LABCYCLE 1

EXPERIMENT NO: 1

DATE: 24/01/2022

AIM: Hello World program!

Source code

activity_main.xml

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

<androidx.constraintlayout.widget.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=".MainActivity">


    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        android:textSize="45dp"
        android:textAlignment="center"
        android:textColor="@color/black "
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

 </androidx.constraintlayout.widget.ConstraintLayout>
```
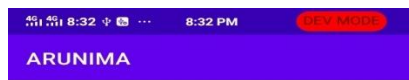
MainActivity.java

```java
 package com.example.myapp;

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

```java
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

Output

ARUNIMA

Hello World!

EXPERIMENT NO: 2

DATE: 24/01/2022

AIM: Develop an android mobile application to display your details (use of font colors, size,

  Style…)

<u>Source code</u>

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp"
    android:background="@drawable/image"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="ARUNIMAMOL CS "
        android:layout_marginLeft="110dp"
        android:textStyle="bold"
        android:textSize="30dp"
        android:textColor="@color/black "
        android:layout_marginTop="150dp"/>
    <TextView
        android:id="@+id/course"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="S3 MCA"
        android:layout_marginLeft="150dp"
        android:textStyle="bold"
        android:textSize="20dp"
        android:textColor="@color/black "
        android:layout_marginTop="20dp"
        android:layout_below="@+id/name"/>
    <TextView
        android:id="@+id/rollno"
        android:layout_width="match_parent"
```

```xml
            android:layout_height="wrap_content"
            android:text="ROLL NO:20 "
            android:layout_marginLeft="140dp"
            android:textStyle="bold"
             android:textSize="20dp"
            android:textColor="@color/black "
            android:layout_marginTop="20dp"
            android:layout_below="@+id/course"/>
    <TextView
            android:id="@+id/college"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="RIT, KOTTAYAM"
            android:layout_marginLeft="130dp"
            android:textStyle="bold"
            android:textSize="20dp"
            android:textColor="@color/black "
            android:layout_marginTop="20dp"
            android:layout_below="@+id/rollno"/>
</RelativeLayout>
```

MainActivity.java

```java
package com.example.myapp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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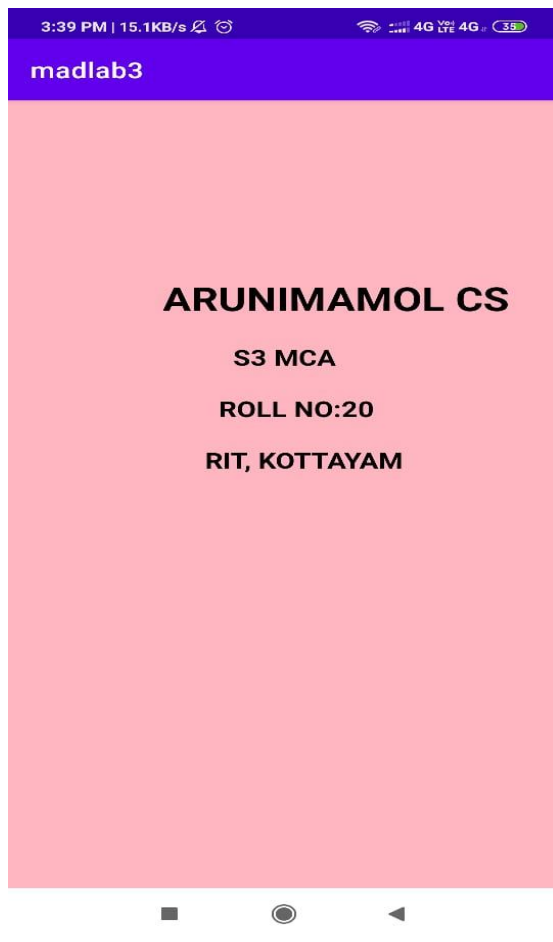
Output

3:39 PM | 15.1KB/s

madlab3

ARUNIMAMOL CS

S3 MCA

ROLL NO:20

RIT, KOTTAYAM

EXPERIMENT NO: 3

DATE: 24/01/2022

AIM: Develop an android mobile application to display some QA in text boxes when a button event occurs. Set some questions in TextViews, display corresponding answers when a Button click event happens.

Source code

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp"
    android:background="@drawable/bgd"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/qn1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Brain of computer is?"
        android:textSize="20dp"
        android:textColor="@color/black"
        android:layout_marginTop="50dp"/>
    <Button
        android:id="@+id/btn1"
        android:layout_width="150dp"
        android:layout_height="40dp"
        android:text="Answer"
        android:textSize="10dp"
        android:layout_marginTop="30dp"
        android:layout_below="@+id/qn1"/>
    <TextView
        android:id="@+id/answer1"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:text=""

        android:textSize="20dp"
```

```xml
        android:textColor="@color/black"

        android:layout_marginTop="20dp"

       android:layout_below="@+id/btn1"/>

    <TextView
        android:id="@+id/qn2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="who invented computer ?"
        android:textSize="20dp"
        android:layout_marginTop="30dp"
        android:textColor="@color/black"
        android:layout_below="@+id/answer1"/>

    <Button
        android:id="@+id/btn2"
        android:layout_width="150dp"
        android:layout_height="40dp"
        android:text="Answer"
        android:textSize="10dp"
        android:layout_marginTop="37dp"
        android:layout_below="@+id/qn2"/>
    <TextView
      android:id="@+id/answer2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text=""
      android:textSize="20dp"
      android:textColor="@color/black"
      android:layout_marginTop="20dp"
      android:layout_below="@+id/btn2"/>

    <TextView
        android:id="@+id/qn3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Gateway of India is located at?"
        android:textSize="20dp"
        android:layout_marginTop="30dp"
        android:textColor="@color/black"
        android:layout_below="@+id/answer2"/>
    <Button
        android:id="@+id/btn3"
        android:layout_width="150dp"
        android:layout_height="40dp"
```

```xml
            android:text="Answer"
            android:textSize="10dp"
            android:layout_marginTop="37dp"
          android:layout_below="@+id/qn3"/>
    <TextView
        android:id="@+id/answer3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text=""
        android:textSize="20dp"
        android:textColor="@color/black"
        android:layout_marginTop="20dp"
        android:layout_below="@+id/btn3"/>

    </RelativeLayout>
```

MainActivity.java

```java
package com.example.myapp;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
    public class MainActivity extends AppCompatActivity {
        TextView answer1,answer2,answer3;
        Button btn1, btn2,btn3;
        @Override
        protected void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            setContentView(R.layout.activity_main);
            answer1=(TextView) findViewById(R.id.answer1);
            answer2=(TextView) findViewById(R.id.answer2);
            answer3=(TextView) findViewById(R.id.answer3);
            btn1 = (Button) findViewById(R.id.btn1);
            btn2 = (Button) findViewById(R.id.btn2);
            btn3 = (Button)  findViewById(R.id.btn3);

            btn1.setOnClickListener(new View.OnClickListener() {

                @Override
                public void onClick(View v) {

                    answer1.setText("CPU");
```

```java
                    }
            });
            btn2.setOnClickListener(new View.OnClickListener() {

                    @Override
                    public void onClick(View v) {

                            answer2.setText("Charles Babbage");

                    }
            });
            btn3.setOnClickListener(new View.OnClickListener() {

                    @Override
public void onClick(View v) {

answer3.setText("Mumbai");

}

});

}

}
```

EXPERIMENT NO: 4

DATE: 24/01/2022

AIM: Develop an android mobile application which accepts a string via editText and Toast it.

<u>Source code</u>

activity_main.xml

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

    <EditText
        android:id="@+id/string"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:hint="Enter a String"
        android:textSize="20dp"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="150dp"/>

    <Button
        android:id="@+id/btn1"
        android:layout_width="150dp"
        android:layout_height="40dp"
        android:layout_below="@+id/string"
        android:backgroundTint="#0ED689"
        android:layout_marginTop="30dp"
        android:layout_marginLeft="50dp"
        android:text="submit"
        android:textSize="10dp" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.mad3;

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

```java
import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText string;
Button btn1;
@Override
    protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
        string = (EditText) findViewById(R.id.string);

        btn1= (Button) findViewById(R.id.btn1);
        btn1.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View v) {
                String name = string.getText().toString();

                if(name.length()!=0) {
                    // If name or password is not entered

                    Toast.makeText(getApplicationContext(), "string entered
 successfully", Toast.LENGTH_LONG).show();
                }
                else {
                    Toast.makeText(getApplicationContext(), "string not
 entered", Toast.LENGTH_LONG).show();

                }
            }

        });

    }
}
```
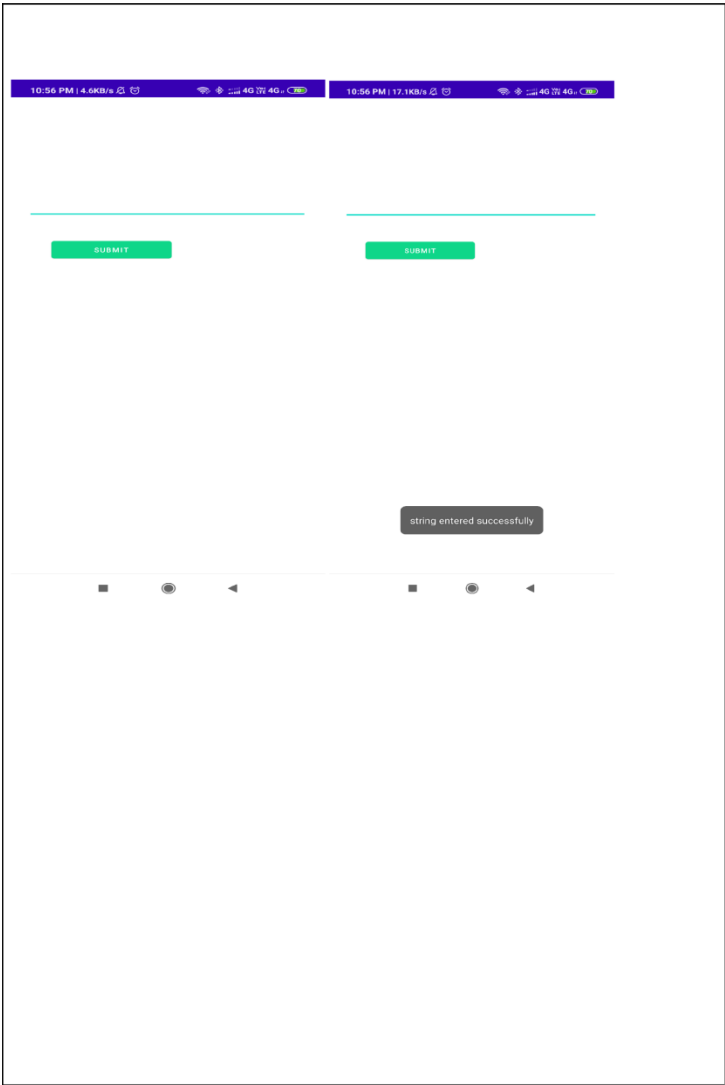
Output

10:56 PM | 4.6KB/s

SUBMIT

10:56 PM | 17.1KB/s

SUBMIT

string entered successfully

EXPERIMENT NO: 5

DATE: 24/01/2022

AIM: Develop an android mobile application to perform calculator functions. Accept inputs from GUI.

Source code

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent" android:layout_height="match_parent"
    android:background="#ecf0f1"
    android:orientation="vertical"
    tools:context="com.example.calc.MainActivity">

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

        <TextView
            android:id="@+id/display"
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:background="#ecf0f1"
            android:textSize="30sp" />
    </LinearLayout>

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

        <Button
            android:id="@+id/buttonDel"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_margin="1dp"
            android:layout_weight="0.25"
```

```xml
        android:text="clear"
        android:textColor="@color/black"
        android:textSize="20sp" />

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

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

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

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="match_parent
        " android:layout_margin="1dp"
        android:layout_weight="0.25"
        android:text="2"
        android:textColor="@color/black"
        android:textSize="20sp" />
<Button
 android:id="@+id/button3"
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:layout_margin="1dp"
android:layout_weight="0.25"
```

```xml
        android:text="3"
android:textColor="@color/black"
android:textSize="20sp" />

<Button
android:id="@+id/buttondiv"
android:layout_width="wrap_content"

android:layout_height="match_parent"

 android:layout_margin="1dp"
android:layout_weight="0.25"

android:text="/"

 android:textColor="@color/black"

android:textSize="30sp" />
</LinearLayout>

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

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

        <Button
            android:id="@+id/button5"
            android:layout_width="wrap_content"
            android:layout_height="match_parent
            " android:layout_margin="1dp"
            android:layout_weight="0.25"
            android:text="5"
            android:textColor="@color/black"
            android:textSize="20sp" />
<Button
 android:id="@+id/button6"
android:layout_width="wrap_content"
android:layout_height="match_parent"
```

```xml
    android:layout_margin="1dp"
    android:layout_weight="0.25"
    android:text="6"
    android:textColor="@color/black"
    android:textSize="20sp" />

<Button
android:id="@+id/buttonsub"
android:layout_width="wrap_content"

android:layout_height="match_parent"

 android:layout_margin="1dp"
android:layout_weight="0.25"

android:text="-"

 android:textColor="@color/black"

android:textSize="30sp" />
</LinearLayout>
<LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_weight="0.2"
            android:orientation="horizontal">

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

            <Button
                android:id="@+id/button8"
                android:layout_width="wrap_content"
                android:layout_height="match_parent
                " android:layout_margin="1dp"
                android:layout_weight="0.25"
                android:text="8"
                android:textColor="@color/black"
                android:textSize="20sp" />
<Button
 android:id="@+id/button9"
android:layout_width="wrap_content"
```

```xml
        android:layout_height="match_parent"
        android:layout_margin="1dp"
        android:layout_weight="0.25"
         android:text="9"
        android:textColor="@color/black"
        android:textSize="20sp" />

    <Button
        android:id="@+id/buttonmul"
        android:layout_width="wrap_content"

        android:layout_height="match_parent"

         android:layout_margin="1dp"
        android:layout_weight="0.25"

        android:text="*"

         android:textColor="@color/black"

        android:textSize="30sp" />
    </LinearLayout>

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

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

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

```xml
<Button
  android:id="@+id/Remainder "
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:layout_margin="1dp"
android:layout_weight="0.25"
android:textColor="@color/black"
android:text="%"
android:textSize="30sp" />

<Button
android:id="@+id/buttonadd"
android:layout_width="wrap_content"

android:layout_height="match_parent"

 android:layout_margin="1dp"
android:layout_weight="0.25"

android:text="+"

 android:textColor="@color/black"

android:textSize="30sp" />
</LinearLayout>
</LinearLayout>
```

MainActivity.java

```java
package com.example.calc;
import android.os.Bundle;
import android.view.View;
import androidx.appcompat.app.AppCompatActivity;
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
double input1 = 0, input2 = 0;
TextView edt1;
boolean Addition, Subtract, Multiplication, Division, mRemainder, decimal;
 Button button0, button1, button2, button3, button4, button5, button6,
 button7, button8, button9, buttonAdd, buttonSub,buttonMul, buttonDivision, buttonEqual,
 buttonDel, buttonDot,Remainder;

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

```java
button0 = (Button) findViewById(R.id.button0);
button1 = (Button) findViewById(R.id.button1);
button2 = (Button) findViewById(R.id.button2);
button3 = (Button) findViewById(R.id.button3);
button4 = (Button) findViewById(R.id.button4);
button5 = (Button) findViewById(R.id.button5);
button6 = (Button) findViewById(R.id.button6);
button7 = (Button) findViewById(R.id.button7);
button8 = (Button) findViewById(R.id.button8);
button9 = (Button) findViewById(R.id.button9);
buttonDot = (Button) findViewById(R.id.buttonDot);
buttonAdd = (Button) findViewById(R.id.buttonadd);
buttonSub = (Button) findViewById(R.id.buttonsub);
buttonMul = (Button)  findViewById(R.id.buttonmul);
buttonDivision = (Button) findViewById(R.id.buttondiv);
Remainder = (Button) findViewById(R.id.Remainder);
buttonDel = (Button) findViewById(R.id.buttonDel);
buttonEqual = (Button) findViewById(R.id.buttoneql);

edt1 = (TextView) findViewById(R.id.display);

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

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


            }
});


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

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

```java
                }
            });


            button5.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    edt1.setText(edt1.getText() + "5");
                }
            });
        button6.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    edt1.setText(edt1.getText() + "6");
                }
            });

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

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

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


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

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


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


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


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

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


            buttonEqual.setOnClickListener(new View.OnClickListener() {

            @Override
                public void onClick(View v) {
    if (Addition || Subtract || Multiplication || Division  ||     mRemainder)

{
 input2 = Float.parseFloat(edt1.getText() + "");

}
                      if (Addition) {

                              edt1.setText(input1 + input2 + "");
                              Addition = false;
                      }


                        if (Subtract) {

                              edt1.setText(input1 - input2 + "");
                              Subtract = false;
                      }
                        if (Multiplication) {

                              edt1.setText(input1 * input2 + "");
                              Multiplication= false;
                      }
```

```java
                if (Division) {

                        edt1.setText(input1/ input2 + "");
                        Division = false;
                }

                 if (mRemainder) {
                        edt1.setText(input1 % input2 + "");
                        mRemainder = false;
                }
            }
        });


buttonDel.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

edt1.setText("");

input1 = 0.0;

input2 = 0.0;
    }
});
buttonDot.setOnClickListener(new View.OnClickListener() {

@Override
public void onClick(View v) {
if (decimal) {
//do nothing or you can show the error

} else {
edt1.setText(edt1.getText() + ".");
decimal = true;
            }
          }
      });
    }
}
```

Output