Prime\PrimeCheck.txt

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```Assignment 8 : Prime Number Check ```
1. Activity prime check.xml :
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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=".prime_check">
 <LinearLayout
 android:id="@+id/main"
 android:layout width="match parent"
 android:layout_height="match_parent"
 android:orientation="vertical"
 android:padding="16dp"
 app:layout_constraintTop_toTopOf="parent">
 <LinearLayout
 android:layout_width="match_parent"
 android:lavout height="51dp"
 android:orientation="vertical">
 <TextView
 android:id="@+id/textView4"
 android:layout width="match parent"
 android:layout height="match parent"
 android:text="Prime Check"
 android:fontFamily="sans-serif-smallcaps"
 android:gravity="center"
 android:textStyle="bold"
 android:textSize="40dp"
 android:background="@drawable/shape btn"
 android:textColor="@color/black"/>
 </LinearLayout>
 <Space
 android:layout width="match parent"
 android:layout height="109dp" />
 <EditText
 android:id="@+id/inputNumber"
 android:layout width="match parent"
 android:layout height="wrap content"
 android:hint="Enter a number"
 android:inputType="number" />
 <Button
 android:id="@+id/checkButton"
 android:layout_width="wrap_content"
 android:layout_height="wrap_content"
 android:layout_gravity="center_horizontal"
 android:layout marginTop="16dp"
 android:text="Check Prime" />
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<TextView
 android:id="@+id/resultText"
 android:layout width="match parent"
 android:layout height="wrap content"
 android:paddingTop="16dp"
 android:textColor="@color/white"
 android:text="Result will be displayed here" />
 </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
2. prime check.java:
package com.example.assignmenthub;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class prime_check extends AppCompatActivity {
 // Declare views
 private EditText inputNumber;
 private Button checkButton;
 private TextView resultText;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity prime check);
 // Initialize views
 inputNumber = findViewById(R.id.inputNumber);
 checkButton = findViewById(R.id.checkButton);
 resultText = findViewById(R.id.resultText);
 // Set button click listener
 checkButton.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 primeCheck();
 }
 });
 }
 // Method to handle prime check
 private void primeCheck() {
 // Get user input
 String input = inputNumber.getText().toString();
 // Validate input
 if (input.isEmpty()) {
 Toast.makeText(this, "Please enter a number", Toast.LENGTH_SHORT).show();
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return;
 }
 try {
 int number = Integer.parseInt(input);
 // Check if the number is prime
 String result = primeCheckFun(number);
 resultText.setText(result);
 } catch (NumberFormatException e) {
 Toast.makeText(this, "Please enter a valid number", Toast.LENGTH_SHORT).show();
 }
}
// Method to check if a number is prime
private String primeCheckFun(int number) {
 boolean isPrime = isPrime(number);
 if (isPrime) {
 return number + " is a prime number.";
 } else {
 return number + " is not a prime number.";
 }
}
// Helper function to determine if a number is prime
private boolean isPrime(int num) {
 if (num <= 1) return false;</pre>
 for (int i = 2; i <= Math.sqrt(num); i++) {</pre>
 if (num % i == 0) return false;
 }
 return true;
}
```

}