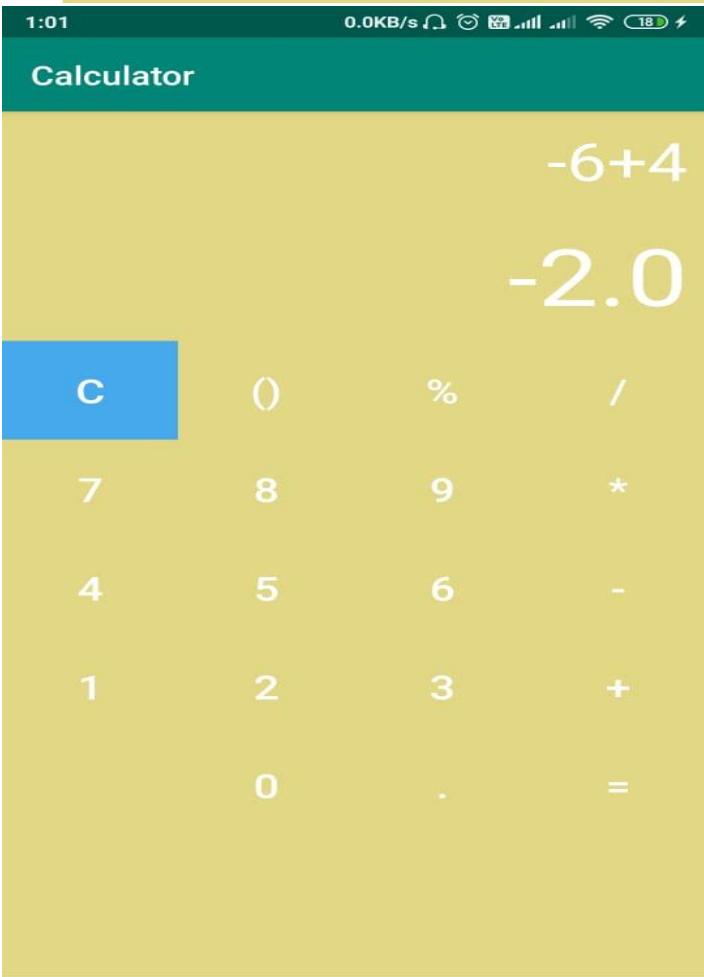
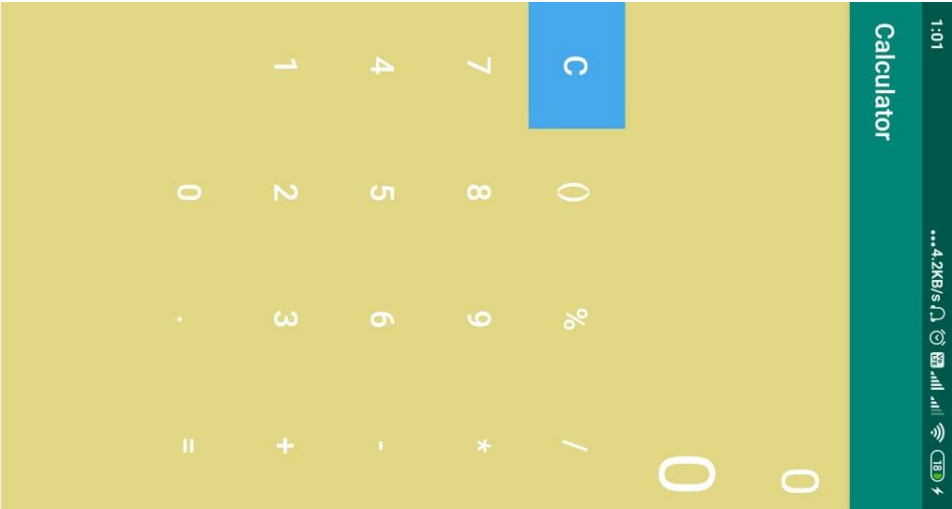


ASSIGNMENT 2

Siddhant jain

**CALCULATOR USING ANDROID
STUDIO:-**

SCREEN SHOT



ACTIVITY MAIN

```
<?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="#E2D785"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <include
        layout="@layout/input_layout"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

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

        <include
            layout="@layout/button_layout"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />
```

```
</RelativeLayout>

</LinearLayout>
```

BUTTON LAYOUT:-

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

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

```
<GridLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:rowCount="5"
    android:columnCount="6">
```

```
<Button
    android:id="@+id/btnclear"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_row="0"
    android:layout_column="0"
```

```
android:layout_columnWeight="1"
android:background="#46A9EB"
android:text="C"
android:textColor="@color/White"
android:textSize="25sp" />
```

<Button

```
android:id="@+id/btnbrackets"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text="()"
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="0"
android:layout_column="1"/>
```

<Button

```
android:id="@+id/btnpercentage"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text="%"
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="0"
android:layout_column="2"/>
```

<Button

```
android:id="@+id/btndivision"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text="/"
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="0"
android:layout_column="3"/>
```

<Button

```
android:id="@+id/btn7"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text="7"
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="1"
android:layout_column="0"/>
```

<Button

```
android:id="@+id/btn8"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text="8"
```

```
        android:textSize="25sp"
        android:textColor="@color/White"
        android:background="#E2D785"
        android:layout_row="1"
        android:layout_column="1"/>
<Button
    android:id="@+id/btn9"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="9"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="1"
    android:layout_column="2"/>
<Button
    android:id="@+id/btnmultiply"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="*"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="1"
    android:layout_column="3"/>
```


<Button

```
    android:id="@+id/btn4"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="4"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="2"
    android:layout_column="0"/>
```

<Button

```
    android:id="@+id/btn5"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="5"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="2"
    android:layout_column="1"/>
```

<Button

```
    android:id="@+id/btn6"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="6"
```

```
        android:textSize="25sp"
        android:textColor="@color/White"
        android:background="#E2D785"
        android:layout_row="2"
        android:layout_column="2"/>
<Button
    android:id="@+id/btnsubtract"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="-"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="2"
    android:layout_column="3"/>
```

```
<Button
    android:id="@+id/btn1"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="1"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="3"
```

```
        android:layout_column="0"/>
<Button
    android:id="@+id/btn2"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="2"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="3"
    android:layout_column="1"/>
<Button
    android:id="@+id/btn3"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="3"
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="3"
    android:layout_column="2"/>
<Button
    android:id="@+id/btnplus"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="+"
    android:background="#E2D785"
    android:layout_row="3"
    android:layout_column="3"/>
```

```
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="3"
android:layout_column="3"/>
```

<Button

```
android:id="@+id/btn0"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text="0"
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="4"
android:layout_column="1"/>
```

<Button

```
android:id="@+id/btnnull"
android:layout_width="wrap_content"
android:layout_height="75dp"
android:layout_columnWeight="1"
android:text=""
android:textSize="25sp"
android:textColor="@color/White"
android:background="#E2D785"
android:layout_row="4"
```

```

        android:layout_column="0"/>
<Button
    android:id="@+id/btndot"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="."
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="4"
    android:layout_column="2"/>
<Button
    android:id="@+id/btnequalto"
    android:layout_width="wrap_content"
    android:layout_height="75dp"
    android:layout_columnWeight="1"
    android:text="="
    android:textSize="25sp"
    android:textColor="@color/White"
    android:background="#E2D785"
    android:layout_row="4"
    android:layout_column="3"
/>

```

```

</GridLayout>

```

</RelativeLayout>

MAIN ACTIVITY

```
package com.example.calculator;
```

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

```
import android.content.Intent;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.TextView;
```

```
import com.faendir.rhino_android.RhinoAndroidHelper;
```

```
import com.faendir.rhino_android.RhinoAndroidHelper;
```

```
import org.mozilla.javascript.Context;
```

```
import org.mozilla.javascript.Scriptable;
```

```
import org.mozilla.javascript.ast.Scope;
```

```
public class MainActivity extends AppCompatActivity {
```

Button

btn0,btn1,btn2,btn3,btn4,btn5,btn6,btn7,btn8,btn9,btnplus,btnminus,btnmultiply,btndivision,btnequal,btnclear,btndot,btnbracket,btnpercentage;

TextView tvinput,tvoutput;

String process;

boolean checkbracket = false;

@Override

protected void onCreate(Bundle savedInstanceState) {

 super.onCreate(savedInstanceState);

 setContentView(R.layout.activity_main);

 btn0 = findViewById(R.id.btn0);

 btn1 = findViewById(R.id.btn1);

 btn2 = findViewById(R.id.btn2);

 btn3 = findViewById(R.id.btn3);

 btn4 = findViewById(R.id.btn4);

 btn5 = findViewById(R.id.btn5);

 btn6 = findViewById(R.id.btn6);

 btn7 = findViewById(R.id.btn7);

 btn8 = findViewById(R.id.btn8);

 btn9 = findViewById(R.id.btn9);

 btnplus = findViewById(R.id.btnplus);

 btnminus = findViewById(R.id.btnsubtract);

 btndivision = findViewById(R.id.btndivision);

 btnmultiply = findViewById(R.id.btnmultiply);

 btnequal = findViewById(R.id.btnequalto);

```
btnclear = findViewById(R.id.btnclear);  
btndot = findViewById(R.id.btndot);  
btnpercentage = findViewById(R.id.btnpercentage);  
btnbracket = findViewById(R.id.btnbrackets);
```

```
tvinput = findViewById(R.id.tvinput);  
tvoutput = findViewById(R.id.tvoutput);
```

```
btnclear.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        tvinput.setText("");  
        tvoutput.setText("");  
    }  
});
```

```
btn0.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        process = tvinput.getText().toString();  
        tvinput.setText(process + "0");  
    }  
});
```

```
btn1.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        process = tvinput.getText().toString();
```



```
        tvinput.setText(process + "1");
    }
});

btn2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        process = tvinput.getText().toString();
        tvinput.setText(process + "2");
    }
});

btn3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        process = tvinput.getText().toString();
        tvinput.setText(process + "3");
    }
});

btn4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        process = tvinput.getText().toString();
        tvinput.setText(process + "4");
    }
});

btn5.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        process = tvinput.getText().toString();
        tvinput.setText(process + "5");
    }
});
```

```

    }
});

btn6.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        process = tvinput.getText().toString();

        tvinput.setText(process + "6");

    }

});

btn7.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        process = tvinput.getText().toString();

        tvinput.setText(process + "7");

    }

});

btn8.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        process = tvinput.getText().toString();

        tvinput.setText(process + "8");

    }

});

btn9.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        process = tvinput.getText().toString();

        tvinput.setText(process + "9");

    }

});

```

```
});
```

```
btnplus.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        process = tvinput.getText().toString();  
        tvinput.setText(process + "+");  
    }  
});
```

```
btnminus.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        process = tvinput.getText().toString();  
        tvinput.setText(process + "-");  
    }  
});
```

```
btnmultiply.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        process = tvinput.getText().toString();  
        tvinput.setText(process + "*");  
    }  
});
```

```
btndivision.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        process = tvinput.getText().toString();  
        tvinput.setText(process + "/");  
    }  
});
```

```

    }
});

btnpercentage.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        process = tvinput.getText().toString();

        tvinput.setText(process + "%");

    }

});

btndot.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        process = tvinput.getText().toString();

        tvinput.setText(process + ".");

    }

});

btnbracket.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        if (checkbracket)

        {

            process = tvinput.getText().toString();

            tvinput.setText(process + ")");

            checkbracket = false;

        }

        else{

            process = tvinput.getText().toString();

            tvinput.setText(process + "(");

            checkbracket = true;

        }

    }

});

```

```
}
```

```
}
```

```
});
```

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

```
    @Override
```

```
    public void onClick(View v) {
```

```
        process = tvinput.getText().toString();
```

```
        process = process.replaceAll("%","/100");
```

```
        Context rhino = Context.enter();
```

```
        rhino.setOptimizationLevel(-1);
```

```
        String finalResult = "";
```

```
        try {
```

```
            Scriptable scriptable = rhino.initStandardObjects();
```

```
            finalResult = rhino.evaluateString(scriptable,process,"javascript",1,null).toString();
```

```
        }catch (Exception e){
```

```
            finalResult="0";
```

```
        }
```

```
        tvoutput.setText(finalResult);
    }
});

}

}
```

INPUT LAYOUT:-

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

    <TextView
        android:id="@+id/tvinput"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#E2D785"
        android:gravity="end"
        android:padding="10dp"
        android:text="0"
        android:textColor="@color/White"
```

```
android:textColorLink="#00131111"
```

```
android:textSize="40sp" />
```

```
<TextView
```

```
    android:id="@+id/tvoutput"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:background="#E2D785"
```

```
    android:gravity="end"
```

```
    android:padding="10dp"
```

```
    android:text="0"
```

```
    android:textColor="@color/White"
```

```
    android:textSize="60sp" />
```

```
</LinearLayout>
```

EXAMPLE INSTRUMENTED TEST:-

```
package com.example.calculator;
```

```
import android.content.Context;
```

```
import androidx.test.platform.app.InstrumentationRegistry;
```

```
import androidx.test.ext.junit.runners.AndroidJUnit4;

import org.junit.Test;
import org.junit.runner.RunWith;

import static org.junit.Assert.*;

/**
 * Instrumented test, which will execute on an Android device.
 *
 * @see <a href="http://d.android.com/tools/testing">Testing documentation</a>
 */
@RunWith(AndroidJUnit4.class)
public class ExampleInstrumentedTest {
    @Test
    public void useAppContext() {
        // Context of the app under test.
        Context appContext = InstrumentationRegistry.getInstrumentation().getTargetContext();

        assertEquals("com.example.calculator", appContext.getPackageName());
    }
}
```

EXAMPLE UNIT TEST:-


```
package com.example.calculator;
```

```
import org.junit.Test;
```

```
import static org.junit.Assert.*;
```

```
/**
```

```
 * Example local unit test, which will execute on the development machine (host).
```

```
 *
```

```
 * @see <a href="http://d.android.com/tools/testing">Testing documentation</a>
```

```
 */
```

```
public class ExampleUnitTest {
```

```
    @Test
```

```
    public void addition_isCorrect() {
```

```
        assertEquals(4, 2 + 2);
```

```
    }
```

```
}
```