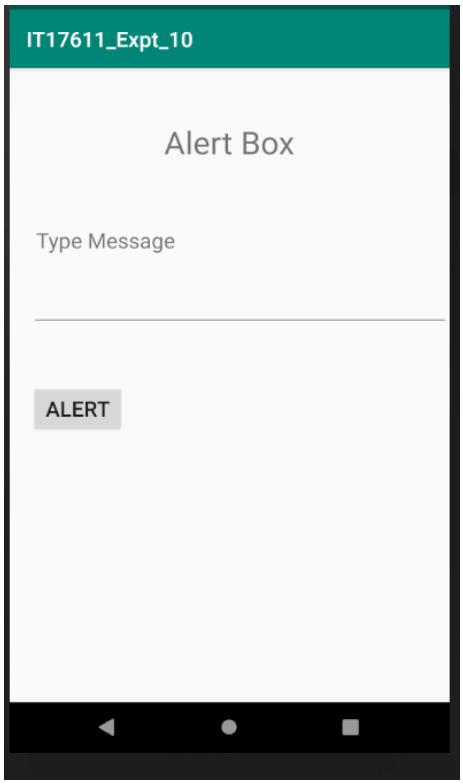
```
package com.example.it17611_expt_10;

import androidx.appcompat.app.AppCompatActivity;

import android.app.AlertDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.content.Intent;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
{
   Button notify;
   EditText sms;

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

      notify= (Button) findViewById(R.id.button);
      sms= (EditText) findViewById(R.id.editText);
      builder = new AlertDialog.Builder(this);

      notify.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            final String message =  sms.getText().toString();
            if(message != "") {
               builder.setMessage(message).setTitle("New Message");
               builder.setMessage(message)
                     .setCancelable(false)
                     .setPositiveButton("OK", new DialogInterface.OnClickListener() {
                        public void onClick(DialogInterface dialog, int id) {
                           Intent smsIntent = new Intent(MainActivity.this, SmsAlert.class);
                           smsIntent.putExtra("sms", message);
                           startActivity(smsIntent);
                           finish();
                        }
                     });
               AlertDialog alert = builder.create();
               alert.setTitle("New Message");
               alert.show();

            }
```

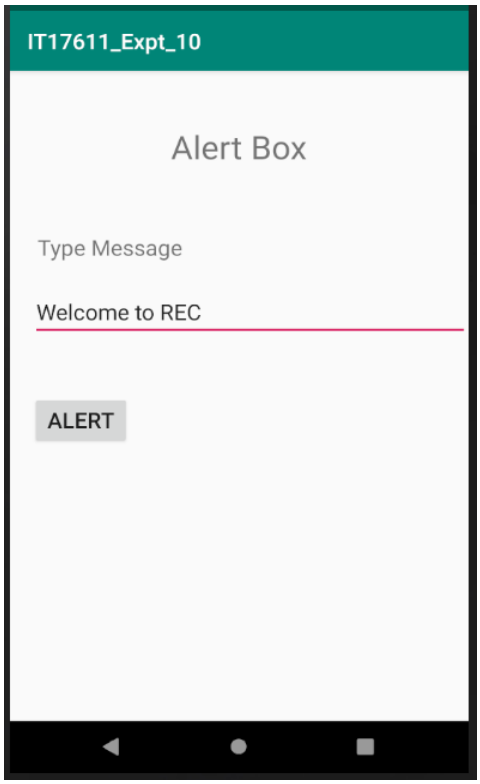
```
            else{
                Toast.makeText(getApplicationContext(),
                        "Type Message in Message Box",Toast.LENGTH_LONG).show();
              }
            }
        });
    }
}
```

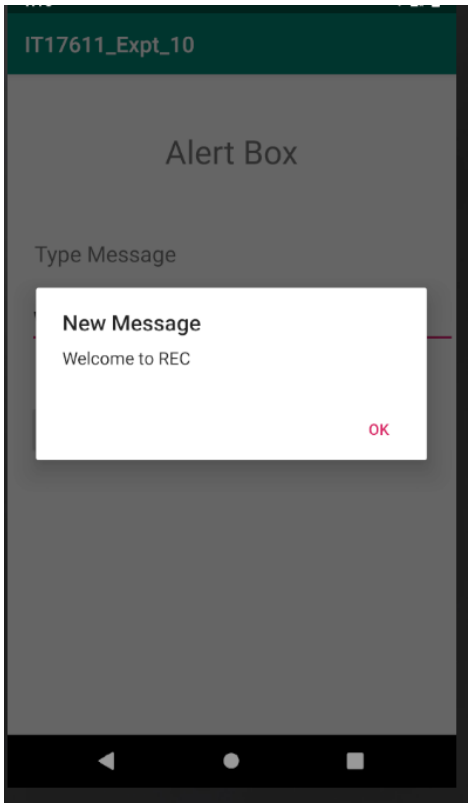
SmsAlert.java

```
package com.example.it17611_expt_10;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.TextView;

public class SmsAlert extends AppCompatActivity {

    TextView showmsg;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_sms_alert);
        showmsg = findViewById(R.id.showmsg);

        Bundle extras = getIntent().getExtras();
        showmsg.setText(extras.getString("sms"));
    }
}
```

OUTPUT:







RESULT:

Thus, an android application to display the alert box message when your application receives the SMS was implemented successfully.

Expt. No. : 11 **Date :**

Reg. No. :

Write a mobile application to set the alarm using android Alarm Manager class and also snooze the alarm after every 10 minutes.

AIM:

To develop an android application to set the alarm using android Alarm Manager class and also snooze the alarm after every 10 minutes.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_11">

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
            <receiver android:name=".AlarmReceiver" />
    </application>
</manifest>
```

activity_main.xml

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


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

    <Button
        android:id="@+id/btnSet"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="400dp"
        android:layout_marginLeft="60dp"
        android:text="Set Alaram"/>

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

```
        android:layout_gravity="center"
        android:layout_marginTop="400dp"
        android:layout_marginLeft="230dp"
        android:text="Stop Alaram"/>

</RelativeLayout>
```

MainActivity.java

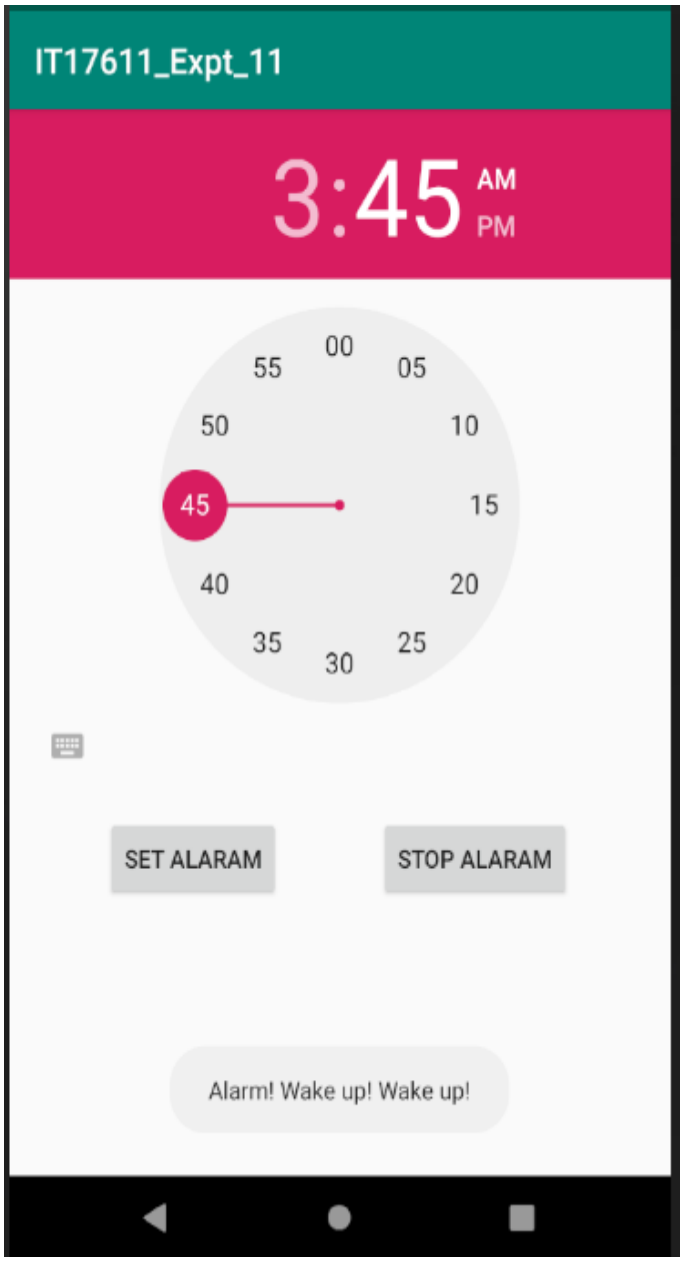
```
package com.example.it17611_expt_11;

import android.app.Activity;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TimePicker;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity
{
   TimePicker alarmTimePicker;
   PendingIntent pendingIntent;
   AlarmManager alarmManager;
   Button btnSet, btnStop;

   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      alarmTimePicker = (TimePicker) findViewById(R.id.timePicker);
      btnSet = (Button)findViewById(R.id.btnSet);
      btnStop = (Button)findViewById(R.id.btnStop);
      alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);

      btnSet.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            long time;
            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());

            time=(calendar.getTimeInMillis()-(calendar.getTimeInMillis()%60000));
            //time = calendar.getTimeInMillis() + 600000;
            AlarmManager am = (AlarmManager) getSystemService(Activity.ALARM_SERVICE);
```

```
            Intent intent = new Intent(MainActivity.this, AlarmReceiver.class);
            pendingIntent = PendingIntent.getBroadcast(MainActivity.this, 1, intent, 0);

            //alarmManager.setRepeating(AlarmManager.RTC_WAKEUP, time, 10000,
pendingIntent);
            alarmManager.set(AlarmManager.RTC_WAKEUP, time, pendingIntent);
        }
    });

    btnStop.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            alarmManager.cancel(pendingIntent);
            Toast.makeText(MainActivity.this, "ALARM OFF", Toast.LENGTH_SHORT).show();
        }
    });
  }
}
```

AlarmReceiver.java

```
package com.example.it17611_expt_11;

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();

  }
}
```

OUTPUT:



RESULT:

Thus, an android application to set the alarm using android Alarm Manager class and also snooze the alarm after every 10 minutes was developed successfully.

Expt. No. : 12 **Date :**

Reg. No. :

Develop an application to send and receive messages using SMS Manger class

AIM:

To develop an android application to send and receive messages using SMS Manger class.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_12">

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

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name=".SmsReceiver">      </activity>
    </application>
</manifest>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SMS Application"
        android:layout_marginTop="30dp"
        android:layout_centerHorizontal="true"
        android:textSize="30dp" />

    <EditText
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:id="@+id/editText"
        android:hint="Enter Phone Number"
        android:layout_marginTop="150dp"
        android:layout_marginLeft="50dp"/>
```

```
    <EditText
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:id="@+id/editText2"
        android:hint="Enter SMS"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="250dp"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send SMS"
        android:id="@+id/btnSendSMS"
        android:layout_marginTop="350dp"
        android:layout_centerHorizontal="true" />

</RelativeLayout>
```

activity_sms_receiver.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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="180dp"
        android:layout_marginLeft="50dp"
        android:text=""
        android:id="@+id/receiveSMS"/>
</RelativeLayout>
```

MainActivity.java

```
package com.example.it17611_expt_12;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
```

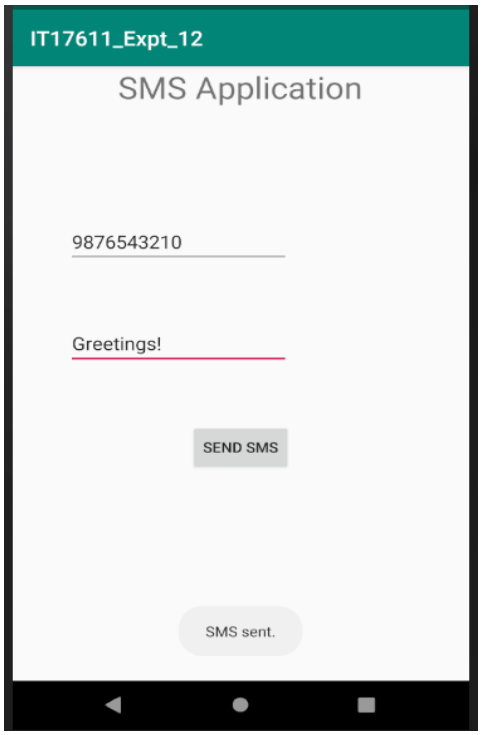
```
public class MainActivity extends AppCompatActivity {

    EditText txtphoneNo, txtMessage;
    Button sendSMS;
    String phoneNo, message;

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

        sendSMS = (Button) findViewById(R.id.btnSendSMS);
        txtphoneNo = (EditText) findViewById(R.id.editText);
        txtMessage = (EditText) findViewById(R.id.editText2);

        sendSMS.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                phoneNo = txtphoneNo.getText().toString();
                message = txtMessage.getText().toString();
                try {
                    SmsManager smsManager = SmsManager.getDefault();
                    smsManager.sendTextMessage(phoneNo, null, message, null, null);
                    Toast.makeText(getApplicationContext(), "SMS sent.",
                            Toast.LENGTH_LONG).show();
                    Intent smsIntent = new Intent(MainActivity.this, SmsReceiver.class);
                    smsIntent.putExtra("address", phoneNo);
                    smsIntent.putExtra("sms_body", message);
                    //startActivity(smsIntent);

                    NotificationManager smsnm = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
                    final String CHANNEL_ID = "my_channel_01";

                    CharSequence name = "my_notification";
                    NotificationChannel smsnc = new NotificationChannel(CHANNEL_ID, name,
NotificationManager.IMPORTANCE_DEFAULT);
                    smsnc.setDescription("New Notification");
                    smsnm.createNotificationChannel(smsnc);

                    PendingIntent pi = PendingIntent.getActivity(MainActivity.this, 0, smsIntent,
PendingIntent.FLAG_UPDATE_CURRENT);
                    smsIntent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK |
Intent.FLAG_ACTIVITY_CLEAR_TASK);

                    NotificationCompat.Builder builder=new
NotificationCompat.Builder(MainActivity.this,CHANNEL_ID)
                            .setContentTitle("New Message from "+phoneNo)
                            .setContentText(message)
                            .setSmallIcon(R.mipmap.ic_launcher)
                            .setContentIntent(pi)
```

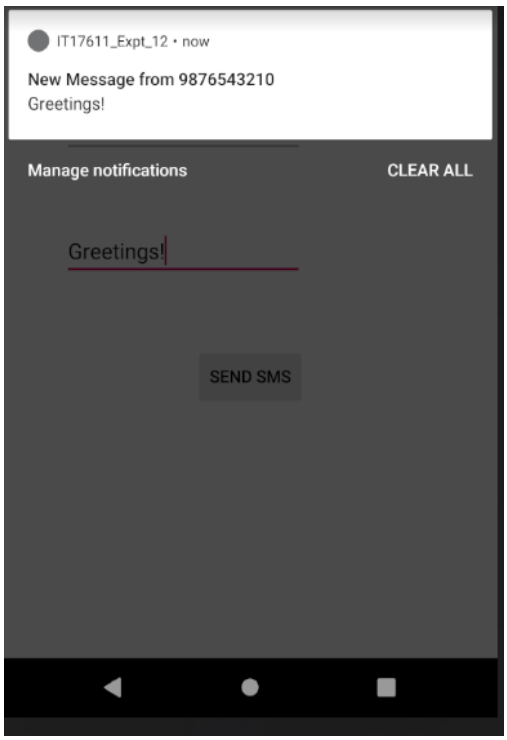
```
                    .setAutoCancel(true);
                smsnm.notify(1,builder.build());
            } catch (Exception e) {
                Toast.makeText(getApplicationContext(),
                    "Sending SMS failed.",
                    Toast.LENGTH_LONG).show();
                e.printStackTrace();
            }
        }
      });
   }
}
```

SmsReceiver.java

```
package com.example.it17611_expt_12;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;


public class SmsReceiver extends AppCompatActivity
{
   TextView receiveSMS;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_sms_receiver);

      receiveSMS = (TextView)findViewById(R.id.receiveSMS);

      Bundle extras = getIntent().getExtras();
      this.setTitle(extras.getString("address"));
      receiveSMS.setText(extras.getString("sms_body"));
   }
}
```

OUTPUT:





RESULT:

Thus, an android application to send and receive messages using SMS Manger class was developed successfully.

Expt. No. : 13 **Date :**

Reg. No. :

Develop an android application to take the screen shot while you shake your mobile phone.

AIM:

To develop an android application to take the screen shot while you shake your mobile phone.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_13">

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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="#E8C661"
    android:id="@+id/main"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="fill_parent"
        android:layout_height="40dp"
        android:layout_marginTop="20dp"
        android:textAlignment="center"
        android:textSize="30dp"
        android:textStyle="bold"
        android:textColor="#FFFFFF"
        android:background="#FF5722"
        android:text="Screen Capturing"/>

    <ImageView
        android:layout_width="230dp"
        android:layout_height="350dp"
        android:id="@+id/screenShot"
        android:src="@drawable/ic_launcher_foreground"
```

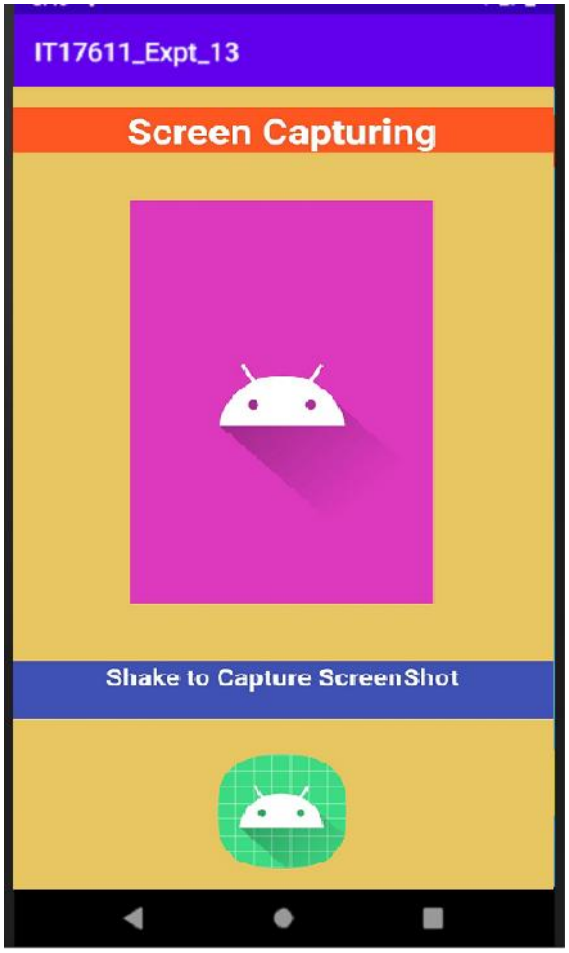
```
        android:layout_centerHorizontal="true"
        android:layout_marginTop="100dp"
        android:background="#DC39BE"
        android:padding="5dp"
        android:contentDescription="@string/app_name"/>

    <TextView
        android:layout_width="fill_parent"
        android:layout_height="50dp"
        android:layout_marginTop="500dp"
        android:text="Shake to Capture ScreenShot"
        android:textSize="20dp"
        android:textStyle="bold"
        android:textAlignment="center"
        android:background="#3F51B5"
        android:textColor="#FCFBFF" />

    <ImageView
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:src="@mipmap/ic_launcher"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="580dp"
        android:contentDescription="@string/app_name"/>

</RelativeLayout>
```

MainActivity.java

```
package com.example.it17611_expt_13;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.RelativeLayout;
import android.widget.Toast;

import java.util.Objects;

public class MainActivity extends AppCompatActivity {
    private SensorManager mSensorManager;
    private float mAccel;
    private float mAccelCurrent;
    private float mAccelLast;
    private RelativeLayout relativeLayout;
    Bitmap capture;
    ImageView imageView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        relativeLayout = (RelativeLayout) findViewById(R.id.main);
        imageView = (ImageView) findViewById(R.id.screenShot);
        mSensorManager = (SensorManager) getSystemService(Context.SENSOR_SERVICE);

        Objects.requireNonNull(mSensorManager).registerListener(mSensorListener,
mSensorManager.getDefaultSensor(Sensor.TYPE_ACCELEROMETER),
                SensorManager.SENSOR_DELAY_NORMAL);
        mAccel = 10f;
        mAccelCurrent = SensorManager.GRAVITY_EARTH;
        mAccelLast = SensorManager.GRAVITY_EARTH;
    }
    private final SensorEventListener mSensorListener = new SensorEventListener() {
        @Override
        public void onSensorChanged(SensorEvent event) {
            float x = event.values[0];
            float y = event.values[1];
            float z = event.values[2];
            mAccelLast = mAccelCurrent;
            mAccelCurrent = (float) Math.sqrt((double) (x * x + y * y + z * z));
```

```
            float delta = mAccelCurrent - mAccelLast;
            mAccel = mAccel * 0.9f + delta;
            if (mAccel > 12) {
                relativeLayout.post(new Runnable() {
                    public void run() {
                        capture = captureScreen(relativeLayout);
                        imageView.setImageBitmap(capture);
                        imageView.setBackgroundColor(Color.BLUE);
                    }
                });
                Toast.makeText(getApplicationContext(), "Screenshot captured..!",
Toast.LENGTH_LONG).show();
            }
        }
        @Override
        public void onAccuracyChanged(Sensor sensor, int accuracy) {
        }
    };
    @Override
    protected void onResume() {
        mSensorManager.registerListener(mSensorListener,
mSensorManager.getDefaultSensor(Sensor.TYPE_ACCELEROMETER),
                SensorManager.SENSOR_DELAY_NORMAL);
        super.onResume();
    }
    @Override
    protected void onPause() {
        mSensorManager.unregisterListener(mSensorListener);
        super.onPause();
    }
    public Bitmap captureScreen(View v) {
        Bitmap screenshot = null;
        try {
            if (v != null) {
                screenshot = Bitmap.createBitmap(v.getMeasuredWidth(), v.getMeasuredHeight(),
Bitmap.Config.ARGB_8888);
                Canvas canvas = new Canvas(screenshot);
                v.draw(canvas);
            }
        } catch (Exception e) {
            Toast.makeText(getApplicationContext(), e.getMessage(), Toast.LENGTH_LONG).show();
        }
        return screenshot;
    }
}
```

OUTPUT:



RESULT:

Thus, an android application to take the screen shot while you shake your mobile phone was developed successfully.

Expt. No. : 14 **Date :**

Reg. No. :

Create a Database table with the following structure using MySQL External Storage: Employee (Empno, Empname, Empid, Empslary, Empaddress). Develop an android application to perform the following operation using MySQL developer classes. i.) Insert Emp Details, ii.) Update the emp Record, iii.) Delete the emp record by empid, iv.) View the details.

AIM:

To develop an android application, for creating a Database table with the following structure using MySQL External Storage: Employee (Empno, Empname, Empid, Empslary, Empaddress).

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_14">

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

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout 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:text="Employee Details"
        android:layout_x="150dp"
        android:layout_y="20dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <TextView
        android:text="Enter Emp No"
        android:layout_x="30dp"
        android:layout_y="60dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
```

```
<EditText
   android:id="@+id/editEmpno"
   android:layout_x="150dp"
   android:layout_y="50dp"
   android:layout_width="150dp"
   android:layout_height="40dp"/>

<TextView
   android:text="Enter Emp Name"
   android:layout_x="30dp"
   android:layout_y="120dp"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"/>

<EditText
   android:id="@+id/editEmpname"
   android:layout_x="150dp"
   android:layout_y="110dp"
   android:layout_width="150dp"
   android:layout_height="40dp"/>

<TextView
   android:text="Enter Emp Salary"
   android:layout_x="30dp"
   android:layout_y="180dp"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"/>

<EditText
   android:id="@+id/editEmpsalary"
   android:layout_x="150dp"
   android:layout_y="170dp"
   android:layout_width="150dp"
   android:layout_height="40dp"/>

<TextView
   android:text="Enter Address"
   android:layout_x="30dp"
   android:layout_y="250dp"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"/>

<EditText
   android:id="@+id/editAddress"
   android:layout_x="150dp"
   android:layout_y="240dp"
   android:layout_width="150dp"
   android:layout_height="40dp"/>
```

```
    <Button
        android:id="@+id/btnInsert"
        android:text="Insert"
        android:layout_x="30dp"
        android:layout_y="350dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnUpdate"
        android:text="Update"
        android:layout_x="140dp"
        android:layout_y="350dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnDelete"
        android:text="Delete"
        android:layout_x="250dp"
        android:layout_y="350dp"
        android:layout_width="100dp"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnView"
        android:text="View Record"
        android:layout_x="30dp"
        android:layout_y="450dp"
        android:layout_width="wrap_content"
        android:layout_height="40dp"/>

    <Button
        android:id="@+id/btnViewAll"
        android:text="View All Record"
        android:layout_x="160dp"
        android:layout_y="450dp"
        android:layout_width="wrap_content"
        android:layout_height="40dp"/>

</AbsoluteLayout>
```

MainActivity.java

```
package com.example.it17611_expt_14;

import androidx.appcompat.app.AppCompatActivity;

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

import java.sql.*;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    EditText editEmpno, editEmpName, editEmpsalary, editAddress;
    Button btnInsert, btnUpdate, btnDelete, btnView, btnViewAll;
    String empno,empname,empsal,empaddr;
    //Create database and table in MySQL
    //CREATE DATABASE EmployeeDetails;
    //USE EmployeeDetails;
    //CREATE TABLE Employee(Empno varchar(10),Empname  varchar(25), Empsalary
varchar(10), Address  varchar(50));

    private static final String url = "jdbc:mysql://192.168.29.145:3306/EmployeeDetails";
    private static final String user = "myuser";
    private static final String pass = "myuser";

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

        editEmpno =  findViewById(R.id.editEmpno);
        editEmpName =  findViewById(R.id.editEmpname);
        editEmpsalary =  findViewById(R.id.editEmpsalary);
        editAddress =  findViewById(R.id.editAddress);
        btnInsert =  findViewById(R.id.btnInsert);
        btnUpdate =  findViewById(R.id.btnUpdate);
        btnDelete =  findViewById(R.id.btnDelete);
        btnView =  findViewById(R.id.btnView);
        btnViewAll =  findViewById(R.id.btnViewAll);

        btnInsert.setOnClickListener(this);
        btnUpdate.setOnClickListener(this);
        btnDelete.setOnClickListener(this);
        btnView.setOnClickListener(this);
        btnViewAll.setOnClickListener(this);
    }
```

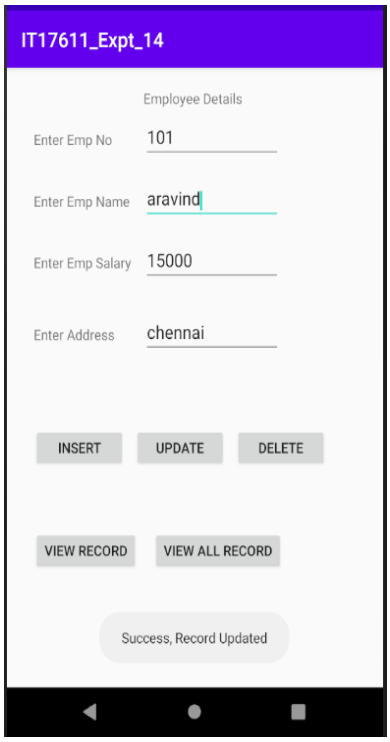
```
    public void onClick(android.view.View view){
        if(view==btnInsert)
            new Insert().execute();
        if(view==btnUpdate)
            new Update().execute();
        if(view==btnDelete)
            new Delete().execute();
        if(view==btnView)
            new View().execute();
        if(view==btnViewAll)
            new ViewAll().execute();
    }
    class Insert extends AsyncTask<Void, Void, Void> {
        String records = "", error = "";
        @Override
        protected void onPreExecute() {
            super.onPreExecute();
            empno = "" + editEmpno.getText().toString().trim();
            empname = "" + editEmpName.getText().toString().trim();
            empsal = "" + editEmpsalary.getText().toString().trim();
            empaddr = "" + editAddress.getText().toString().trim();
        }
        @Override
        protected Void doInBackground(Void... voids) {
            try {
                Class.forName("com.mysql.jdbc.Driver").newInstance();
                Connection conn = DriverManager.getConnection(url, user,pass);
                Statement stmt = conn.createStatement();
                stmt.executeUpdate("INSERT INTO Employee(Empno,Empname,Empsalary,Address)
VALUES ('" + empno + "','" + empname +
                        "','" + empsal + "','" + empaddr + "');");
                records = "Success, Records Added...";
            }catch(Exception e){
                error = e.toString();
            }
            return null;
        }
        @Override
        protected void onPostExecute(Void aVoid) {
            if(error != "")
                showMessage ("Error", error);
            else
                Toast.makeText(getApplicationContext(), records, Toast.LENGTH_LONG).show();
            //clearText ();
            super.onPostExecute(aVoid);
        }
    }

    class Update extends AsyncTask<Void, Void, Void> {
        String records = "", error = "";
        @Override
        protected void onPreExecute() {
            super.onPreExecute();
```

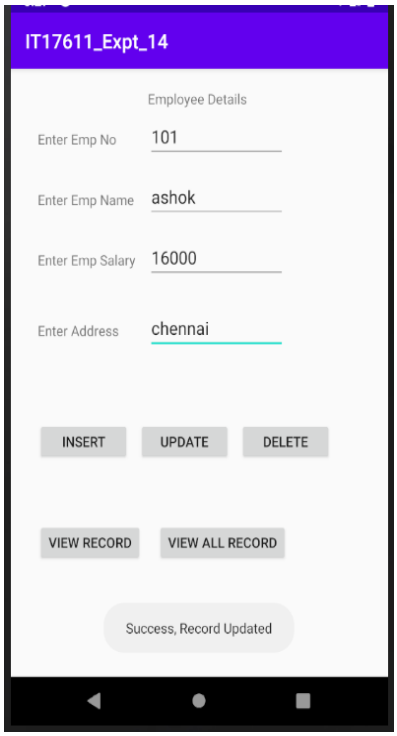
```
            empno = "" + editEmpno.getText().toString().trim();
            empname = "" + editEmpName.getText().toString().trim();
            empsal = "" + editEmpsalary.getText().toString().trim();
            empaddr = "" + editAddress.getText().toString().trim();
        }
        @Override
        protected Void doInBackground(Void... voids) {
            try {
                Class.forName("com.mysql.jdbc.Driver").newInstance();
                Connection conn = DriverManager.getConnection(url, user,pass);
                Statement stmt = conn.createStatement();
                stmt.executeUpdate("UPDATE Employee SET Empname='" + empname +
'',Empsalary='" + empsal +
                        "',Address='" + empaddr + "' WHERE Empno='" + empno + "'");
                records = "Success, Record Updated";
            }catch(Exception e){
                error = e.toString();
            }
            return null;
        }
        @Override
        protected void onPostExecute(Void aVoid) {
            if(error != "")
                showMessage ("Error", error);
            else
                Toast.makeText(getApplicationContext(), records, Toast.LENGTH_LONG).show();
            //clearText ();
            super.onPostExecute(aVoid);
        }
    }

    class Delete extends AsyncTask<Void, Void, Void> {
        String records = "", error = "";
        protected void onPreExecute() {
            super.onPreExecute();
            empno = "" + editEmpno.getText().toString().trim();
        }
        @Override
        protected Void doInBackground(Void... voids) {
            try {
                Class.forName("com.mysql.jdbc.Driver").newInstance();
                Connection conn = DriverManager.getConnection(url, user,pass);
                Statement stmt = conn.createStatement();
                stmt.executeUpdate("DELETE FROM Employee WHERE Empno='" + empno + "'");
                records = "Success, Record Deleted...";
            }catch(Exception e) {
                error = e.toString();
            }
            return null;
        }
        @Override
        protected void onPostExecute(Void aVoid) {
            if(error != "")
                showMessage ("Error", error);
```

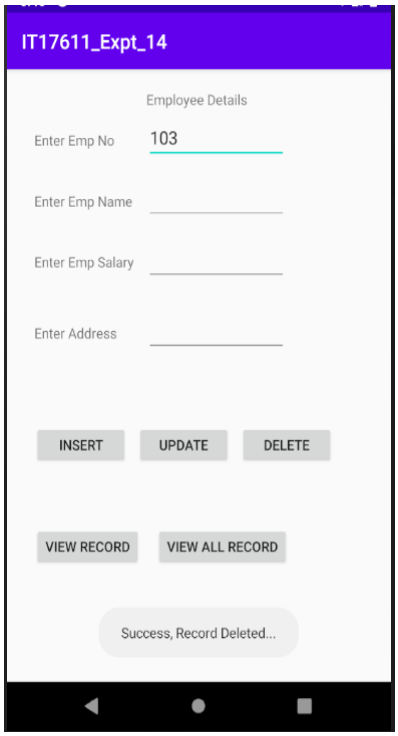
```
            else
               Toast.makeText(getApplicationContext(), records, Toast.LENGTH_LONG).show();
            //clearText ();
            super.onPostExecute(aVoid);
         }
      }
      class View extends AsyncTask<Void, Void, Void> {
         String records = "", error = "";
         @Override
         protected void onPreExecute() {
            super.onPreExecute();
            empno = "" + editEmpno.getText().toString().trim();
         }
         @Override
         protected Void doInBackground(Void... voids) {
            try {
               Class.forName("com.mysql.jdbc.Driver").newInstance();
               Connection conn = DriverManager.getConnection(url, user,pass);
               Statement stmt = conn.createStatement();
               ResultSet rs = stmt.executeQuery("SELECT * FROM Employee WHERE Empno='" +
empno + "'");
               while(rs.next())
                  records += "Employee Detail\nEmpno= " + rs.getString(1) + "\nEmpname= " +
rs.getString(2) +
                        "\nEmpSalary= " + rs.getString(3) + "\nAddress= " + rs.getString(4) + "\n";
            }catch(Exception e){
               error = e.toString();
            }
            return null;
         }
         @Override
         protected void onPostExecute(Void aVoid) {
            if(error != "")
               showMessage ("Error", error);
            else
               showMessage ("Employee Details", records);
            //clearText ();
            super.onPostExecute(aVoid);
         }
      }
      class ViewAll extends AsyncTask<Void, Void, Void> {
         String records = "", error = "";
         int count=0;
         @Override
         protected Void doInBackground(Void... voids) {
            try {
               Class.forName("com.mysql.jdbc.Driver").newInstance();
               Connection conn = DriverManager.getConnection(url, user, pass);
               Statement stmt = conn.createStatement();
               ResultSet rs = stmt.executeQuery("SELECT * FROM Employee");
               while (rs.next())
                  records += ++count +". \nEmpno= " + rs.getString(1) + "\nEmpname= " +
rs.getString(2) +
                        "\nEmpSalary= " + rs.getString(3) + "\nAddress= " + rs.getString(4) + "\n";
```

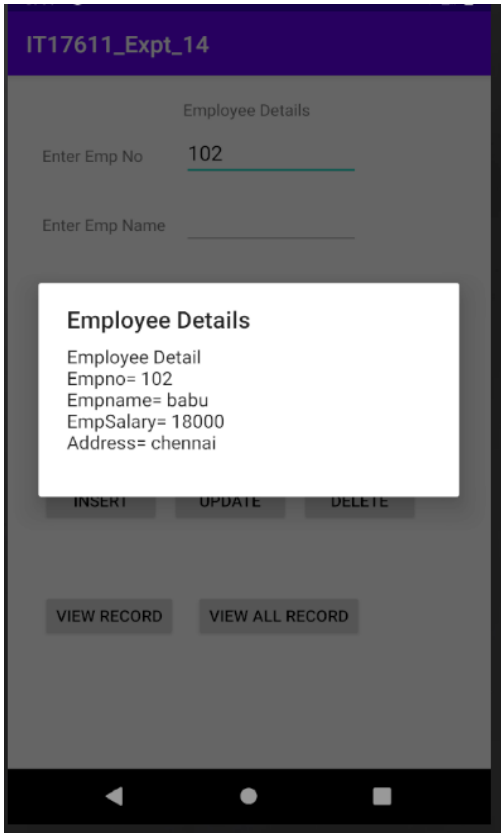
```
            }
            catch(Exception e)
            {
                error = e.toString();
            }
            return null;
        }
        @Override
        protected void onPostExecute(Void aVoid) {
            if(error != "")
                showMessage ("Error", error);
            else
                showMessage ("Employee Details", records);
            //clearText ();
            super.onPostExecute(aVoid);
        }
    }

    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();
    }

    public void clearText ()
    {
        editEmpno.setText("");
        editEmpName.setText("");
        editEmpsalary.setText("");
        editAddress.setText("");
        editEmpno.requestFocus();
    }
}
```

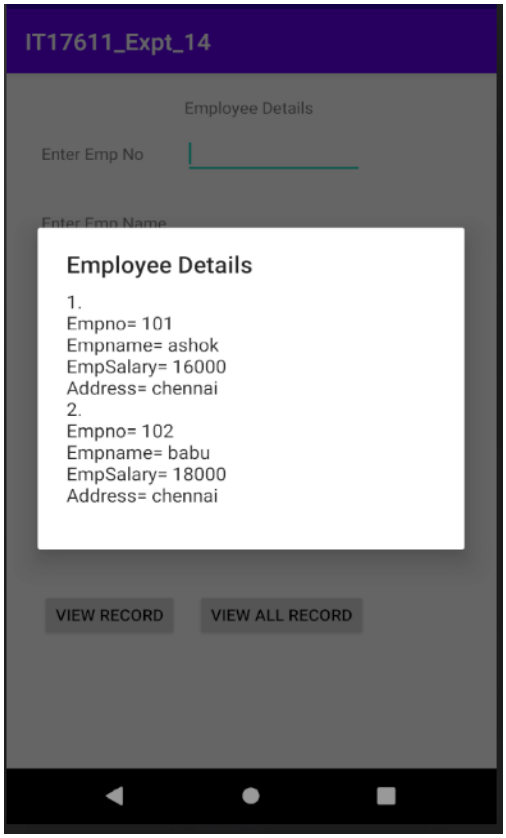
OUTPUT:











RESULT:

Thus, an android application to Create a Database table with the following structure using MySQL External Storage was developed successfully.

Expt. No. : 15 **Date :**

Reg. No. :

Develop an android application to display the information of the telephony services.

Date:

AIM:

To develop an android application to set the alarm using android Alarm Manager class and also snooze the alarm after every 10 minutes.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_15">

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

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

        <service
            android:name=".MyService"
            android:enabled="true"
            android:exported="true"/>
    </application>
 </manifest>
```

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginLeft="125dp"
        android:layout_marginTop="20dp"
        android:text="Telephony Service"
        android:textSize="20dp"
        android:textStyle="bold" />
```

```
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="150dp"
        android:text="Phone Details:" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btnPhoneDetails"
        android:text="Get Phone Details"
        android:layout_marginTop="70dp"
        android:layout_centerHorizontal="true"
        android:onClick="Start"/>

</RelativeLayout>
```

MainActivity.java

```
package com.example.it17611_expt_15;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

import android.Manifest;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.content.Context;
import android.telephony.TelephonyManager;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {
    TextView textView1;
    Button btnPhoneDetails;
    String info, strPhoneType = "";
    static final int PERMISSION_READ_STATE = 123;


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

```
    }

    public void Start(View view) {
        int permission = ContextCompat.checkSelfPermission(this,
Manifest.permission.READ_PHONE_STATE);

        if (permission == PackageManager.PERMISSION_GRANTED) {
            MyTelephonyManager();
        } else {
            ActivityCompat.requestPermissions(this, new
String[]{Manifest.permission.READ_PHONE_STATE}, PERMISSION_READ_STATE);
        }
    }

    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions,
@NonNull int[] grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);

        switch (requestCode) {
            case PERMISSION_READ_STATE: {
                if (grantResults.length >= 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
                    MyTelephonyManager();
                } else {
                    Toast.makeText(this, "You don't have required permission",
Toast.LENGTH_SHORT).show();
                }
            }
        }
    }

    private void MyTelephonyManager() {
        TelephonyManager tm = (TelephonyManager)
getSystemService(Context.TELEPHONY_SERVICE);

        int phoneType = tm.getPhoneType();
        switch (phoneType) {
            case TelephonyManager.PHONE_TYPE_CDMA:
                strPhoneType = "CDMA";
                break;
            case TelephonyManager.PHONE_TYPE_GSM:
                strPhoneType = "GSM";
                break;
            case TelephonyManager.PHONE_TYPE_NONE:
                strPhoneType = "NONE";
                break;
        }

        boolean isRoaming = tm.isNetworkRoaming();


        String PhoneType = strPhoneType;
        String IMEINumber = tm.getImei();
```

```
        String subscriberID=tm.getSubscriberId();
        String SIMSerialNumber=tm.getSimSerialNumber();
        String networkCountryISO=tm.getNetworkCountryIso();
        String SIMCountryISO=tm.getSimCountryIso();
        String softwareVersion=tm.getDeviceSoftwareVersion();
        String voiceMailNumber=tm.getVoiceMailNumber();

        info="Phone Details:\n";
        info+="\n Phone Network Type:"+PhoneType;
        info+="\n IMEI Number:"+IMEINumber;
        info+="\n SubscriberID:"+subscriberID;
        info+="\n Sim Serial Number:"+SIMSerialNumber;
        info+="\n Network Country ISO:"+networkCountryISO;
        info+="\n SIM Country ISO:"+SIMCountryISO;
        info+="\n Software Version:"+softwareVersion;
        info+="\n Voice Mail Number:"+voiceMailNumber;
        info+="\n In Roaming? :"+isRoaming;

        textView1 = (TextView) findViewById(R.id.textView1);
        btnPhoneDetails = (Button) findViewById(R.id.btnPhoneDetails);
        textView1.setText(info);
    }
}
```

OUTPUT:

RESULT:

Thus, an android application to display the information of the telephony services was developed successfully.

Expt. No. : 16 **Date :**

Reg. No. :

Develop an android application to create Two activity named as StudentBasicDetailsActivity (name, age, address) and StudentMarkActivity (Marks, Total, Grade, Status). Write an android code to combine these two activities in single screen using android fragment.

AIM:

To develop an android application to combine two activities in single screen using android fragment.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_16">

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

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Students Details using Fragment"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="20dp"
        android:textSize="20dp"
        android:textStyle="bold"
        android:textColor="@color/colorAccent"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginTop="30dp">

        <fragment
            android:id="@+id/fragment1"
            android:name="com.example.it17611_expt_16.StudentBasicDetailsActivity"
            android:layout_width="0px"
```

```
        android:layout_height="match_parent"
        android:layout_weight="1" />

    <fragment
        android:id="@+id/fragment2"
        android:name="com.example.it17611_expt_16.StudentMarkActivity"
        android:layout_width="0px"
        android:layout_height="match_parent"
        android:layout_weight="1" />

  </LinearLayout>
</LinearLayout>
```

fragment_student_basic_details.xml

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

    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Basic Details"
      android:layout_marginTop="20dp"
      android:layout_marginLeft="40dp"
      android:textStyle="bold"
      android:textSize="15dp"
      android:textColor="@color/colorPrimary"/>

  <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Name        :   Aravind"
      android:layout_marginTop="90dp"
      android:layout_marginLeft="20dp"/>

  <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Roll No      :   2017101"
      android:layout_marginTop="150dp"
      android:layout_marginLeft="20dp"/>

  <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Age          :   22"
      android:layout_marginTop="210dp"
      android:layout_marginLeft="20dp"/>
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Address   :   Chennai"
        android:layout_marginTop="270dp"
        android:layout_marginLeft="20dp"/>

</FrameLayout>
```

fragment_student_mark.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mark Details"
        android:layout_marginTop="20dp"
        android:layout_marginLeft="40dp"
        android:textStyle="bold"
        android:textSize="15dp"
        android:textColor="@color/colorPrimary"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mark 1    :   95"
        android:layout_marginTop="90dp"
        android:layout_marginLeft="20dp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mark 2    :   89"
        android:layout_marginTop="150dp"
        android:layout_marginLeft="20dp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mark 3    :   91"
        android:layout_marginTop="210dp"
        android:layout_marginLeft="20dp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Total     :   275"
        android:layout_marginTop="270dp"
        android:layout_marginLeft="20dp"/>
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Grade    :   S"
        android:layout_marginTop="330dp"
        android:layout_marginLeft="20dp"/>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Status    :   Pass"
        android:layout_marginTop="400dp"
        android:layout_marginLeft="20dp"/>
</FrameLayout>
```

MainActivity.java

```
package com.example.it17611_expt_16;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

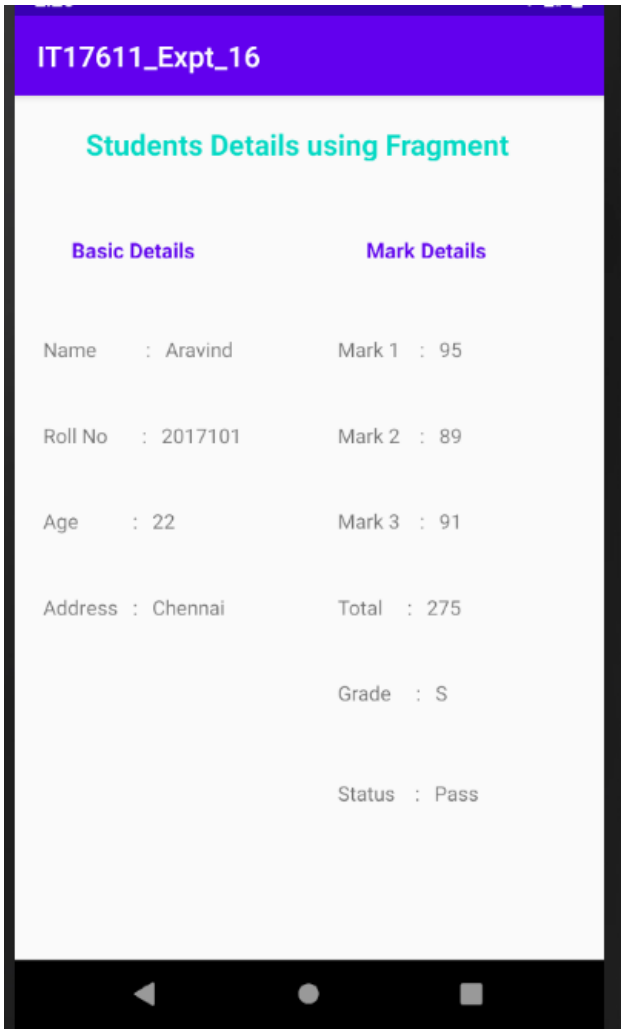
StudentBasicDetailsActivity.java

```
package com.example.it17611_expt_16;

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class StudentBasicDetailsActivity extends Fragment {
    public static StudentBasicDetailsActivity newInstance() {
        return new StudentBasicDetailsActivity();
    }
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container,
@Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_student_basic_details, container, false);
    }

}
```

StudentMarkActivity.java

```
package com.example.it17611_expt_16;

import android.os.Bundle;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class StudentMarkActivity extends Fragment {

    public static StudentMarkActivity newInstance() {
        return new StudentMarkActivity();
    }

    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container,
@Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_student_mark, container, false);
    }

}
```

OUTPUT:



RESULT:

Thus, an android application to combine the two activities in single screen using android fragment was developed successfully.

Expt. No. : 17 **Date :**

Reg. No. :

Develop an android application to conduct online-examination. Prepare the questions of your choice. should enter their name and register number before answering the questions. The online exam should contain at least five questions. Each question should be of multiple choices. The choice of selection should use radio buttons, for each correct answer one mark should be awarded. After attempting all questions, proceed with submit button. After clicking the submit button, display the result with register number, name of the student and marks in Toast button.

AIM:

To develop an android application to conduct online-examination to display the result with register number, name of the student and marks in Toast button.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_17">

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

 </manifest>
```

activity_main.xml

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

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

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Online Examination"
            android:layout_centerHorizontal="true"
            android:layout_marginTop="20dp"
            android:textSize="25dp"
            android:textStyle="bold"
            android:textColor="@color/colorAccent"/>

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical"
            android:layout_marginTop="50dp">
```

```
<EditText
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:gravity="center_horizontal"
   android:id="@+id/editRegNo"
   android:hint="Enter Reg. No."
   android:layout_marginLeft="20dp"
   android:ems="10"/>

<EditText
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:gravity="center_horizontal"
   android:id="@+id/editName"
   android:hint="Enter Name"
   android:layout_marginLeft="20dp"
   android:ems="10"/>

<TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Mobile Application Development - MCQs"
   android:layout_marginTop="20dp"
   android:layout_marginLeft="20dp"
   android:textSize="15dp"
   android:textStyle="bold"
   android:textColor="@color/colorPrimary"/>

<TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:gravity="center_horizontal"
   android:text="1. Android is Developed By."
   android:layout_marginLeft="20dp"
   android:layout_marginTop="10dp"/>

<RadioGroup
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:gravity="center_horizontal"
   android:layout_marginLeft="20dp"
   android:orientation="horizontal"
   android:id="@+id/radioQ1">

   <RadioButton
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Apple"
      android:textSize="11dp"
      android:id="@+id/radioQ1O1"
      android:checked="false"/>
   <RadioButton
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:text="Microsoft"
        android:textSize="11dp"
        android:id="@+id/radioQ1O2"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Android Inc"
        android:textSize="11dp"
        android:id="@+id/radioQ1O3"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Google"
        android:textSize="11dp"
        android:id="@+id/radioQ1O4"
        android:checked="false"/>
</RadioGroup>

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="center_horizontal"
    android:text="2. _____ is virtual Device in Android Studio?"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="10dp"/>

<RadioGroup
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="center_horizontal"
    android:layout_marginLeft="20dp"
    android:orientation="horizontal"
    android:id="@+id/radioQ2">

    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="ADT"
        android:textSize="11dp"
        android:id="@+id/radioQ2O1"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="AVD"
        android:textSize="11dp"
        android:id="@+id/radioQ2O2"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
        android:text="SDK"
        android:textSize="11dp"
        android:id="@+id/radioQ2O3"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="APK"
        android:textSize="11dp"
        android:id="@+id/radioQ2O4"
        android:checked="false"/>
</RadioGroup>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="center_horizontal"
    android:text="3. Android Is Based On Which Kernal?"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="10dp"/>

<RadioGroup
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:gravity="center_horizontal"
    android:layout_marginLeft="20dp"
    android:orientation="horizontal"
    android:id="@+id/radioQ3">

    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Linux"
        android:textSize="11dp"
        android:id="@+id/radioQ3O1"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Windows"
        android:textSize="11dp"
        android:id="@+id/radioQ3O2"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Redhat"
        android:textSize="11dp"
        android:id="@+id/radioQ3O3"
        android:checked="false"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mac"
        android:textSize="11dp"
```

```
        android:id="@+id/radioQ3O4"
        android:checked="false"/>
    </RadioGroup>
    <TextView
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:gravity="center_horizontal"
       android:text="4. Latest Version of Android and API level is _____. "
       android:layout_marginLeft="20dp"
       android:layout_marginTop="10dp"/>

    <RadioGroup
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:gravity="center_horizontal"
       android:layout_marginLeft="20dp"
       android:orientation="horizontal"
       android:id="@+id/radioQ4">

       <RadioButton
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="9 - API 28"
          android:textSize="11dp"
          android:id="@+id/radioQ4O1"
          android:checked="false"/>
       <RadioButton
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="9 - API 29"
          android:textSize="11dp"
          android:id="@+id/radioQ4O2"
          android:checked="false"/>
       <RadioButton
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="10 - API 28"
          android:textSize="11dp"
          android:id="@+id/radioQ4O3"
          android:checked="false"/>
       <RadioButton
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:text="10 - API 29"
          android:textSize="11dp"
          android:id="@+id/radioQ4O4"
          android:checked="false"/>
    </RadioGroup>
    <TextView
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:gravity="center_horizontal"
       android:text="5. First phone released that ran the Android OS was _____."
       android:layout_marginLeft="20dp"
```

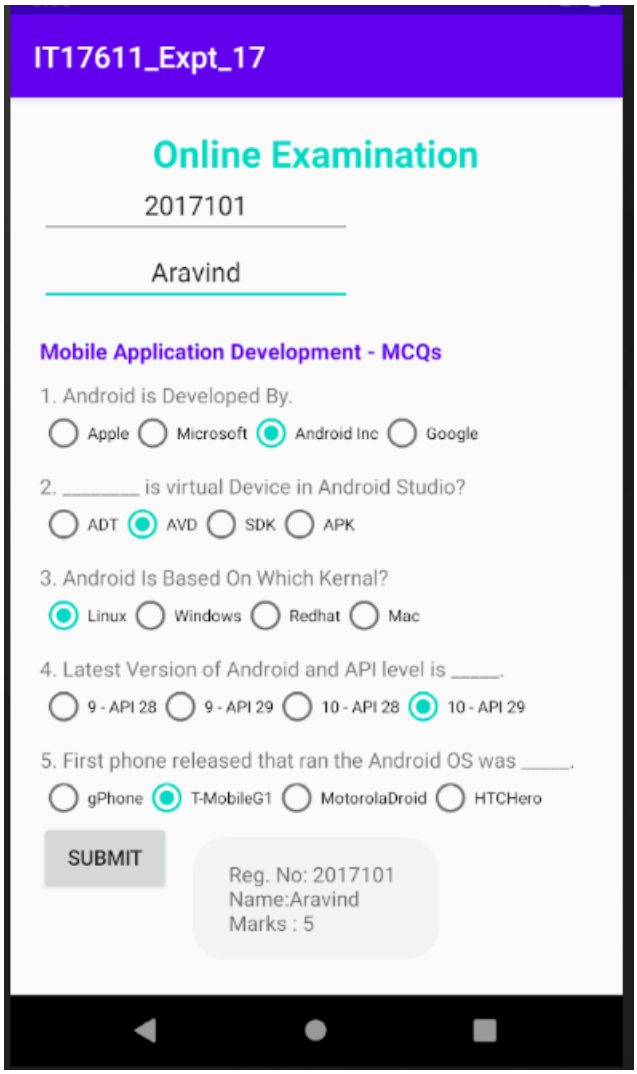
```
            android:layout_marginTop="10dp"/>

        <RadioGroup
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center_horizontal"
            android:layout_marginLeft="20dp"
            android:orientation="horizontal"
            android:id="@+id/radioQ5">

            <RadioButton
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="gPhone"
                android:textSize="11dp"
                android:id="@+id/radioQ5O1"
                android:checked="false"/>
            <RadioButton
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="T-MobileG1"
                android:textSize="11dp"
                android:id="@+id/radioQ5O2"
                android:checked="false"/>
            <RadioButton
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="MotorolaDroid"
                android:textSize="11dp"
                android:id="@+id/radioQ5O3"
                android:checked="false"/>
            <RadioButton
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"

                android:text="HTCHero"
                android:textSize="11dp"
                android:id="@+id/radioQ5O4"
                android:checked="false"/>
        </RadioGroup>

        <Button
            android:id="@+id/btnSubmit"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:text="Submit"/>

      </LinearLayout>

    </RelativeLayout>

</ScrollView>
```

MainActivity.java

```
package com.example.it17611_expt_17;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    EditText editName, editRegNo;
    Button btnSubmit;
    RadioGroup radioQ1,radioQ2,radioQ3,radioQ4,radioQ5;
    RadioButton radio1, radio2, radio3, radio4, radio5;


    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editName = (EditText)findViewById(R.id.editName);
        editRegNo = (EditText)findViewById(R.id.editRegNo);
        btnSubmit = (Button)findViewById(R.id.btnSubmit);
        radioQ1=(RadioGroup)findViewById(R.id.radioQ1);
        radioQ2=(RadioGroup)findViewById(R.id.radioQ2);
        radioQ3=(RadioGroup)findViewById(R.id.radioQ3);
        radioQ4=(RadioGroup)findViewById(R.id.radioQ4);
        radioQ5=(RadioGroup)findViewById(R.id.radioQ5);

        btnSubmit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                if (editName.getText().toString().trim().length() == 0 ||
editRegNo.getText().toString().trim().length() == 0) {
                    Toast.makeText(getApplicationContext(), "Please enter Reg No. and Name ",
Toast.LENGTH_LONG).show();
                }
                else {
                    int[] selectedId = {radioQ1.getCheckedRadioButtonId(),
radioQ2.getCheckedRadioButtonId(), radioQ3.getCheckedRadioButtonId(),
                            radioQ4.getCheckedRadioButtonId(), radioQ5.getCheckedRadioButtonId()};
                    radio1 = (RadioButton) findViewById(selectedId[0]);
                    radio2 = (RadioButton) findViewById(selectedId[1]);
                    radio3 = (RadioButton) findViewById(selectedId[2]);
                    radio4 = (RadioButton) findViewById(selectedId[3]);
```

```
                radio5 = (RadioButton) findViewById(selectedId[4]);

                int mark=0;
                if(radio1.getText().toString().matches("Android Inc") )
                        mark+=1;
                if(radio2.getText().toString().matches("AVD") )
                        mark+=1;
                if(radio3.getText().toString().matches("Linux"))
                        mark+=1;
                if(radio4.getText().toString().matches("10 - API 29"))
                        mark+=1;
                if(radio5.getText().toString().matches("T-MobileG1"))
                        mark+=1;

                Toast.makeText(MainActivity.this,
                        "Reg. No: "+ editRegNo.getText()+"\nName:"+editName.getText()+"\nMarks :
"+mark,
                        Toast.LENGTH_SHORT).show();

            }
        }
    });
  }
}
```

OUTPUT:



RESULT:

Thus, an android application to conduct online-examination to display the result with register number, name of the student and marks in Toast button was developed successfully.

Expt. No. : 18 **Date :**

Reg. No. :

Develop an android application to display the button after 30s using Thread.

AIM:

To develop an android application to display the button after 30s using Thread.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_18">

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

 </manifest>
```

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp"
        android:textStyle="bold"
        android:textSize="20dp"
        android:text="Display Button using Threads" />

    <Button
        android:id="@+id/btnStart"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="center_horizontal"
        android:text="Click to Display Button in 30 seconds"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="180dp"/>
```

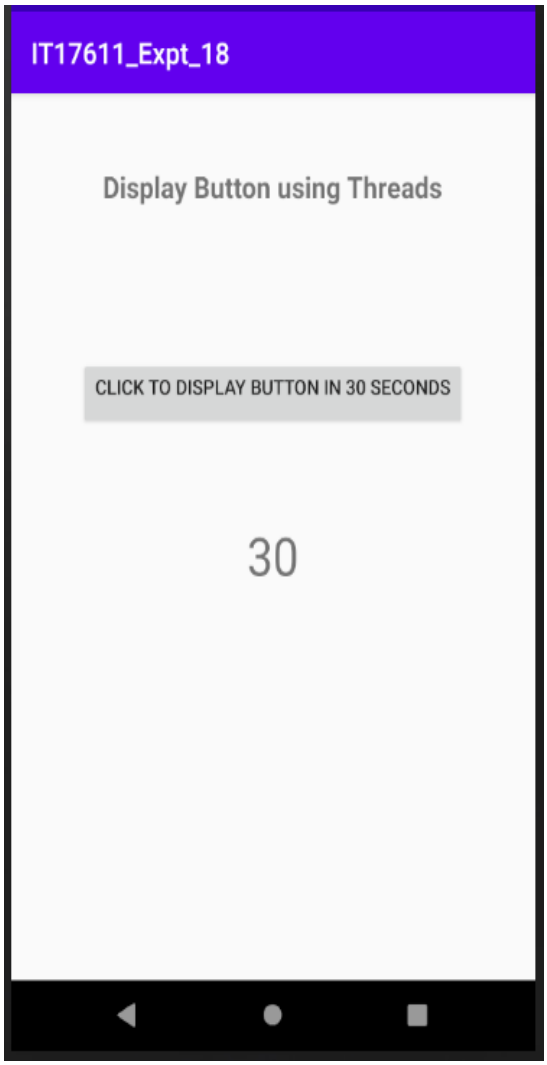
```
    <TextView
        android:id="@+id/txtTimer"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="center_horizontal"
        android:text=""
        android:layout_centerHorizontal="true"
        android:layout_marginTop="290dp"
        android:textSize="36dp"/>

    <Button
        android:id="@+id/btnDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Displaying the Button "
        android:visibility="invisible"
        android:padding="5dp"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="400dp"/>


</RelativeLayout>
```

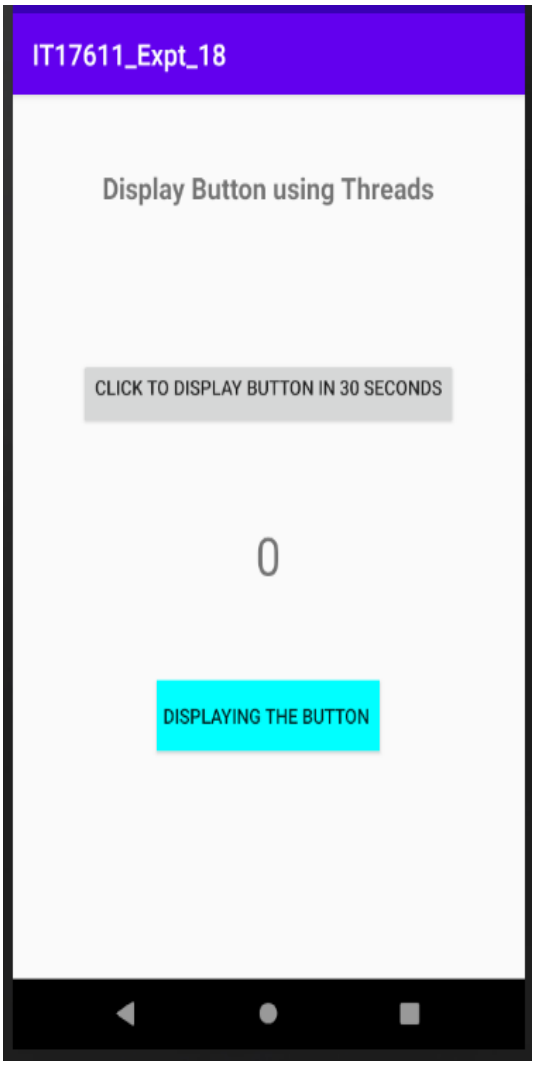
MainActivity.java

```
package com.example.it17611_expt_18;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    Handler hand=new Handler();
    Button btnStart, btnDisplay;
    TextView txtTimer;
    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        txtTimer=(TextView)findViewById(R.id.txtTimer);
        btnStart=(Button)findViewById(R.id.btnStart);
        btnDisplay=(Button)findViewById(R.id.btnDisplay);

        btnStart.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                hand.postDelayed(run,3000);
                txtTimer.setText(""+30);
```

```
            }
        });
    }

    Runnable run=new Runnable() {
        @Override
        public void run() {
            updateTime();
        }
    };
    public void updateTime()
    {
        txtTimer.setText("" + (Integer.parseInt(txtTimer.getText().toString()) - 1));
        if (Integer.parseInt(txtTimer.getText().toString()) == 0) {
            btnDisplay.setVisibility(View.VISIBLE);
            btnDisplay.setBackgroundColor(Color.CYAN);

        } else {
            hand.postDelayed(run, 3000);
        }
    }
}
```

OUTPUT:





RESULT:

Thus, an android application to display the button after 30s using Thread was developed successfully.

Expt. No. : 19 **Date :**

Reg. No. :

Develop an android application to perform the following i). Text to Speech ii). Speech to Text.

AIM:

To develop an android application to perform Text to Speech and Speech to Text.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click "Next"

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click "Next".

Step 3: Choose the activity for the application (By default choose "Blank Activity). Click "Next".

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_19">

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:layout_centerHorizontal="true"
        android:text="Text to Speech"
        android:textSize="30dp"
        android:textColor="@color/colorAccent"/>
    <EditText
        android:id="@+id/editTextToSpeech"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="100dp"
        android:ems="10"
        android:hint="Enter Text:">
        <requestFocus />
    </EditText>
```

```
    <Button
        android:id="@+id/btnTextToSpeech"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="250dp"
        android:layout_marginTop="100dp"
        android:text="Text to Speech" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="250dp"
        android:layout_centerHorizontal="true"
        android:text="Speech to Text"
        android:textSize="30dp"
        android:textColor="@color/colorAccent"/>

    <Button
        android:id="@+id/btnSpeechToText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="350dp"
        android:text="Speech to Text" />

    <TextView
        android:id="@+id/viewSpeechToText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="200dp"
        android:layout_marginTop="360dp"
        android:text=""
        android:ems="10"/>

</RelativeLayout>
```

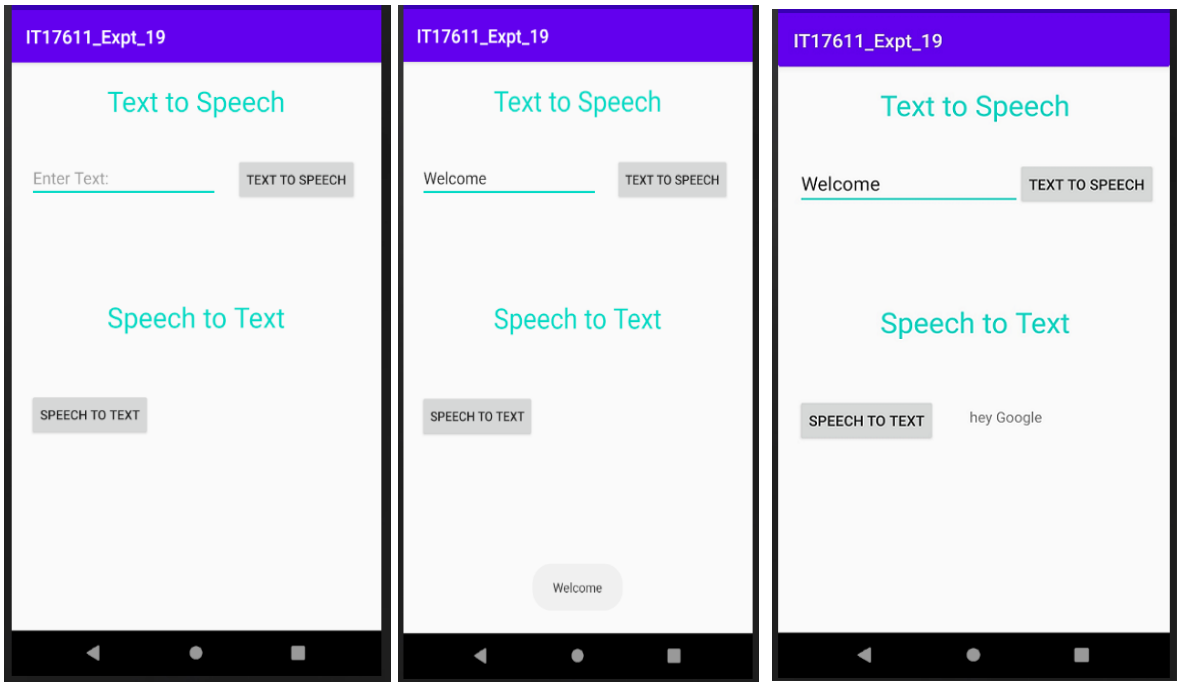
MainActivity.java

```
package com.example.it17611_expt_19;

import androidx.appcompat.app.AppCompatActivity;

import android.content.ActivityNotFoundException;
import android.content.Intent;
import android.os.Bundle;
import android.speech.RecognizerIntent;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
```

```
import java.util.ArrayList;
import java.util.Locale;

public class MainActivity extends AppCompatActivity{

    TextToSpeech tts;
    Button btnTextToSpeech, btnSpeechToText;
    EditText editTextToSpeech;
    TextView viewSpeechToText;
    private final int REQ_CODE = 100;

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

        editTextToSpeech = (EditText) findViewById(R.id.editTextToSpeech);
        btnTextToSpeech = (Button) findViewById(R.id.btnTextToSpeech);
        btnSpeechToText = (Button) findViewById(R.id.btnSpeechToText);
        viewSpeechToText = (TextView) findViewById(R.id.viewSpeechToText);

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

        btnTextToSpeech.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
                String toSpeak = editTextToSpeech.getText().toString();
                Toast.makeText(getApplicationContext(), toSpeak, Toast.LENGTH_SHORT).show();
                tts.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
            }
        });

        btnSpeechToText.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(RecognizerIntent.ACTION_RECOGNIZE_SPEECH);
                intent.putExtra(RecognizerIntent.EXTRA_LANGUAGE_MODEL,
                        RecognizerIntent.LANGUAGE_MODEL_FREE_FORM);
                intent.putExtra(RecognizerIntent.EXTRA_LANGUAGE, Locale.getDefault());
                intent.putExtra(RecognizerIntent.EXTRA_PROMPT, "Need to speak");
                try {
                    startActivityForResult(intent, REQ_CODE);
                } catch (ActivityNotFoundException a) {
                    Toast.makeText(getApplicationContext(),
                            "Sorry! your device not supported",
                            Toast.LENGTH_SHORT).show();
                }
```

```
        }
    });
}

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

@Override
protected void onActivityResult(int requestCode, int resultCode, Intent data) {
    super.onActivityResult(requestCode, resultCode, data);
    switch (requestCode) {
        case REQ_CODE: {
            if (resultCode == RESULT_OK && null != data) {
                ArrayList result = data
                        .getStringArrayListExtra(RecognizerIntent.EXTRA_RESULTS);
                viewSpeechToText.setText("" + result.get(0));
            }
            break;
        }
    }
}
}
```

OUTPUT:



RESULT:

Thus, an android application to perform the Text to Speech and Speech to Text was developed successfully.

Expt. No. : 20 **Date :**

Reg. No. :

Develop an application to display the cricket scores of the ICC world cup match Your application should update the scores automatically. Use RSS feed to implement this application.

AIM:

To develop an android application to display the cricket scores of the ICC world cup match that updates the scores automatically using RSS feed.

PROCEDURE:

Step 1: File → NewProject
Provide the application name and Click “Next”

Step 2: Select the target android devices,
Select the minimum SDK to run the application. Click “Next”.

Step 3: Choose the activity for the application (By default choose “Blank Activity). Click “Next”.

Step 4: Enter activity name and click "Finish".

Step 5: Edit the program.

Step 6: Run the application, 2-ways to run the application

1. Running through emulator
2. Running through mobile device

PROGRAM:

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.it17611_expt_20">

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

    <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

    </application>

 </manifest>
```

activity_main.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="RSS FEED"
        android:textSize="30dp"
        android:textStyle="bold"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="50dp"/>
    <Button
        android:id="@+id/btnRSSFeed"
        android:text="Fetch Cricket RSS Feed"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true" />

</RelativeLayout>
```

activity_rssfeed.xml

```
<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=".Rssfeed">

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

</LinearLayout>
```

MainActivity.java

```
package com.example.it17611_expt_20;

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

public class MainActivity extends AppCompatActivity {

   Button btnRSSFeed;

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

      btnRSSFeed.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this,Rssfeed.class);
            startActivity(intent);
         }
      });
   }
}
```

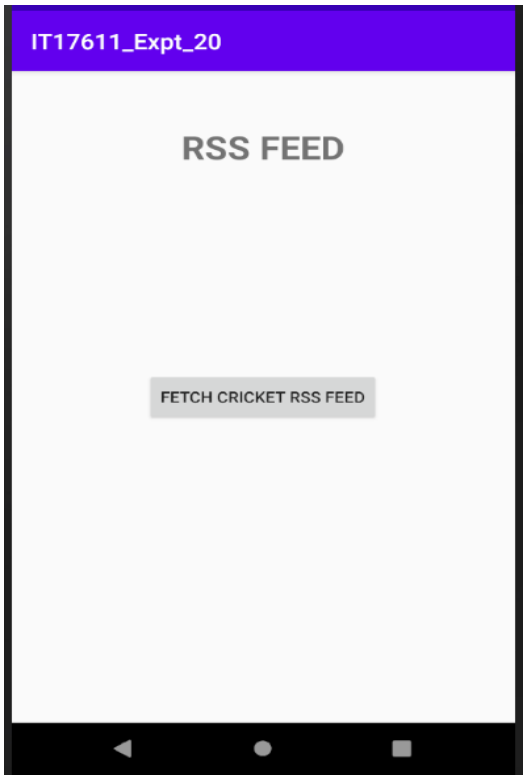
Rssfeed.java

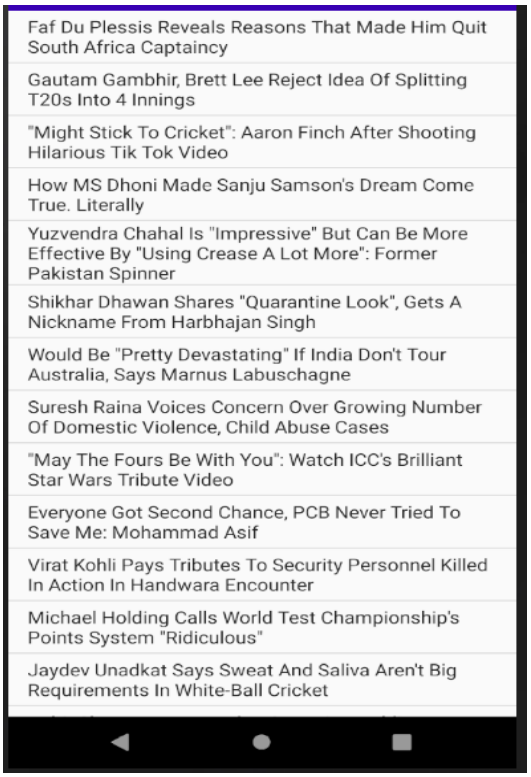
```
package com.example.it17611_expt_20;

import android.os.Bundle;
import android.app.ListActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.AsyncTask;
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 Rssfeed 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://sports.ndtv.com/rss/cricket");
            XmlPullParserFactory factory = XmlPullParserFactory.newInstance();
            factory.setNamespaceAware(false);
            XmlPullParser xpp = factory.newPullParser();

            xpp.setInput(getInputStream(url), "UTF_8");
            boolean insideItem = false;

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

        }
        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(Rssfeed.this,
                                   android.R.layout.simple_list_item_1, headlines);
        setListAdapter(adapter);
    }
}

@Override
protected void onListItemClick(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;
        }
    }
}
```

OUTPUT:





RESULT:

Thus, an android application to display the cricket scores of the ICC world cup match that updates the scores automatically using RSS feed.