Assignment No - 3

Q.3 Develop an Android App for Unit Conversion?
MainActivity.java
package com.example.basicarithmeticoperation;

```java
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText inputNumber;
    Spinner conversionType;
    Button convertButton;
    TextView resultText;

    String[] conversionOptions = {
        "Meters to Kilometers",
        "Celsius to Fahrenheit",
        "Kilograms to Grams",
        "Miles to Kilometers"
    };

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

        inputNumber = findViewById(R.id.inputNumber);
        conversionType = findViewById(R.id.conversionType);
        convertButton = findViewById(R.id.convertButton);
        resultText = findViewById(R.id.resultText);

        // Populate Spinner with conversion options
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_spinner_item, conversionOptions);
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        conversionType.setAdapter(adapter);

        convertButton.setOnClickListener(new View.OnClickListener() {
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```java
        @Override
        public void onClick(View v) {
            convertValue();
        }
    });
    }

    private void convertValue() {
        String inputStr = inputNumber.getText().toString();

        if (inputStr.isEmpty()) {
            Toast.makeText(this, "Please enter a number", Toast.LENGTH_SHORT).show();
            return;
        }

        double inputValue = Double.parseDouble(inputStr);
        int selectedPosition = conversionType.getSelectedItemPosition();
        double result = 0;
        String unit = "";

        switch (selectedPosition) {
            case 0: // Meters to Kilometers
                result = inputValue / 1000;
                unit = " km";
                break;
            case 1: // Celsius to Fahrenheit
                result = (inputValue * 9/5) + 32;
                unit = " °F";
                break;
            case 2: // Kilograms to Grams
                result = inputValue * 1000;
                unit = " g";
                break;
            case 3: // Miles to Kilometers
                result = inputValue * 1.60934;
                unit = " km";
                break;
        }

        resultText.setText("Converted Value: " + result + unit);
    }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
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```
    android:padding="20dp"
    android:gravity="center">

    <EditText
        android:id="@+id/inputNumber"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter value"
        android:inputType="numberDecimal" />

    <Spinner
        android:id="@+id/conversionType"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

    <Button
        android:id="@+id/convertButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Convert" />

    <TextView
        android:id="@+id/resultText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Converted Value: "
        android:textSize="18sp"
        android:paddingTop="10dp" />

</LinearLayout>
```