//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"
    android:paddingBottom="50dp"
    tools:context="com.example.android.trigometriccalculator.MainActivity">

    <EditText
        android:id="@+id/ed1"
        android:inputType="number"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="120dp"
        android:layout_marginLeft="100dp"/>

    <EditText
        android:id="@+id/ed2"
        android:inputType="number"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="120dp"
        android:layout_marginLeft="300dp"/>

    <EditText
        android:id="@+id/ed3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="180dp"
        android:layout_centerHorizontal="true"/>
    <GridLayout
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_gravity="center"
        android:columnCount="4"
        android:orientation="horizontal"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">

        <Button android:text="MS"
            android:id="@+id/B1"/>

        <Button android:text="MR"
            android:id="@+id/B2"/>

        <Button android:text="MC"
            android:id="@+id/B3"/>

        <Button android:text="CLR"
            android:id="@+id/B4"/>

        <Button android:text="+"
            android:id="@+id/B5"/>

        <Button android:text="-"
            android:id="@+id/B6"/>

        <Button android:text="*"
            android:id="@+id/B7"/>

        <Button android:text="/"
            android:id="@+id/B8"/>

        <Button android:text="sin"
            android:id="@+id/B9"/>

        <Button android:text="cos"
```

```
            android:id="@+id/B10"/>

        <Button android:text="tan"
            android:id="@+id/B11"/>

        <Button android:text="sinh"
            android:id="@+id/B12"/>

        <Button android:text="cosh"
            android:id="@+id/B13"/>

        <Button android:text="tanh"
            android:id="@+id/B14"/>

        <Button android:text="ln"
            android:id="@+id/B15"/>

        <Button android:text="antilog"
            android:id="@+id/B16"/>

        <Button android:text="^2"
            android:id="@+id/B17"/>

        <Button android:text="^(1/2)"
            android:id="@+id/B18"/>

        <Button android:text="x!"
            android:id="@+id/B19"/>

        <Button android:text="log"
            android:id="@+id/B20"/>


    </GridLayout>
</RelativeLayout>
```

//MainActivity.java

```
package com.example.android.trigometriccalculator;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;



public class MainActivity extends AppCompatActivity implements View.OnClickListener
{
    EditText firstNumber;
    EditText secondNumber;
    TextView addResult;
    double num1, num2, res, ang;

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

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        firstNumber = (EditText) findViewById(R.id.ed1);
        secondNumber = (EditText) findViewById(R.id.ed2);
        addResult = (EditText) findViewById(R.id.ed3);

        Button one = (Button) findViewById(R.id.B1);
        one.setOnClickListener(this); // calling onClick() method
        Button two = (Button) findViewById(R.id.B2);
        two.setOnClickListener(this);
        Button three = (Button) findViewById(R.id.B3);
        three.setOnClickListener(this);
        Button four = (Button) findViewById(R.id.B4);
        four.setOnClickListener(this); // calling onClick() method
        Button five = (Button) findViewById(R.id.B5);
        five.setOnClickListener(this); // calling onClick() method
        Button six = (Button) findViewById(R.id.B6);
        six.setOnClickListener(this); // calling onClick() method
        Button seven = (Button) findViewById(R.id.B7);
        seven.setOnClickListener(this); // calling onClick() method
        Button eight = (Button) findViewById(R.id.B8);
        eight.setOnClickListener(this);
        Button nine = (Button) findViewById(R.id.B9);
        nine.setOnClickListener(this);
        Button ten = (Button) findViewById(R.id.B10);
        ten.setOnClickListener(this);
        Button eleven = (Button) findViewById(R.id.B11);
        eleven.setOnClickListener(this);
        Button twelve = (Button) findViewById(R.id.B12);
        twelve.setOnClickListener(this);
        Button thirteen = (Button) findViewById(R.id.B13);
        thirteen.setOnClickListener(this);
        Button fourteen = (Button) findViewById(R.id.B14);
        fourteen.setOnClickListener(this);
        Button fifteen = (Button) findViewById(R.id.B15);
        fifteen.setOnClickListener(this);
        Button sixteen = (Button) findViewById(R.id.B16);
        sixteen.setOnClickListener(this);
        Button seventeen = (Button) findViewById(R.id.B17);
        seventeen.setOnClickListener(this);
        Button eighteen = (Button) findViewById(R.id.B18);
        eighteen.setOnClickListener(this);
        Button nineteen = (Button) findViewById(R.id.B19);
        nineteen.setOnClickListener(this);
        Button twenty = (Button) findViewById(R.id.B20);
        twenty.setOnClickListener(this);
    }

    @Override
    public void onClick(View v) {

        File myFile = new File("/sdcard/mysdfile.txt");

        switch (v.getId()) {
            case R.id.B1:
                if (myFile.exists()) {
                    try {
                        FileOutputStream fOut = new FileOutputStream(myFile,true);
                        OutputStreamWriter myOutWriter =
                                new OutputStreamWriter(fOut);
                        myOutWriter.append(addResult.getText());
                        myOutWriter.append("\n");
                        myOutWriter.close();
                        fOut.close();
                        Toast.makeText(getBaseContext(),
                                "Done writing SD 'mysdfile.txt'",
                                Toast.LENGTH_SHORT).show();
                    } catch (Exception e) {
```

```
                Toast.makeText(getBaseContext(), e.getMessage(),
                        Toast.LENGTH_SHORT).show();
            }
        }

        else
        {
            try {
                myFile.createNewFile();
            }

            catch (Exception e) {
                Toast.makeText(getBaseContext(), e.getMessage(),
                        Toast.LENGTH_SHORT).show();
            }
        }
        break;

    case R.id.B2:
        try {

            FileInputStream fIn = new FileInputStream(myFile);
            BufferedReader myReader = new BufferedReader(
                    new InputStreamReader(fIn));
            String aDataRow = "";
            String aBuffer = "";
            while ((aDataRow = myReader.readLine()) != null) {
                aBuffer += aDataRow + "\n";
            }
            addResult.setText(aBuffer);
            myReader.close();
            Toast.makeText(getBaseContext(),
                    "Done reading SD 'mysdfile.txt'",
                    Toast.LENGTH_SHORT).show();
        } catch (Exception e) {
            Toast.makeText(getBaseContext(), e.getMessage(),
                    Toast.LENGTH_SHORT).show();
        }
        break;
    case R.id.B3:
        myFile.delete();
        break;

    case R.id.B4:
        firstNumber.setText("");
        secondNumber.setText("");
        addResult.setText("");
        break;


    case R.id.B5:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        num2 = Double.parseDouble(secondNumber.getText().toString());
        res = num1 + num2;
        addResult.setText(Double.toString(res));
        break;

    case R.id.B6:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        num2 = Double.parseDouble(secondNumber.getText().toString());
        res = num1 - num2;
        addResult.setText(Double.toString(res));
        break;

    case R.id.B7:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        num2 = Double.parseDouble(secondNumber.getText().toString());
        res = num1 * num2;
```

```
        addResult.setText(Double.toString(res));
        break;

    case R.id.B8:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        num2 = Double.parseDouble(secondNumber.getText().toString());
        res = num1 / num2;
        addResult.setText(Double.toString(res));
        break;

    case R.id.B9:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        ang = Math.toRadians(num1);
        res = Math.sin(ang);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B10:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        ang = Math.toRadians(num1);
        res = Math.cos(ang);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B11:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        ang = Math.toRadians(num1);
        res = Math.tan(ang);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B12:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        ang = Math.toRadians(num1);
        res = Math.sinh(ang);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B13:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        ang = Math.toRadians(num1);
        res = Math.cosh(ang);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B14:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        ang = Math.toRadians(num1);
        res = Math.tanh(ang);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B15:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        res = Math.log(num1);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B16:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        res = Math.exp(num1);
        addResult.setText(Double.toString(res));
        break;

    case R.id.B17:
        num1 = Double.parseDouble(firstNumber.getText().toString());
        res = num1*num1;
        addResult.setText(Double.toString(res));
```

```
                break;

            case R.id.B18:
                num1 = Double.parseDouble(firstNumber.getText().toString());
                res = Math.sqrt(num1);
                addResult.setText(Double.toString(res));
                break;

            case R.id.B19:
                num1 = Double.parseDouble(firstNumber.getText().toString());
               double number,i,fact=1;
                number = num1;
                for(i=1;i<=number;i++){
                    fact=fact*i;
                }
                res=fact;
                addResult.setText(Double.toString(res));
                break;

            case R.id.B20:
                num1 = Double.parseDouble(firstNumber.getText().toString());
                res = Math.log10(num1);
                addResult.setText(Double.toString(res));
                break;

            default:
                break;
                }
        }

    }
```

//AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.android.trigometriccalculator">
    <uses-permission
android:name="android.permission.WRITE_EXTERNAL_STORAGE"></uses-permission>
    <application
        android:allowBackup="true"
        android:icon="@drawable/icon"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```