CYCLE-2

Question 2: Design a simple calculator using GridLayout and Cascaded LinearLayout

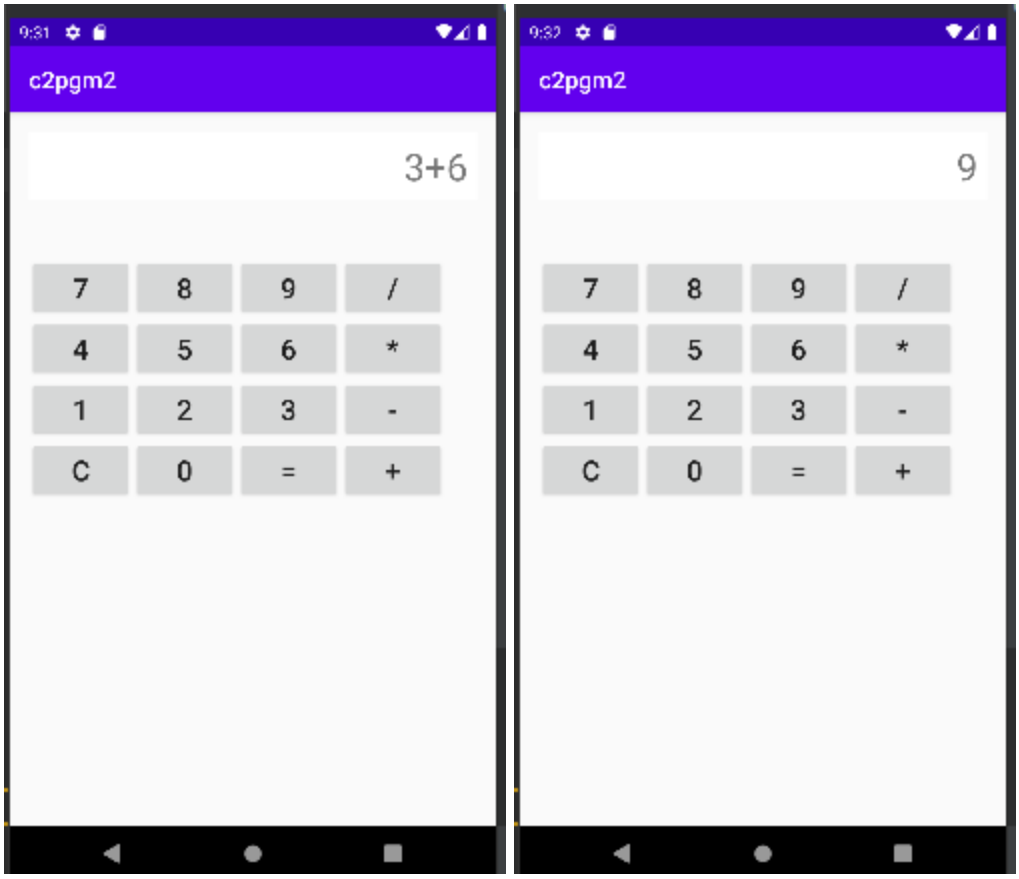
```
<?xml version="1.0" encoding="UTF-8"?>


<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"
    android:padding="16dp"
    tools:context=".MainActivity">

    <!-- Display TextView -->

    <!-- Calculator Buttons using GridLayout -->
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="end"
        android:layout_marginBottom="16dp"
        android:background="@android:color/background_light"
        android:gravity="end"
        android:padding="8dp"
        android:text="0"
        android:textSize="32sp" />
    <WebView
        android:id="@+id/webView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="end"
        android:layout_marginBottom="16dp"
        android:background="@android:color/background_light"
        android:padding="8dp"
```

```
        android:textSize="32sp" />

    <GridLayout
        android:id="@+id/gridLayout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:columnCount="4"
        android:rowCount="5"
        android:layout_marginTop="16dp"
        android:layout_marginBottom="16dp">



        <!-- Buttons will be added dynamically in code -->

    </GridLayout>

</LinearLayout>

//JAVA
package com.example.c2pgm2;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.webkit.JavascriptInterface;
import android.webkit.WebView;
import android.widget.Button;
import android.widget.GridLayout;
import android.widget.TextView;


public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    private TextView textView;
    private String currentInput = "";
    private String operator = "";
    private double firstOperand = 0;
```

```
private double secondOperand = 0;
private boolean isNewInput = true;

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

    // Initialize TextView
    textView = findViewById(R.id.textView);

    // Initialize GridLayout
    GridLayout gridLayout = findViewById(R.id.gridLayout);

    // Define button labels
    String[] buttonLabels = {
            "7", "8", "9", "/",
            "4", "5", "6", "*",
            "1", "2", "3", "-",
            "C", "0", "=", "+"
    };

    // Create and add buttons to GridLayout
    for (String label : buttonLabels) {
        Button button = new Button(this);
        button.setText(label);
        button.setTextSize(24);
        button.setOnClickListener(this);
        gridLayout.addView(button);
    }
}

@Override
public void onClick(View v) {
    Button button = (Button) v;
    String buttonText = button.getText().toString();

    switch (buttonText) {
        case "=":
            calculateResult();
```

```
            break;
        case "C":
            clearInput();
            break;
        default:
            handleInput(buttonText);
            break;
    }
}

private void handleInput(String input) {
    if (isNewInput) {
        currentInput = input;
        isNewInput = false;
    } else {
        currentInput += input;
    }
    updateDisplay();
}

private void clearInput() {
    currentInput = "";
    operator = "";
    firstOperand = 0;
    secondOperand = 0;
    isNewInput = true;
    updateDisplay();
}

private void calculateResult() {
    if (!isNewInput) {
        String expression = currentInput;
        try {
            // Use JavaScript eval() to evaluate the expression
            WebView webView = new WebView(this);
            webView.getSettings().setJavaScriptEnabled(true);
            webView.addJavascriptInterface(new Object() {
                @JavascriptInterface
                public void processHTML(String html) {
                    // Process the result returned from JavaScript
```

```
                currentInput = html;
                isNewInput = true;
                updateDisplay();
            }
        }, "Android");

        webView.evaluateJavascript("javascript:Android.processHTML(eval('" + expression +
"'))", null);
      } catch (Exception e) {
        currentInput = "Error: Invalid expression";
        isNewInput = true;
        updateDisplay();
      }
    }
  }


  private void updateDisplay() {
    textView.setText(currentInput);
  }
}
```

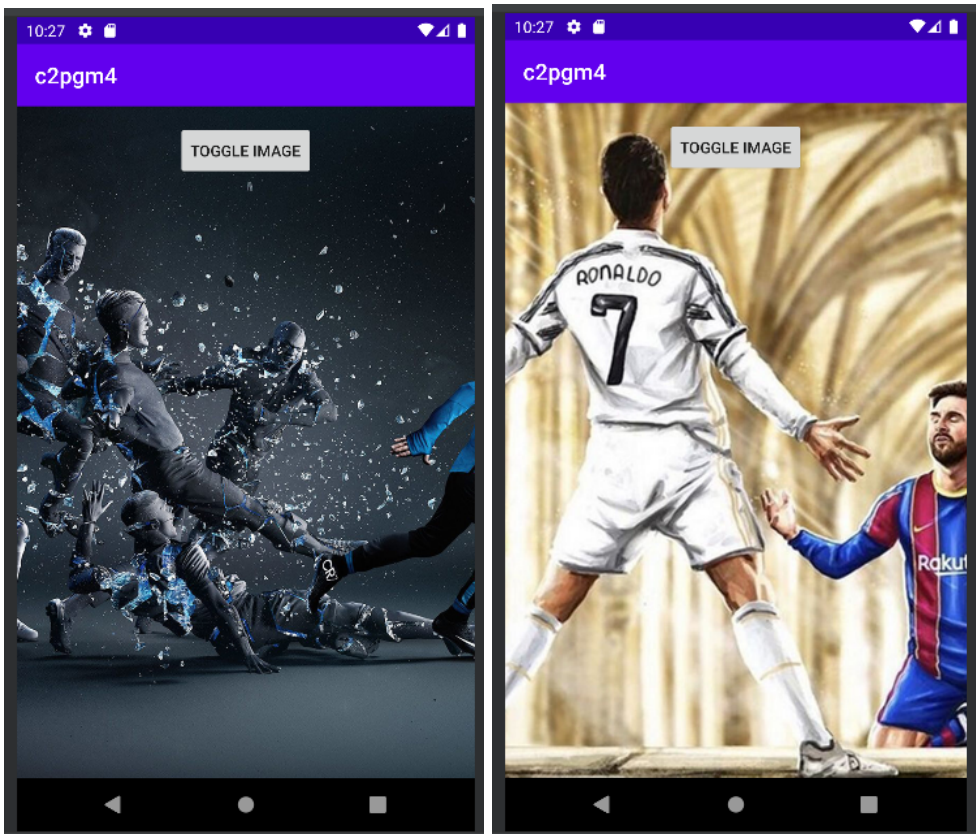


Question 4: Develop an application that toggles image using FrameLayout

```
<?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">

    <FrameLayout
        android:id="@+id/frameLayout"
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <ImageView
            android:id="@+id/imageView1"
            android:layout_width="match_parent"
            android:layout_height="match_parent"
```

```
            android:src="@drawable/image1"
            android:scaleType="centerCrop"
            android:visibility="visible" />

        <ImageView
            android:id="@+id/imageView2"
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:src="@drawable/image2"
            android:scaleType="centerCrop"
            android:visibility="invisible" />

    </FrameLayout>

    <Button
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Toggle Image"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>

</RelativeLayout>

//JAVA
package com.example.c2pgm4;

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

public class MainActivity extends AppCompatActivity {
    private FrameLayout frameLayout;
    private ImageView imageView1;
    private ImageView imageView2;
    private Button toggleButton;
    private boolean isImage1Visible = true;
```

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

        frameLayout = findViewById(R.id.frameLayout);
        imageView1 = findViewById(R.id.imageView1);
        imageView2 = findViewById(R.id.imageView2);
        toggleButton = findViewById(R.id.toggleButton);

        toggleButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (isImage1Visible) {
                    imageView1.setVisibility(View.INVISIBLE);
                    imageView2.setVisibility(View.VISIBLE);
                } else {
                    imageView1.setVisibility(View.VISIBLE);
                    imageView2.setVisibility(View.INVISIBLE);
                }
                isImage1Visible = !isImage1Visible;
            }
        });
    }
}
```

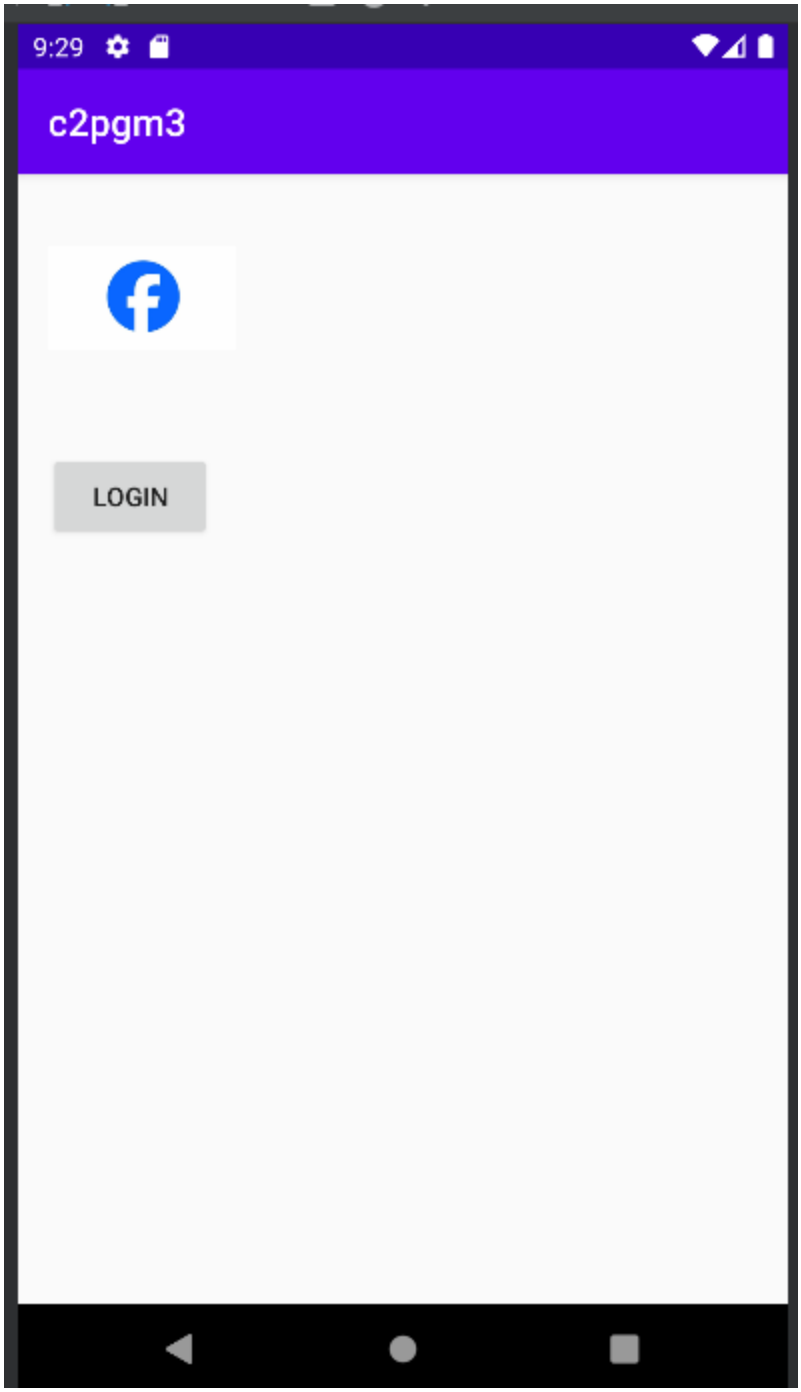


Question 3: Create a Facebook page using RelativeLayout; set properties using=.xml file

```
<?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">

    <!-- Profile Picture -->
    <ImageView
        android:id="@+id/profilePicture"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:src="@drawable/f"
        android:layout_margin="16dp"
        android:contentDescription="TODO" />

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

```
        android:layout_below="@+id/profilePicture"
        android:layout_margin="16dp"
        android:layout_marginEnd="16dp"
        android:layout_marginRight="16dp"

        android:text="Login" />

</RelativeLayout>

//JAVA
package com.example.c2pgm3;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent;
import android.net.Uri;
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 loginButton = findViewById(R.id.loginButton);
        loginButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                openFacebook();
            }
        });
    }

    private void openFacebook() {
        String facebookUrl = "https://www.facebook.com"; // Or use the actual Facebook URL

        try {
```

```
            Intent intent = new Intent(Intent.ACTION_VIEW);
            intent.setData(Uri.parse("fb://facewebmodal/f?href=" + facebookUrl));
            startActivity(intent);
        } catch (Exception e) {
            // Facebook app isn't installed, open the website
            Intent intent = new Intent(Intent.ACTION_VIEW);
            intent.setData(Uri.parse(facebookUrl));
            startActivity(intent);
        }
    }
}
```



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

<?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"
tools:ignore="HardcodedText">

<TextView
    android:id="@+id/textview"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="32dp"
    android:text="Registration"
    android:textColor="@android:color/black"
    android:textSize="24sp" />

<!--EditText to take the data from the user and save the data in SharedPreferences-->
<EditText
    android:id="@+id/edit1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textview"
    android:layout_marginStart="16dp"
    android:layout_marginTop="8dp"
```

```
    android:layout_marginEnd="16dp"
    android:hint="Enter your name"
    android:padding="10dp" />

<!--EditText to take the data from the user and save the data in SharedPreferences-->
<EditText
    android:id="@+id/edit2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/edit1"
    android:layout_marginStart="16dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="16dp"
    android:hint="Enter your age"
    android:inputType="number"
    android:padding="10dp" />

<EditText
    android:id="@+id/edit3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/edit2"
    android:layout_marginStart="16dp"
    android:layout_marginTop="8dp"
```

```
        android:layout_marginEnd="16dp"
        android:hint="Enter your email"
        android:padding="10dp"/>

    <EditText
        android:id="@+id/edit4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/edit3"
        android:layout_marginStart="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp"
        android:hint="Enter your password"
        android:padding="10dp"/>
</RelativeLayout>
```

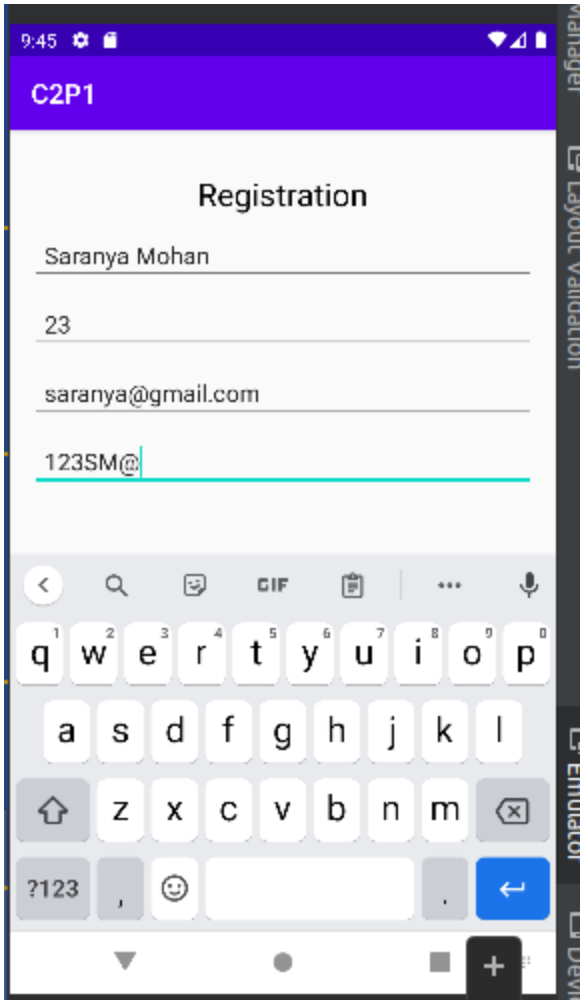
//java

```
package com.example.c2p1;

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

    public class MainActivity extends AppCompatActivity {
        private EditText name, age, email, password;
```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    name = findViewById(R.id.edit1);
    age = findViewById(R.id.edit2);
    email = findViewById(R.id.edit3);
    password = findViewById(R.id.edit4);
}

@Override
protected void onResume() {
    super.onResume();
    // Fetching the stored data from the SharedPreference
    SharedPreferences sh = getSharedPreferences("MySharedPref", MODE_PRIVATE);
    String s1 = sh.getString("name", "");
    int a = sh.getInt("age", 0);
    String s2 = sh.getString("email", "");
    String s3 = sh.getString("password", "");

    // Setting the fetched data in the EditTexts
    name.setText(s1);
    age.setText(String.valueOf(a));
    email.setText(s2);
```

```
            password.setText(s3);
        }

        // Store the data in the SharedPreference in the onPause() method
        // When the user closes the application onPause() will be called and data will be stored
        @Override
        protected void onPause() {
            super.onPause();
            // Creating a shared pref object with a file name "MySharedPref" in private mode
            SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
MODE_PRIVATE);
            SharedPreferences.Editor myEdit = sharedPreferences.edit();

            // write all the data entered by the user in SharedPreference and apply
            myEdit.putString("name", name.getText().toString());
            myEdit.putInt("age", Integer.parseInt(age.getText().toString()));
            myEdit.putString("email", email.getText().toString());
            myEdit.putString("password", password.getText().toString());
            myEdit.apply();
        }
    }
```


9:43
C2P1
Registration
Enter your name
0
Enter your email
Enter your password


9:45
C2P1
Registration
Saranya Mohan
23
saranya@gmail.com
123SM@