Mobile Application Developmet LAB

CYCLE -1

1.DESIGN A LOGIN PAGE

CODE:

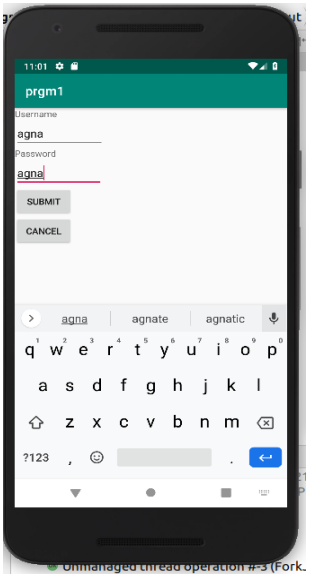
XML:

```
<LinearLayout android:layout_height="match_parent"
android:layout_width="match_parent" android:orientation="vertical"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Username "
      android:id="@+id/tv1"/>
   <EditText
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:hint="Enter Username"
      android:id="@+id/et1"/>
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Password"
      android:id="@+id/tv2"/>
   <EditText
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/et2"
      android:hint="Enter Password"/>
   <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/b1"
      android:text="Submit"
      android:onClick="Submit"/>
   <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/b2"
      android:text="Cancel" /></LinearLayout>
```

JAVA:

```
package com.example.sjcet.prgm1;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
   }
   public void Submit(View view) {
   }
```

OUTPUT:



2.Change the content in the TextView on Button Click

CODE:

XML:

```
<LinearLayout android:layout_height="match_parent"
android:layout_width="match_parent"
   android:orientation="vertical" android:gravity="center"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/tv1"
      android:text="Label1"/>
```

```
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/b1"
        android:text="ChangeContent"
        android:onClick="Chnage"/>
</LinearLayout>
```

JAVA:

```
package com.example.sjcet.prgm2;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    TextView tv1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void Chnage(View view) {
        tv1=(TextView) findViewById(R.id.tv1);
        tv1.setText("New Content");
    }
}
```

OUTPUT:

3.Read a content from EditText and print it in a TextView

CODE:

XML:

```
<LinearLayout android:layout_height="match_parent"
android:layout_width="match_parent"
   android:orientation="vertical" android:gravity="center"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/tv1"
      android:text="Text1"/>
   <EditText
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/et1"
      android:hint="Enter the content"/>
   <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:id="@+id/b1"
      android:text="ChangeText"
      android:onClick="changeLabelContent"/>
</LinearLayout>
```

JAVA:

```
package com.example.sjcet.prgrm3;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
   TextView tv1;
   EditText et1;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
   }
   public void changeLabelContent(View view) {
      tv1=(TextView)findViewById(R.id.tv1);
      et1=(EditText)findViewById(R.id.et1);
```

```
        tv1.setText(et1.getText());
    }
}
```

OUTPUT:

4. Change the background color on Button Click.

CODE:

XML:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/rlVar1"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@color/colorPrimaryDark"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/tvVar1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="240dp"
        android:text="Do you know me"
        android:textSize="30dp"
        android:textStyle="bold" />
```

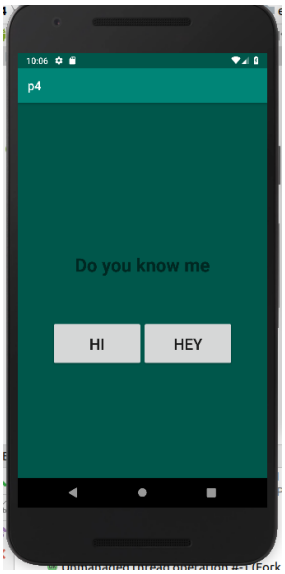
```
    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/tvVar1"
        android:layout_centerInParent="true"
        android:layout_marginTop="60dp"
        android:orientation="horizontal"
        android:padding="10dp">
        <Button
            android:id="@+id/btVar1"
            android:layout_width="150dp"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:text="hi"
            android:textSize="25dp" />
        <Button
            android:id="@+id/btVar2"
            android:layout_width="150dp"
            android:layout_height="wrap_content"
            android:padding="20dp"
            android:text="hey"
            android:textSize="25dp" />
    </LinearLayout>
</RelativeLayout>
```

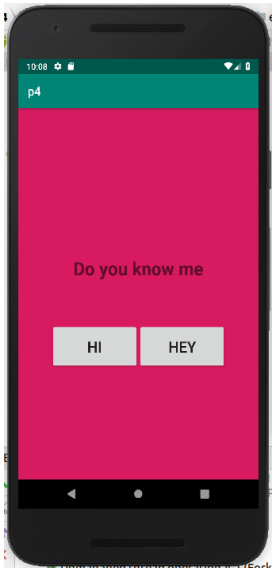
JAVA:

```
package com.example.sjcet.p4;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RelativeLayout;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button button1, button2;
        final RelativeLayout relativeLayout;
        button1 = findViewById(R.id.btVar1);
        button2 = findViewById(R.id.btVar2);
        relativeLayout = findViewById(R.id.rlVar1);
        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                relativeLayout.setBackgroundResource(R.color.colorPrimary);
            }
        });
```

```
        button2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                relativeLayout.setBackgroundResource(R.color.colorAccent);
            }
        });
    }
}
```

OUTPUT:





5.Create a Sample Calculator

CODE:

XML:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/relative1"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/edt1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
    <Button
        android:id="@+id/button1"
        style="?android:attr/buttonStyleSmall"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/button4"
    android:layout_alignRight="@+id/button4"
    android:layout_below="@+id/edt1"
    android:layout_marginTop="94dp"
    android:text="1" />
<Button
    android:id="@+id/button2"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/button1"
    android:layout_toLeftOf="@+id/button3"
    android:layout_toStartOf="@+id/button3"
    android:text="2" />
<Button
    android:id="@+id/button3"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/button2"
    android:layout_centerHorizontal="true"
    android:text="3" />
<Button
    android:id="@+id/button4"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button1"
    android:layout_toLeftOf="@+id/button2"
    android:text="4" />
<Button
    android:id="@+id/button5"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/button4"
    android:layout_alignLeft="@+id/button2"
    android:layout_alignStart="@+id/button2"
    android:text="5" />
<Button
    android:id="@+id/button6"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button3"
    android:layout_alignStart="@+id/button3"
    android:layout_below="@+id/button3"
```

```
    android:text="6" />
<Button
    android:id="@+id/button7"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button4"
    android:layout_toLeftOf="@+id/button2"
    android:text="7" />
<Button
    android:id="@+id/button8"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button5"
    android:layout_alignStart="@+id/button5"
    android:layout_below="@+id/button5"
    android:text="8" />
<Button
    android:id="@+id/button9"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button6"
    android:layout_alignStart="@+id/button6"
    android:layout_below="@+id/button6"
    android:text="9" />
<Button
    android:id="@+id/buttonadd"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/edt1"
    android:layout_alignRight="@+id/edt1"
    android:layout_alignTop="@+id/button3"
    android:layout_marginLeft="46dp"
    android:layout_marginStart="46dp"
    android:layout_toRightOf="@+id/button3"
    android:text="+" />
<Button
    android:id="@+id/buttonsub"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttonadd"
    android:layout_alignLeft="@+id/buttonadd"
    android:layout_alignRight="@+id/buttonadd"
    android:layout_alignStart="@+id/buttonadd"
    android:layout_below="@+id/buttonadd"
```

```
    android:text="-" />
  <Button
    android:id="@+id/buttonmul"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/buttonsub"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignStart="@+id/buttonsub"
    android:layout_below="@+id/buttonsub"
    android:text="*" />
  <Button
    android:id="@+id/button10"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button7"
    android:layout_toLeftOf="@+id/button2"
    android:text="." />
  <Button
    android:id="@+id/button0"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button8"
    android:layout_alignStart="@+id/button8"
    android:layout_below="@+id/button8"
    android:text="0" />
  <Button
    android:id="@+id/buttonC"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button9"
    android:layout_alignStart="@+id/button9"
    android:layout_below="@+id/button9"
    android:text="C" />
  <Button
    android:id="@+id/buttondiv"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttonmul"
    android:layout_alignLeft="@+id/buttonmul"
    android:layout_alignRight="@+id/buttonmul"
    android:layout_alignStart="@+id/buttonmul"
    android:layout_below="@+id/buttonmul"
    android:text="/" />
```

```
    <Button
        android:id="@+id/buttoneql"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignEnd="@+id/buttondiv"
        android:layout_alignLeft="@+id/button10"
        android:layout_alignRight="@+id/buttondiv"
        android:layout_alignStart="@+id/button10"
        android:layout_below="@+id/button0"
        android:layout_marginTop="37dp"
        android:text="=" />
</RelativeLayout>
```

JAVA:

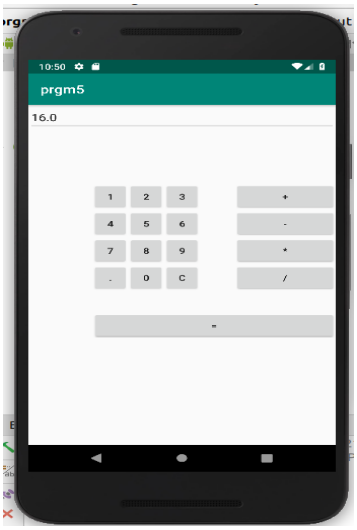
```
package com.example.sjcet.prgm5;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    Button button0, button1, button2, button3, button4, button5, button6,
    button7, button8, button9, buttonAdd, buttonSub, buttonDivision,
          buttonMul, button10, buttonC, buttonEqual;
    EditText crunchifyEditText;
    float mValueOne, mValueTwo;
    boolean crunchifyAddition, mSubtract, crunchifyMultiplication, crunchifyDivision;
    @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);
        button10 = (Button) findViewById(R.id.button10);
        buttonAdd = (Button) findViewById(R.id.buttonadd);
        buttonSub = (Button) findViewById(R.id.buttonsub);
        buttonMul = (Button) findViewById(R.id.buttonmul);
        buttonDivision = (Button) findViewById(R.id.buttondiv);
        buttonC = (Button) findViewById(R.id.buttonC);
        buttonEqual = (Button) findViewById(R.id.buttoneql);
```

```
crunchifyEditText = (EditText) findViewById(R.id.edt1);
button1.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "1");
   }
});
button2.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "2");
   }
});
button3.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "3");
   }
});
button4.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "4");
   }
});
button5.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "5");
   }
});
button6.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "6");
   }
});
button7.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "7");
   }
});
button8.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View v) {
      crunchifyEditText.setText(crunchifyEditText.getText() + "8");
   }
});
```

```
button9.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        crunchifyEditText.setText(crunchifyEditText.getText() + "9");
    }
});
button0.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        crunchifyEditText.setText(crunchifyEditText.getText() + "0");
    }
});
buttonAdd.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (crunchifyEditText == null) {
            crunchifyEditText.setText("");
        } else {
            mValueOne = Float.parseFloat(crunchifyEditText.getText() + "");
            crunchifyAddition = true;
            crunchifyEditText.setText(null);
        }
    }
});
buttonSub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueOne = Float.parseFloat(crunchifyEditText.getText() + "");
        mSubtract = true;
        crunchifyEditText.setText(null);
    }
});
buttonMul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueOne = Float.parseFloat(crunchifyEditText.getText() + "");
        crunchifyMultiplication = true;
        crunchifyEditText.setText(null);
    }
});
buttonDivision.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueOne = Float.parseFloat(crunchifyEditText.getText() + "");
        crunchifyDivision = true;
        crunchifyEditText.setText(null);
    }
});
buttonEqual.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
        public void onClick(View v) {
            mValueTwo = Float.parseFloat(crunchifyEditText.getText() + "");
            if (crunchifyAddition == true) {
                crunchifyEditText.setText(mValueOne + mValueTwo + "");
                crunchifyAddition = false;
            }
            if (mSubtract == true) {
                crunchifyEditText.setText(mValueOne - mValueTwo + "");
                mSubtract = false;
            }
            if (crunchifyMultiplication == true) {
                crunchifyEditText.setText(mValueOne * mValueTwo + "");
                crunchifyMultiplication = false;
            }
            if (crunchifyDivision == true) {
                crunchifyEditText.setText(mValueOne / mValueTwo + "");
                crunchifyDivision = false;
             }
    });
    buttonC.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            crunchifyEditText.setText("");
        }
    });
    button10.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            crunchifyEditText.setText(crunchifyEditText.getText() + ".");
        }
    }); }}
```

OUTPUT:



CYCLE -2

1.Create 2 activity from the first activity on a button click move to the second activity.

activity_main.xml

```
LinearLayout android:layout_width="match_parent" android:layout_height="match_parent"
   android:orientation="vertical"
   android:gravity="center"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="MOVE TO NEXT ACTIVITY"
      android:id="@+id/bt"
      android:onClick="click"
      android:gravity="center"/>
</LinearLayout>
```

activity_main2.xml

```
<LinearLayout android:layout_width="match_parent" android:layout_height="match_parent"

   android:orientation="vertical"
   android:gravity="center"
   android:background="@android:color/holo_blue_light"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="WELCOME TO THE SECOND ACTIVITY"
      android:id="@+id/tv" />
</LinearLayout>
```

MainActivity.java:

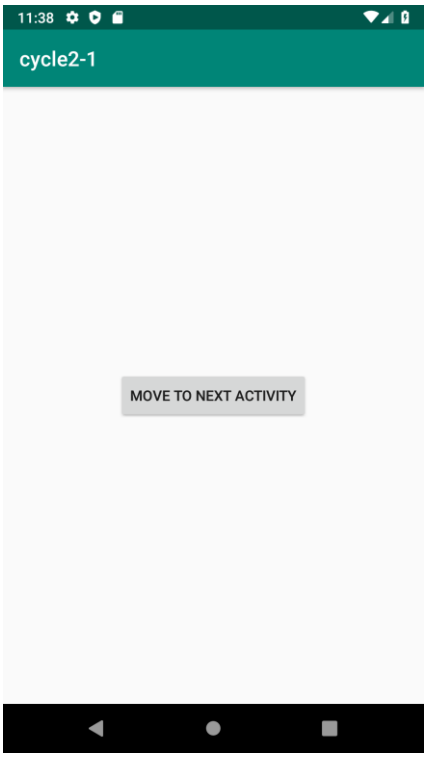
```
package com.example.sjcet.cycle2_1;

import android.content.Intent;
import android.widget.Button;
import android.view.View;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
   Button bt;
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
```

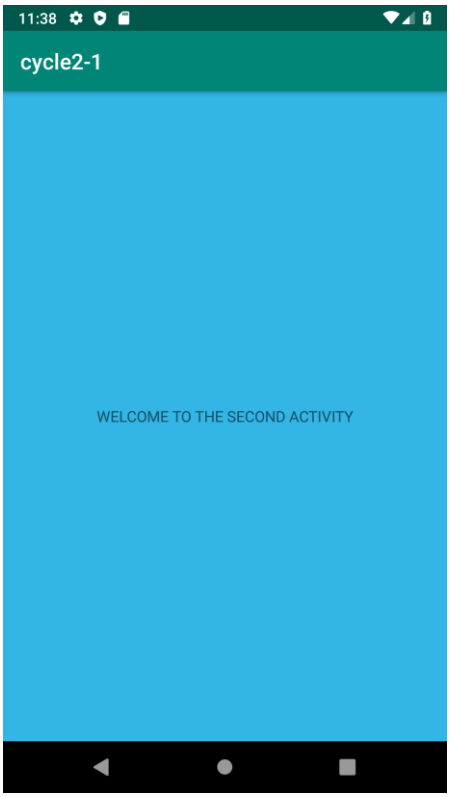
```
        setContentView(R.layout.activity_main);
        bt =findViewById(R.id.bt);
    }
    public void click(View view) {
        OpenNewActivity();
    }
    public void OpenNewActivity()
    {
        Intent intent=new Intent(this, Main2Activity.class);
        startActivity(intent);
    }
}
```

mainActivity2.java

```
package com.example.sjcet.cycle2_1;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
public class Main2Activity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }
}
```

Output





2.create an activity and move to fb loginpage on button click

Program

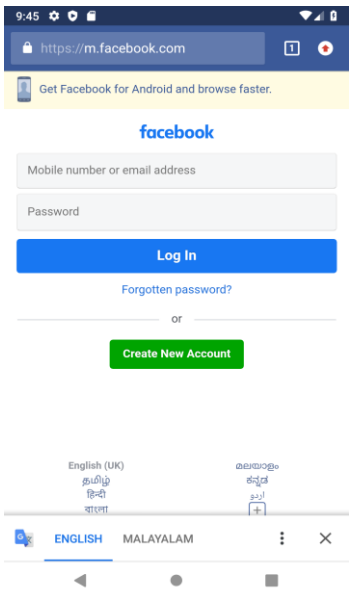
MainActivity.xml:

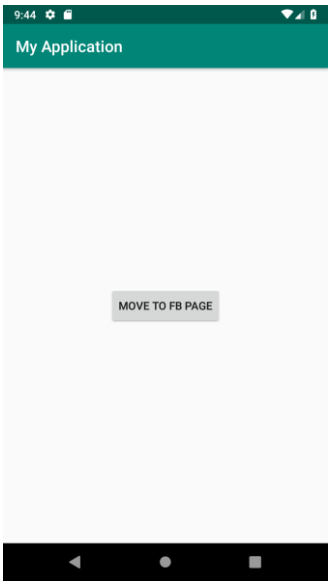
```
<LinearLayout android:layout_width="match_parent" android:layout_height="match_parent"
   android:orientation="vertical"
   android:gravity="center"
   xmlns:android="http://schemas.android.com/apk/res/android">
<Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="MOVE TO FB PAGE"
   android:id="@+id/bt"
   android:onClick="click"
   android:gravity="center"/>
   </LinearLayout>
```

MainActivity.java:

```
package com.example.sjcet.myapplication;
import android.content.Intent;
import android.net.Uri;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      Button btn_Explicit = (Button)findViewById(R.id.bt);
      btn_Explicit.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {

            Intent intent = new Intent(Intent.ACTION_VIEW,Uri.parse("https://www.facebook.com/"));
            startActivity(intent);
         }
      });
   }}
```

OUTPUT:





3.Read message in first activity and pass it to the second activity to the button click

Program:

activity_main.xml

```
<LinearLayout android:layout_width="match_parent" android:layout_height="match_parent"
   android:orientation="vertical"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <EditText
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/et"
      android:textColor="@android:color/holo_red_dark"/>
<Button
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="MOVE TO NEXT ACTIVITY"
   android:id="@+id/bt"
   android:onClick="click"
   />
   </LinearLayout>
```

activity_main2.xml

```
<LinearLayout android:layout_width="match_parent" android:layout_height="match_parent"

   android:orientation="vertical"
   android:gravity="center"
   xmlns:android="http://schemas.android.com/apk/res/android">

   <TextView
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/tv"
    />

</LinearLayout>
```

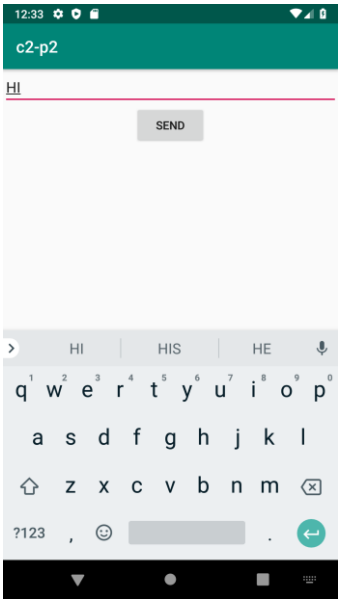
mainActivity.java

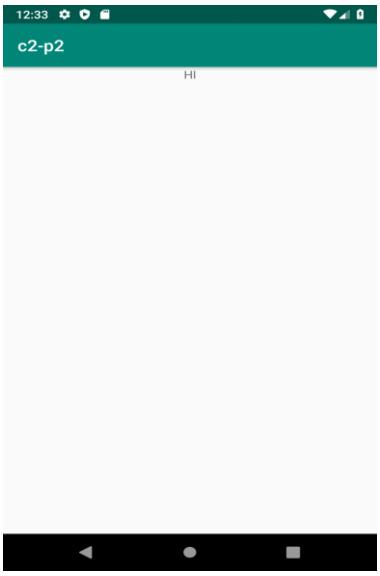
```
package com.example.sjcet.myapplication;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
   Button bt;
   EditText et;
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      bt =findViewById(R.id.bt);
      et =findViewById(R.id.et);
   }
   public void onClick(View v) {
      String str = et.getText().toString();
      Intent intent = new Intent(getApplicationContext(), Main2Activity.class);
      intent.putExtra("message_key", str);
      startActivity(intent);
   }
   }
```

mainActivity2.java

```
package com.example.sjcet.myapplication;

import android.widget.TextView;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
public class Main2Activity extends AppCompatActivity {
   TextView tv;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main2);
      tv =findViewById(R.id.tv);
      Intent intent = getIntent();
      String str = intent.getStringExtra("message_key");
      tv.setText(str);
   }}
```

OUTPUT





4.Create a registration page with full validation and pass the information to the second activity (using shared preference)

Mandatory fields : fname,lname,gender,email,phone number,password,dob(date picker)

MainActivity.xml:

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

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:id="@+id/activity_main"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   >
   <EditText
      android:id="@+id/editTextName"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="Enter First Name"
      android:inputType="textPersonName" />
   <EditText
      android:id="@+id/editTextlName"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:hint="Enter Last Name"
      android:inputType="textPersonName" />
   <EditText
```

```
    android:id="@+id/editTextgender"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Gender"
    android:inputType="textPersonName" />
  <EditText
    android:id="@+id/editTextEmail"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Email"
    android:inputType="textPersonName" />
  <EditText
    android:id="@+id/editTextMobile"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Mobile Number"
    android:inputType="textEmailAddress" />
  <EditText
    android:id="@+id/editTextDob"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Date of Birth (DD/MM/YYYY)"
    android:inputType="date" />
  <EditText
    android:id="@+id/editTextpassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter  Password"
    android:inputType="textPassword" />
  <Button
    android:id="@+id/buttonSubmit"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Submit" />
</LinearLayout>
```

MainActivity.java:

```
package com.example.sjcet.myapplication;

import android.content.Intent;
import android.net.Uri;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
import android.util.Patterns;
import android.view.View;
import android.widget.DatePicker;
```

```
import android.widget.EditText;
import android.widget.Button;
import android.widget.Toast;
import android.content.SharedPreferences;
public class MainActivity extends AppCompatActivity {
   private EditText editTextName, editTextlName,editTextEmail, editTextMobile,
         editTextDob, editTextgender,editTextpassword;
   private Button buttonSubmit;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Button btn_Explicit = (Button)findViewById(R.id.buttonSubmit);
      editTextName =findViewById(R.id.editTextName);
      editTextlName =findViewById(R.id.editTextlName);
      editTextEmail =findViewById(R.id.editTextEmail);
      editTextMobile =findViewById(R.id.editTextMobile);
      editTextDob =findViewById(R.id.editTextDob);
      editTextgender =findViewById(R.id.editTextgender);
      editTextpassword =findViewById(R.id.editTextpassword);
      btn_Explicit.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            checkDataEntered();
            SharedPreferences mypref=getSharedPreferences("activity_main2.xml",0);
            SharedPreferences.Editor editor=mypref.edit();//only write editor
            editor.putString("fname",editTextName.getText().toString()); //bundle the data
            editor.putString("lname",editTextlName.getText().toString());
            editor.putString("gender",editTextgender.getText().toString());
            editor.putString("phone",editTextMobile.getText().toString());
            editor.putString("pwd",editTextpassword.getText().toString());
            editor.putString("email",editTextEmail.getText().toString());
            editor.putString("dob",editTextDob.getText().toString());
            editor.commit();
            // String str = editTextName.getText().toString();
            //String str1 = editTextName.getText().toString();
            Intent intent = new Intent(getApplicationContext(), Main2Activity.class);
           // intent.putExtra("message_key", str);
           startActivity(intent);
         }
      });
   }
   boolean isEmail(EditText text) {
      CharSequence email = text.getText().toString();
      return (!TextUtils.isEmpty(email) && Patterns.EMAIL_ADDRESS.matcher(email).matches());
   }
   boolean isEmpty(EditText text) {
      CharSequence str = text.getText().toString();
      return TextUtils.isEmpty(str);
   }
   void checkDataEntered() {
      if (isEmpty(editTextName)) {
         Toast t = Toast.makeText(this, "You must enter first name to register!", Toast.LENGTH_SHORT);
         t.show();
```

```
      }
      if (isEmpty(editTextlName)) {
         editTextlName.setError("Last name is required!");
      }
      if (isEmpty(editTextMobile)) {
         editTextMobile.setError("mobile number is required!");
      }
      if (isEmpty(editTextgender)) {
         editTextgender.setError("Gender is required!");
      }
      if (isEmpty(editTextpassword)) {
         editTextpassword.setError("Password is required!");
      }
      if (isEmpty(editTextDob)) {
         editTextDob.setError("DOB is required!");
      }
      if (isEmail(editTextEmail) == false) {
         editTextEmail.setError("Enter valid email!");
      }
   }
}
```

MainActivity.xml:

```
<LinearLayout android:layout_width="match_parent" android:layout_height="match_parent"

   android:orientation="vertical"
   android:gravity="center"
   xmlns:android="http://schemas.android.com/apk/res/android">
   <TextView
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/tv"
      />
</LinearLayout>
```

MainActivity.java:

```
package com.example.sjcet.myapplication;

import android.content.SharedPreferences;
import android.widget.TextView;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
public class Main2Activity extends AppCompatActivity {
   TextView tv;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main2);
      tv =findViewById(R.id.tv);
      Intent intent = getIntent();
```

```
    SharedPreferences mypref=getSharedPreferences("activity_main2.xml",0);
    String str = mypref.getString("tv",null);
    tv.setText(str);
  }
}
```

CYCLE-3

1.Simple login page using Relative Layout

Activity_main.xml:

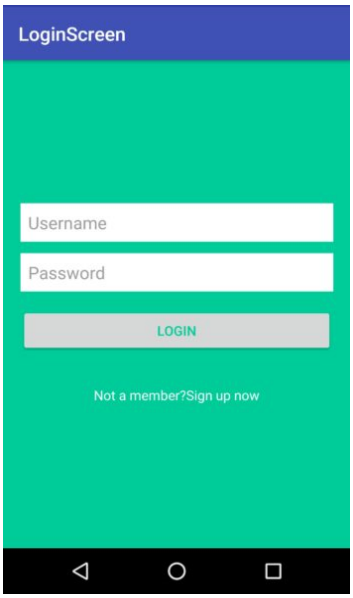
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:id="@+id/activity_main"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:background="#00CC99">


  <EditText
    android:id="@+id/text1"
    android:hint="Username"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="150dp"
    android:layout_marginLeft="18dp"
    android:layout_marginRight="18dp"
    android:padding="8dp"
    android:background="#fff" />

  <EditText
    android:id="@+id/text2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="18dp"
    android:layout_marginRight="18dp"
    android:padding="8dp"
    android:background="#fff"
    android:hint="Password"
    android:layout_marginTop="12dp"
    android:layout_below="@+id/text1" />

  <Button
    android:id="@+id/b1"
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:text="Login"
    android:textColor="#00CC99"
    android:layout_below="@+id/text2"
    android:layout_marginTop="17dp"
    android:layout_alignStart="@+id/text2"
    android:layout_alignEnd="@+id/text2" />

  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/text3"
    android:textColor="#fff"
    android:text="Not a member?Sign up now"
    android:layout_below="@+id/b1"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="34dp" />
</RelativeLayout>
```

MainActivity.java:

```
package com.codedost.loginscreen;
import android.support.v7.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);
  }}
```

OUTPUT:



2.Array adapter using list view

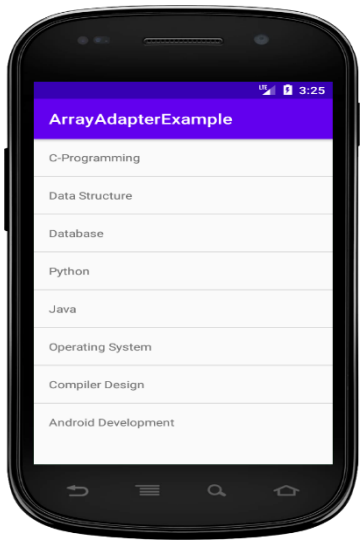
Activity_main.xml:

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

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

</RelativeLayout>


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

   <TextView
      android:id="@+id/itemTextView"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_gravity="center" />

</LinearLayout>
```

MainActivity.java:

```
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

   ListView simpleListView;

   // array objects
   String courseList[] = {"C-Programming", "Data Structure", "Database", "Python",
                  "Java", "Operating System", "Compiler Design", "Android Development"};

   @Override
   protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        simpleListView = (ListView) findViewById(R.id.simpleListView);

        ArrayAdapter<String> arrayAdapter = new ArrayAdapter<String>(this,
                R.layout.item_view, R.id.itemTextView, courseList);
        simpleListView.setAdapter(arrayAdapter);
    }
}
```



3.Develop an application that toggle image using frame layout

Activity_main.xml:

```
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent">

 <ImageView
    android:id="@+id/imageview"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:scaleType="fitCenter"
    android:src="@drawable/piq1" />

<Button
    android:id="@+id/next"
    android:layout_width="wrap_content"
    android:layout_height="30dp"
    android:layout_marginBottom="15dp"
    android:layout_marginRight="10dp"
    android:layout_gravity="bottom|right"
    android:paddingTop="2dp"
```

```
   android:paddingBottom="2dp"
   android:background="@drawable/buttonback"
   android:textColor="#000000"
   android:text="Next" />

 </FrameLayout>
```

MainActivity.java:

```
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;

public class Piqlout extends Activity {

@Override
protected void onCreate(Bundle savedInstanceState) {
   // TODO Auto-generated method stub
   super.onCreate(savedInstanceState);
   setContentView(R.layout.piq);

   Button next= (Button) findViewById(R.id.next);


   if (next.getText().equals("Next")) {
   next.setOnClickListener(new View.OnClickListener() {

      @Override
      public void onClick(View v) {
         // TODO Auto-generated method stub
         ImageView img = (ImageView) findViewById(R.id.imageview);



         img.setImageResource(R.drawable.piq2);
         Button next= (Button) findViewById(R.id.next);
         next.setText("Prev");
      }
   });
   }
   if (next.getText().equals("Prev")){
   next.setOnClickListener(new View.OnClickListener() {

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


            ImageView img = (ImageView)     findViewById(R.id.imageview);
            img.setImageResource(R.drawable.piq1);
            Button next= (Button) findViewById(R.id.next);
            next.setText("Next");
      }
```

```
   });
   }
}
```

4.Demonstrate activity lifecycle.

Mainactivity.xml:

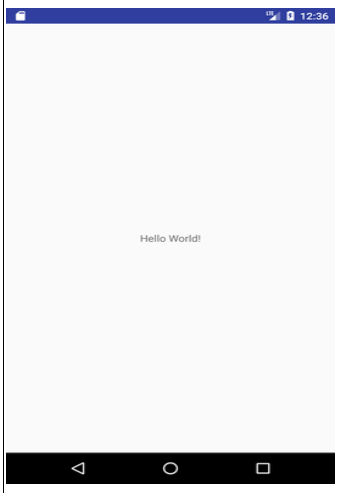
```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"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

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Hello World!"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintLeft_toLeftOf="parent"
      app:layout_constraintRight_toRightOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

</android.support.constraint.ConstraintLayout>
```

MainActivity.java:

```
package example.javatpoint.com.activitylifecycle;
import android.app.Activity;
import android.os.Bundle;
import android.util.Log;

public class MainActivity extends Activity {

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Log.d("lifecycle","onCreate invoked");
   }
   @Override
   protected void onStart() {
      super.onStart();
      Log.d("lifecycle","onStart invoked");
   }
   @Override
   protected void onResume() {
      super.onResume();
      Log.d("lifecycle","onResume invoked");
   }
```

```
    @Override
    protected void onPause() {
        super.onPause();
        Log.d("lifecycle","onPause invoked");
    }
    @Override
    protected void onStop() {
        super.onStop();
        Log.d("lifecycle","onStop invoked");
    }
    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("lifecycle","onRestart invoked");
    }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("lifecycle","onDestroy invoked");
    }
}
```

OUTPUT:



5.Taking camera with list view

Mainactivity.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="https://schemas.android.com/apk/res/android"
    xmlns:app="https://schemas.android.com/apk/res-auto"
    xmlns:tools="https://schemas.android.com/tools"
    android:id="@+id/content_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
```

```
  android:paddingRight="@dimen/activity_horizontal_margin"
  android:paddingTop="@dimen/activity_vertical_margin"
  android:background="#000000"
  app:layout_behavior="@string/appbar_scrolling_view_behavior"
  tools:context="com.journaldev.imagepicker.MainActivity"
  tools:showIn="@layout/activity_main">


  <RelativeLayout
    android:layout_width="250dp"
    android:layout_height="250dp"
    android:layout_centerHorizontal="true"
    android:layout_centerVertical="true"
    android:background="@drawable/image_border"
    android:clickable="true"
    android:orientation="vertical">


    <ImageView
      android:id="@+id/imageView"
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:adjustViewBounds="true"
      android:scaleType="centerCrop" />

  </RelativeLayout>

  <de.hdodenhof.circleimageview.CircleImageView
    android:id="@+id/img_profile"
    android:layout_width="100dp"
    android:layout_height="100dp"
    android:layout_gravity="center_horizontal"
    android:src="@drawable/profile"
    app:civ_border_width="5dp"
    app:civ_border_color="#FFFFFF"
    android:layout_alignParentBottom="true"
    android:layout_centerHorizontal="true" />

</RelativeLayout>
```

MainActivity.java:

```
public class MainActivity extends AppCompatActivity {

  Bitmap myBitmap;
  Uri picUri;

  private ArrayList permissionsToRequest;
  private ArrayList permissionsRejected = new ArrayList();
  private ArrayList permissions = new ArrayList();

  private final static int ALL_PERMISSIONS_RESULT = 107;

  @Override
```

```
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Toolbar toolbar = (Toolbar) findViewById(R.id.toolbar);
    setSupportActionBar(toolbar);

    FloatingActionButton fab = (FloatingActionButton) findViewById(R.id.fab);
    fab.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
        startActivityForResult(getPickImageChooserIntent(), 200);
      }
    });


    permissions.add(CAMERA);
    permissionsToRequest = findUnAskedPermissions(permissions);
    //get the permissions we have asked for before but are not granted..
    //we will store this in a global list to access later.


    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {


      if (permissionsToRequest.size() > 0)
        requestPermissions(permissionsToRequest.toArray(new String[permissionsToRequest.size()]),
ALL_PERMISSIONS_RESULT);
    }

  }

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

  @Override
  public boolean onOptionsItemSelected(MenuItem item) {
    // Handle action bar item clicks here. The action bar will
    // automatically handle clicks on the Home/Up button, so long
    // as you specify a parent activity in AndroidManifest.xml.
    int id = item.getItemId();

    //noinspection SimplifiableIfStatement
    if (id == R.id.action_settings) {
      return true;
    }

    return super.onOptionsItemSelected(item);
  }
```

```
  /**
   * Create a chooser intent to select the source to get image from.<br />
   * The source can be camera's (ACTION_IMAGE_CAPTURE) or gallery's (ACTION_GET_CONTENT).<br />
   * All possible sources are added to the intent chooser.
   */
  public Intent getPickImageChooserIntent() {

      // Determine Uri of camera image to save.
      Uri outputFileUri = getCaptureImageOutputUri();

      List allIntents = new ArrayList();
      PackageManager packageManager = getPackageManager();

      // collect all camera intents
      Intent captureIntent = new Intent(android.provider.MediaStore.ACTION_IMAGE_CAPTURE);
      List listCam = packageManager.queryIntentActivities(captureIntent, 0);
      for (ResolveInfo res : listCam) {
          Intent intent = new Intent(captureIntent);
          intent.setComponent(new ComponentName(res.activityInfo.packageName, res.activityInfo.name));
          intent.setPackage(res.activityInfo.packageName);
          if (outputFileUri != null) {
              intent.putExtra(MediaStore.EXTRA_OUTPUT, outputFileUri);
          }
          allIntents.add(intent);
      }

      // collect all gallery intents
      Intent galleryIntent = new Intent(Intent.ACTION_GET_CONTENT);
      galleryIntent.setType("image/*");
      List listGallery = packageManager.queryIntentActivities(galleryIntent, 0);
      for (ResolveInfo res : listGallery) {
          Intent intent = new Intent(galleryIntent);
          intent.setComponent(new ComponentName(res.activityInfo.packageName, res.activityInfo.name));
          intent.setPackage(res.activityInfo.packageName);
          allIntents.add(intent);
      }

      // the main intent is the last in the list (fucking android) so pickup the useless one
      Intent mainIntent = allIntents.get(allIntents.size() - 1);
      for (Intent intent : allIntents) {
          if (intent.getComponent().getClassName().equals("com.android.documentsui.DocumentsActivity")) {
              mainIntent = intent;
              break;
          }
      }
      allIntents.remove(mainIntent);

      // Create a chooser from the main intent
      Intent chooserIntent = Intent.createChooser(mainIntent, "Select source");

      // Add all other intents
      chooserIntent.putExtra(Intent.EXTRA_INITIAL_INTENTS, allIntents.toArray(new
Parcelable[allIntents.size()]));
```

```
    return chooserIntent;
  }


  /**
   * Get URI to image received from capture by camera.
   */
  private Uri getCaptureImageOutputUri() {
    Uri outputFileUri = null;
    File getImage = getExternalCacheDir();
    if (getImage != null) {
      outputFileUri = Uri.fromFile(new File(getImage.getPath(), "profile.png"));
    }
    return outputFileUri;
  }

  @Override
  protected void onActivityResult(int requestCode, int resultCode, Intent data) {

    Bitmap bitmap;
    if (resultCode == Activity.RESULT_OK) {

      ImageView imageView = (ImageView) findViewById(R.id.imageView);

      if (getPickImageResultUri(data) != null) {
        picUri = getPickImageResultUri(data);

        try {
          myBitmap = MediaStore.Images.Media.getBitmap(this.getContentResolver(), picUri);
          myBitmap = rotateImageIfRequired(myBitmap, picUri);
          myBitmap = getResizedBitmap(myBitmap, 500);

          CircleImageView croppedImageView = (CircleImageView) findViewById(R.id.img_profile);
          croppedImageView.setImageBitmap(myBitmap);
          imageView.setImageBitmap(myBitmap);

        } catch (IOException e) {
          e.printStackTrace();
        }

      } else {
        bitmap = (Bitmap) data.getExtras().get("data");
        myBitmap = bitmap;
        CircleImageView croppedImageView = (CircleImageView) findViewById(R.id.img_profile);
        if (croppedImageView != null) {
          croppedImageView.setImageBitmap(myBitmap);
        }

        imageView.setImageBitmap(myBitmap);
}
 }
}

  private static Bitmap rotateImageIfRequired(Bitmap img, Uri selectedImage) throws IOException {
```

```
    ExifInterface ei = new ExifInterface(selectedImage.getPath());
    int orientation = ei.getAttributeInt(ExifInterface.TAG_ORIENTATION,
ExifInterface.ORIENTATION_NORMAL);

    switch (orientation) {
      case ExifInterface.ORIENTATION_ROTATE_90:
        return rotateImage(img, 90);
      case ExifInterface.ORIENTATION_ROTATE_180:
        return rotateImage(img, 180);
      case ExifInterface.ORIENTATION_ROTATE_270:
        return rotateImage(img, 270);
      default:
        return img;
    }
  }

  private static Bitmap rotateImage(Bitmap img, int degree) {
    Matrix matrix = new Matrix();
    matrix.postRotate(degree);
    Bitmap rotatedImg = Bitmap.createBitmap(img, 0, 0, img.getWidth(), img.getHeight(), matrix, true);
    img.recycle();
    return rotatedImg;
  }

  public Bitmap getResizedBitmap(Bitmap image, int maxSize) {
    int width = image.getWidth();
    int height = image.getHeight();

    float bitmapRatio = (float) width / (float) height;
    if (bitmapRatio > 0) {
      width = maxSize;
      height = (int) (width / bitmapRatio);
    } else {
      height = maxSize;
      width = (int) (height * bitmapRatio);
    }
    return Bitmap.createScaledBitmap(image, width, height, true);
  }


  /**
   * Get the URI of the selected image from {@link #getPickImageChooserIntent()}.<br />
   * Will return the correct URI for camera and gallery image.
   *
   * @param data the returned data of the activity result
   */
  public Uri getPickImageResultUri(Intent data) {
    boolean isCamera = true;
    if (data != null) {
      String action = data.getAction();
      isCamera = action != null && action.equals(MediaStore.ACTION_IMAGE_CAPTURE);
    }
```

```
    return isCamera ? getCaptureImageOutputUri() : data.getData();
}

@Override
protected void onSaveInstanceState(Bundle outState) {
    super.onSaveInstanceState(outState);

    // save file url in bundle as it will be null on scren orientation
    // changes
    outState.putParcelable("pic_uri", picUri);
}

@Override
protected void onRestoreInstanceState(Bundle savedInstanceState) {
    super.onRestoreInstanceState(savedInstanceState);

    // get the file url
    picUri = savedInstanceState.getParcelable("pic_uri");
}

private ArrayList findUnAskedPermissions(ArrayList wanted) {
    ArrayList result = new ArrayList();

    for (String perm : wanted) {
        if (!hasPermission(perm)) {
            result.add(perm);
        }
    }

    return result;
}

private boolean hasPermission(String permission) {
    if (canMakeSmores()) {
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
            return (checkSelfPermission(permission) == PackageManager.PERMISSION_GRANTED);
        }
    }
    return true;
}

private void showMessageOKCancel(String message, DialogInterface.OnClickListener okListener) {
    new AlertDialog.Builder(this)
            .setMessage(message)
            .setPositiveButton("OK", okListener)
            .setNegativeButton("Cancel", null)
            .create()
            .show();
}

private boolean canMakeSmores() {
    return (Build.VERSION.SDK_INT > Build.VERSION_CODES.LOLLIPOP_MR1);
}
```

```
  @TargetApi(Build.VERSION_CODES.M)
  @Override
  public void onRequestPermissionsResult(int requestCode, String[] permissions, int[] grantResults) {

     switch (requestCode) {

        case ALL_PERMISSIONS_RESULT:
           for (String perms : permissionsToRequest) {
              if (hasPermission(perms)) {

              } else {

                 permissionsRejected.add(perms);
              }
           }

           if (permissionsRejected.size() > 0) {


              if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
                 if (shouldShowRequestPermissionRationale(permissionsRejected.get(0))) {
                    showMessageOKCancel("These permissions are mandatory for the application. Please allow
access.",
                          new DialogInterface.OnClickListener() {
                             @Override
                             public void onClick(DialogInterface dialog, int which) {
                                if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {

                                   //Log.d("API123", "permisionrejected " + permissionsRejected.size());

                                   requestPermissions(permissionsRejected.toArray(new
String[permissionsRejected.size()]), ALL_PERMISSIONS_RESULT);
                                }
                             }
                          });
                    return;
                 }
              }

           }

           break;
     }

  }
}
```