1.Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences

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

  <EditText
    android:id="@+id/et1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"

    android:layout_marginTop="22dp"
    android:hint="username"/>

  <EditText
    android:id="@+id/et2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/et1"
    android:layout_alignRight="@+id/et1"
    android:layout_alignParentTop="true"
    android:layout_marginTop="105dp"
    android:layout_marginEnd="-31dp"
    android:layout_marginRight="-31dp"
    android:hint="password"/>



</RelativeLayout>
```

Mainactivity.java

```
package com.example.sjcet.sharedprefernce;

import android.content.SharedPreferences;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

  EditText et1,et2;
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        et1=(EditText)findViewById(R.id.et1);
        et2=(EditText)findViewById(R.id.et2);
    }

    protected void onStop() {
        super.onStop();

        SharedPreferences mypref=getSharedPreferences("myprefsfile",0);
        SharedPreferences.Editor editor=mypref.edit();
        editor.putString("user",et1.getText().toString());
        editor.putString("pass",et2.getText().toString());
        editor.commit();

    }

    protected void onResume() {
        super.onResume();

        SharedPreferences mypref=getSharedPreferences("myprefsfile",0);

        String username=mypref.getString("user",null);
        String password=mypref.getString("pass",null);
        et1.setText(username);
        et2.setText(password);
    }

}
```

2. Design a simple Calculator using GridLayout and Cascaded LinearLayout

```
<?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">

  <HorizontalScrollView
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1">
    <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="match_parent"
      android:orientation="vertical">

      <TextView
        android:id="@+id/showValues"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="50dp" />

      <TextView
        android:id="@+id/showResults"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="100dp" />
    </LinearLayout>
  </HorizontalScrollView>

  <GridLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="2"
    android:columnCount="4"
    android:orientation="horizontal"
    android:rowCount="5"
    android:useDefaultMargins="true">

    <Button
      android:id="@+id/delete"

      android:layout_columnSpan="4"
      android:text="C" />


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

```
    android:text="1" />

<Button
    android:id="@+id/b2"

    android:text="2" />

<Button
    android:id="@+id/b3"

    android:text="3" />

<Button
    android:id="@+id/divide"

    android:text="/" />

<Button
    android:id="@+id/b4"

    android:text="4" />

<Button
    android:id="@+id/b5"

    android:text="5" />

<Button
    android:id="@+id/b6"

    android:text="6" />

<Button
    android:id="@+id/multiply"

    android:text="*" />

<Button
    android:id="@+id/b7"

    android:text="7" />

<Button
    android:id="@+id/b8"

    android:text="8" />

<Button
    android:id="@+id/b9"

    android:text="9" />

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

```
        android:text="-" />

    <Button
        android:id="@+id/bpoint"

        android:text="." />

    <Button
        android:id="@+id/b0"

        android:text="0" />

    <Button
        android:id="@+id/equal"

        android:text="=" />

    <Button
        android:id="@+id/add"

        android:text="+" />

  </GridLayout>

</LinearLayout>
```

Mainactivity.java

```
package com.example.sjcet.gridcalculator;

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 number, values;
  double num1=0, num2=0, ans = 0;
  boolean add, minus, product, divide, decimal;
  Button b1, b2, b3, b4, b5, b6, b7, b8, b9, b0, sum, sub, mul, div, deci, equal, clear;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
```

```
number = findViewById(R.id.showResults);
values = findViewById(R.id.showValues);
b0 = findViewById(R.id.b0);
b1 = findViewById(R.id.b1);
b2 = findViewById(R.id.b2);
b3 = findViewById(R.id.b3);
b4 = findViewById(R.id.b4);
b5 = findViewById(R.id.b5);
b6 = findViewById(R.id.b6);
b7 = findViewById(R.id.b7);
b8 = findViewById(R.id.b8);
b9 = findViewById(R.id.b9);
sum = findViewById(R.id.add);
sub = findViewById(R.id.subtract);
mul = findViewById(R.id.multiply);
div = findViewById(R.id.divide);
deci = findViewById(R.id.bpoint);
equal = findViewById(R.id.equal);
clear = findViewById(R.id.delete);



b0.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "0");
    }
});
b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "1");
    }
});
b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "2");
    }
});
b3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "3");
    }
});
b4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "4");
    }
});
b5.setOnClickListener(new View.OnClickListener() {
    @Override
```

```
    public void onClick(View view) {
        number.setText(number.getText() + "5");
    }
});
b6.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "6");
    }
});
b7.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "7");
    }
});
b8.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "8");
    }
});
b9.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + "9");
    }
});
deci.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText(number.getText() + ".");
    }
});
clear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        number.setText("");
        values.setText("");
    }
});
sum.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (number.getText() != null) {
            num1 = Float.parseFloat(number.getText() + "");
            add = true;
        }
        values.setText(number.getText() + " +");
        number.setText(null);
    }
});
sub.setOnClickListener(new View.OnClickListener() {
    @Override
```

```
    public void onClick(View view) {
        if (number.getText() != null) {
            num1 = Float.parseFloat(number.getText() + "");
            minus = true;
        }
        values.setText(number.getText() + " -");
        number.setText(null);
    }
});
mul.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (number.getText() != null) {
            num1 = Float.parseFloat(number.getText() + "");
            product = true;
        }
        values.setText(number.getText() + " *");
        number.setText(null);
    }
});
div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (number.getText() != null) {
            num1 = Float.parseFloat(number.getText() + "");
            divide = true;
        }
        values.setText(number.getText() + " /");
        number.setText(null);
    }
});
equal.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (add == true || minus == true || product == true || divide == true) {
            if (number.getText() != null ) {
                num2 = Float.parseFloat(number.getText() + "");
                values.setText(values.getText() + " " + number.getText());

                if (add == true)
                    ans = num1 + num2;
                add = false;
                if (minus == true)
                    ans = num1 - num2;
                minus = false;
                if (product == true)
                    ans = num1 * num2;
                product = false;
                if (divide == true)
                    ans = num1 / num2;
                divide = false;

                number.setText(ans + "");
                num2 = ans;
```

```
                num1 = 0;
            }
        }
    }
});
}
}
```


11:27
LTE
gridcalculator
7 * 9
63.0
C
1
2
3
/
4
5
6
*
7
8
9
-
.
0
=
+

3. Create a Facebook page using RelativeLayout; set properties using .xml file

Mainactivity.xml

```
<RelativeLayout android:layout_width="match_parent"
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_height="match_parent"
  android:background="#3b5998"
  android:orientation="vertical">

  <ImageView
     android:layout_width="300dp"
     android:layout_height="80dp"
     android:layout_gravity="center"

     android:src="@drawable/logo"
     android:id="@+id/im1"
     android:layout_marginLeft="60dp"
     android:layout_marginTop="60dp"
     android:layout_marginRight="20dp"
     />

  <!--EditText for user name or email address-->
  <EditText
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_marginLeft="20dp"
     android:layout_marginTop="80dp"
     android:layout_marginRight="20dp"
     android:backgroundTint="#d3d3d3"
     android:hint="Username or Email"
     android:inputType="textEmailAddress"
     android:maxLines="1"
     android:padding="10dp"
     android:textColor="#ffffff"
     android:textColorHint="#d3d3d3"
     android:id="@+id/ed1"
     android:layout_below="@+id/im1"/>

  <!--EditText for user password-->
  <EditText
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_marginLeft="20dp"
     android:layout_marginTop="10dp"
     android:layout_marginRight="20dp"
     android:backgroundTint="#d3d3d3"
     android:hint="Password"
     android:inputType="textPassword"
     android:maxLines="1"
     android:padding="10dp"
     android:textColor="#ffffff"
```

```
    android:textColorHint="#d3d3d3"
    android:id="@+id/ed2"
    android:layout_below="@+id/ed1"/>

  <!-- Login Button for Facebook Log In-->
  <Button
    android:id="@+id/btnLogin"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="35dp"
    android:layout_marginRight="20dp"
    android:backgroundTint="#5c6bc0"
    android:padding="10dp"
    android:text="Log In"
    android:textColor="#ffffff"
    android:textSize="16sp"
    android:textStyle="bold"
    android:layout_below="@+id/ed2"/>
</RelativeLayout>
```

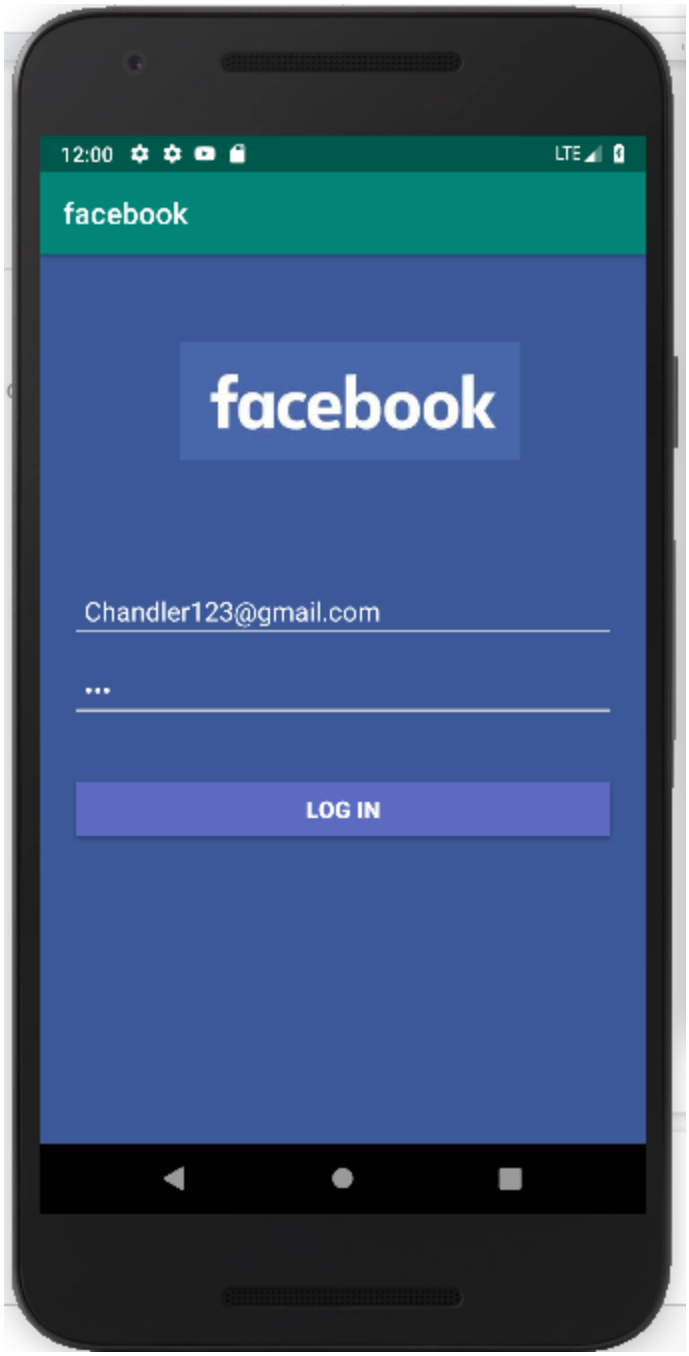
Mainactivity.java

```
package com.example.sjcet.facebook;

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);
  }
}
```


12:00
LTE
facebook
facebook
Chandler123@gmail.com
...
LOG IN

4. Develop an application that toggles image using FrameLayout

Mainactivity.xml

```
<FrameLayout android:layout_width="match_parent"
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_height="match_parent"
  android:id="@+id/framelayout">


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


  <Button
     android:id="@+id/b1"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:onClick="click"
     android:text="toggle image"/>


</FrameLayout>
```

Mainactivity.java

```
package com.example.sjcet.toggleimage;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

  ImageView img;
  boolean onclick=false;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
    }

    public void click(View view) {

        ImageView img = (ImageView) findViewById(R.id.imageview);

        if(!onclick){

            img.setImageResource(R.drawable.ones);
            onclick=true;
        }


       else if(onclick){

            img.setImageResource(R.drawable.two);

            onclick=false;

        }

    }
}
```

Output