Assignment-01

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1. **Write an android application which will print "Hello World" on the AVD**

SOLUTION:

activity_main.java

```java
package com.example.helloworldapp;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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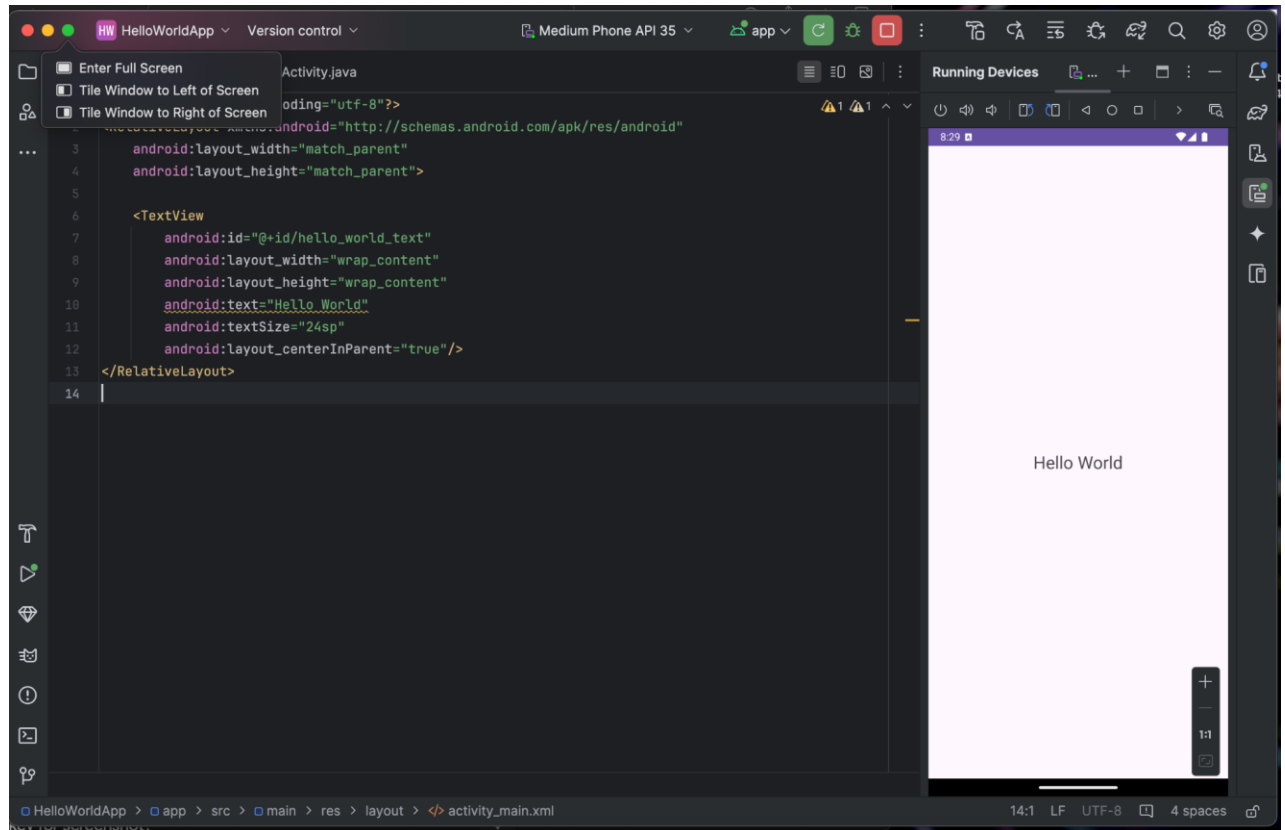
activity_main.xml

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

    <TextView
        android:id="@+id/hello_world_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World"
        android:textSize="24sp"
        android:layout_centerInParent="true"/>
</RelativeLayout>
```

OUTPUT:

2. **Write an android application that will accept two numbers from the users and will print the addition as output in TextView and Toast.**

SOLUTION:

acitvity_main.java

```java
package com.example.problem2;

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 MainActivity extends AppCompatActivity {

    private EditText number1EditText;
    private EditText number2EditText;
```

```java
    private TextView resultTextView;
    private Button addButton;

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

        number1EditText = findViewById(R.id.number1);
        number2EditText = findViewById(R.id.number2);
        resultTextView = findViewById(R.id.resultTextView);
        addButton = findViewById(R.id.addButton);

        addButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get user input
                String num1String = number1EditText.getText().toString();
                String num2String = number2EditText.getText().toString();

                if (!num1String.isEmpty() && !num2String.isEmpty()) {
                    try {
                        // Parse numbers and perform addition
                        int num1 = Integer.parseInt(num1String);
                        int num2 = Integer.parseInt(num2String);
                        int sum = num1 + num2;

                        // Display result in TextView and Toast
                        resultTextView.setText("Sum: " + sum);
                        Toast.makeText(MainActivity.this,  "Sum:  " +  sum,
Toast.LENGTH_SHORT).show();
                    } catch (NumberFormatException e) {
                        // Handle invalid input
                        Toast.makeText(MainActivity.this, "Please  enter  valid
numbers", Toast.LENGTH_SHORT).show();
                    }
                } else {
                    // Handle empty inputs
                    Toast.makeText(MainActivity.this,   "Please   enter   both
numbers", Toast.LENGTH_SHORT).show();
                }
            }
```

```
        });
    }
}
```

activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <EditText
        android:id="@+id/number1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter first number"
        android:inputType="number"/>

    <EditText
        android:id="@+id/number2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter second number"
        android:inputType="number"
        android:layout_below="@id/number1"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id/addButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add"
        android:layout_below="@id/number2"
        android:layout_marginTop="16dp"/>

    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result will appear here"
        android:layout_below="@id/addButton"
        android:layout_marginTop="16dp"/>
```

```
</RelativeLayout>
```
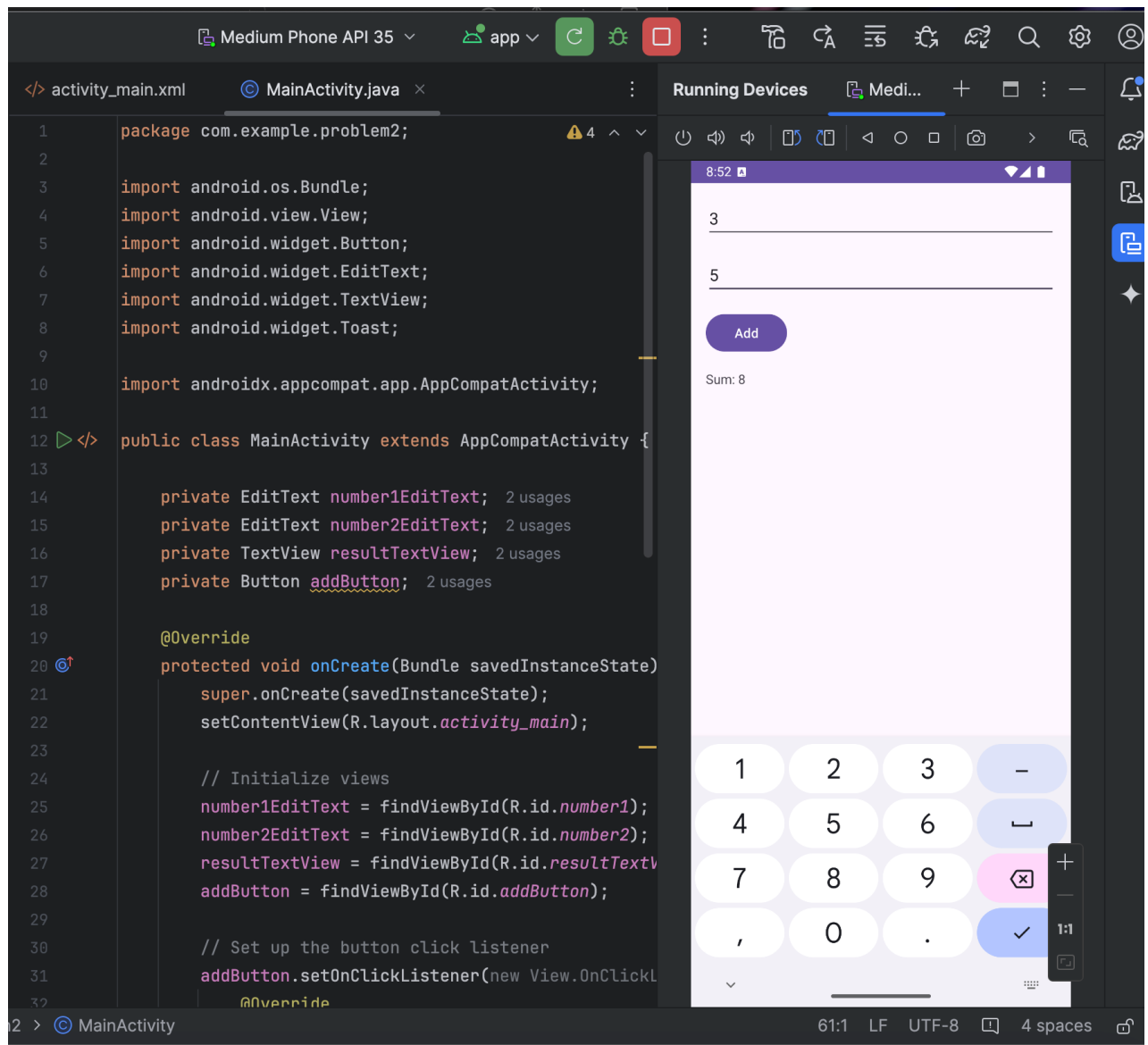
OUTPUT:

3. **Write an android application that will demonstrate an Android Activity Life Cycle and print output in the logcat.**

SOLUTION:

activity_main.java

```
package com.example.problem3;
```

```java
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private Button startButton, resumeButton, pauseButton, stopButton,
restartButton, destroyButton;

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

        startButton = findViewById(R.id.startButton);
        resumeButton = findViewById(R.id.resumeButton);
        pauseButton = findViewById(R.id.pauseButton);
        stopButton = findViewById(R.id.stopButton);
        restartButton = findViewById(R.id.restartButton);
        destroyButton = findViewById(R.id.destroyButton);

        // Set up button click listeners
        startButton.setOnClickListener(v -> startLifecycleActivity("Start"));
        resumeButton.setOnClickListener(v -> startLifecycleActivity("Resume"));
        pauseButton.setOnClickListener(v -> startLifecycleActivity("Pause"));
        stopButton.setOnClickListener(v -> startLifecycleActivity("Stop"));
        restartButton.setOnClickListener(v                              ->
startLifecycleActivity("Restart"));
        destroyButton.setOnClickListener(v                              ->
startLifecycleActivity("Destroy"));
    }

    private void startLifecycleActivity(String lifecycleEvent) {
        Intent intent = new Intent(MainActivity.this, LifecycleActivity.class);
        intent.putExtra("LIFECYCLE_EVENT", lifecycleEvent);
        startActivity(intent);
    }
}
```

activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <TextView
        android:id="@+id/descriptionTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Choose a lifecycle event to demonstrate"
        android:textSize="18sp"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="20dp"
        android:layout_alignParentTop="true"/>

    <Button
        android:id="@+id/startButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Start"
        android:layout_below="@id/descriptionTextView"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>

    <Button
        android:id="@+id/resumeButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Resume"
        android:layout_below="@id/startButton"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>

    <Button
        android:id="@+id/pauseButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Pause"
        android:layout_below="@id/resumeButton"
```

```xml
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>


    <Button
        android:id="@+id/stopButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Stop"
        android:layout_below="@id/pauseButton"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>


    <Button
        android:id="@+id/restartButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Restart"
        android:layout_below="@id/stopButton"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>


    <Button
        android:id="@+id/destroyButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Destroy"
        android:layout_below="@id/restartButton"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"/>

</RelativeLayout>
```

activity_lifecycle.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">


    <TextView
        android:id="@+id/lifecycleTextView"
        android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"
        android:text="Lifecycle event will be shown here"
        android:textSize="18sp"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

LifecycleActivity.java

```java
package com.example.problem3;

import android.os.Bundle;
import android.util.Log;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class LifecycleActivity extends AppCompatActivity {

    private static final String TAG = "ActivityLifecycle";
    private TextView lifecycleTextView;

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

        lifecycleTextView = findViewById(R.id.lifecycleTextView);

        String lifecycleEvent = getIntent().getStringExtra("LIFECYCLE_EVENT");
        if (lifecycleEvent != null) {
            lifecycleTextView.setText("Lifecycle Event: " + lifecycleEvent);
            Log.d(TAG, "onCreate: " + lifecycleEvent);
        }
    }

    @Override
    protected void onStart() {
        super.onStart();
        logLifecycleEvent("onStart");
    }

    @Override
    protected void onResume() {
```

```java
        super.onResume();

        logLifecycleEvent("onResume");

    }

    @Override
    protected void onPause() {

        super.onPause();

        logLifecycleEvent("onPause");

    }

    @Override
    protected void onStop() {

        super.onStop();

        logLifecycleEvent("onStop");

    }

    @Override
    protected void onRestart() {

        super.onRestart();

        logLifecycleEvent("onRestart");

    }

    @Override
    protected void onDestroy() {

        super.onDestroy();

        logLifecycleEvent("onDestroy");

    }

    private void logLifecycleEvent(String event) {

        Log.d(TAG, event + " called");

        lifecycleTextView.setText("Lifecycle Event: " + event);

    }
}
```

OUTPUT:

4. **Write an android application that will display components in GridLayout.**

SOLUTION:

activity_main.java

```java
package com.example.problem4;
```

```java
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private Button button1, button2, button3, button4, button5, button6, button7,
button8, button9;

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

        button1 = findViewById(R.id.button1);
        button2 = findViewById(R.id.button2);
        button3 = findViewById(R.id.button3);
        button4 = findViewById(R.id.button4);
        button5 = findViewById(R.id.button5);
        button6 = findViewById(R.id.button6);
        button7 = findViewById(R.id.button7);
        button8 = findViewById(R.id.button8);
        button9 = findViewById(R.id.button9);

        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 1 clicked");
            }
        });

        button2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 2 clicked");
            }
        });

        button3.setOnClickListener(new View.OnClickListener() {
```

```java
            @Override
            public void onClick(View v) {
                showToast("Button 3 clicked");
            }
        });

        button4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 4 clicked");
            }
        });

        button5.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 5 clicked");
            }
        });

        button6.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 6 clicked");
            }
        });

        button7.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 7 clicked");
            }
        });

        button8.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 8 clicked");
            }
        });

        button9.setOnClickListener(new View.OnClickListener() {
```

```java
            @Override
            public void onClick(View v) {
                showToast("Button 9 clicked");

            }

        });

    }


    private void showToast(String message) {
        Toast.makeText(MainActivity.this, message, Toast.LENGTH_SHORT).show();

    }

}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<GridLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:columnCount="3"
    android:rowCount="3"
    android:padding="16dp">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Text 1"
        android:layout_columnSpan="3"
        android:gravity="center"
        android:textSize="24sp"
        android:layout_gravity="center"
        android:layout_marginBottom="16dp"/>

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 1"/>

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```xml
        android:text="Button 2"/>

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 3"/>

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 4"/>

    <Button
        android:id="@+id/button5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 5"/>

    <Button
        android:id="@+id/button6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 6"/>

    <Button
        android:id="@+id/button7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 7"/>

    <Button
        android:id="@+id/button8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 8"/>

    <Button
        android:id="@+id/button9"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```
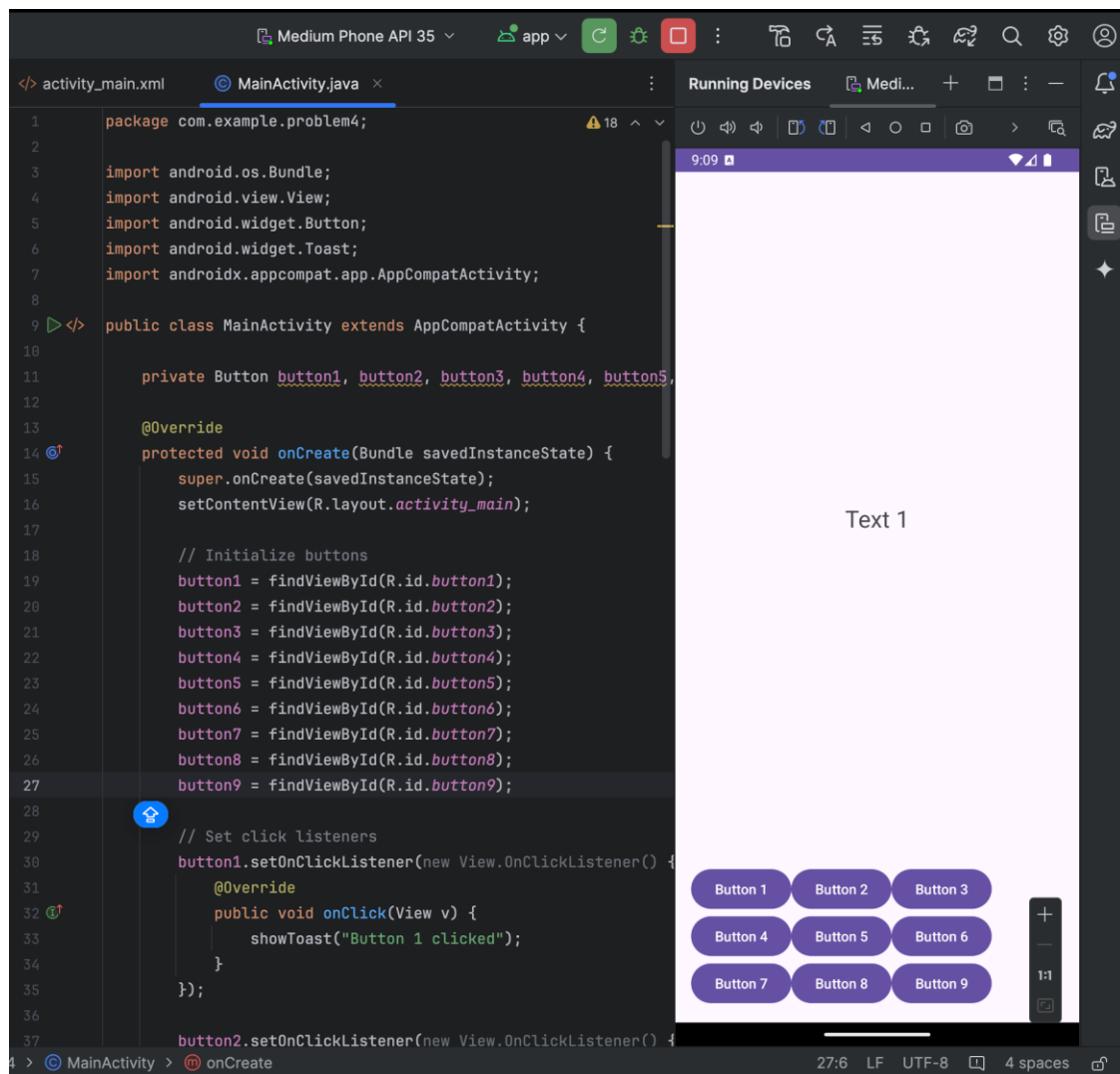
```
        android:text="Button 9"/>

</GridLayout>
```

OUTPUT:

5. **Write an android application that will display components in TableLayout.**

SOLUTION:

activity_main.java:

```
package com.example.problem5;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
```

```java
    private Button button1, button2, button3;

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

        button1 = findViewById(R.id.button1);
        button2 = findViewById(R.id.button2);
        button3 = findViewById(R.id.button3);

        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 1 clicked");
            }
        });

        button2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 2 clicked");
            }
        });

        button3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showToast("Button 3 clicked");
            }
        });
    }

    private void showToast(String message) {
        Toast.makeText(MainActivity.this, message, Toast.LENGTH_SHORT).show();
    }
}
```

activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    android:stretchColumns="1">

<TableRow
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:padding="8dp">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Label 1"
        android:textSize="18sp"/>

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 1"/>
</TableRow>

<TableRow
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:padding="8dp">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Label 2"
        android:textSize="18sp"/>

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button 2"/>
</TableRow>
```

```xml
    <TableRow
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:padding="8dp">

        <TextView
            android:id="@+id/textView3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Label 3"
            android:textSize="18sp"/>

        <Button
            android:id="@+id/button3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Button 3"/>
    </TableRow>

</TableLayout>
```

OUTPUT:
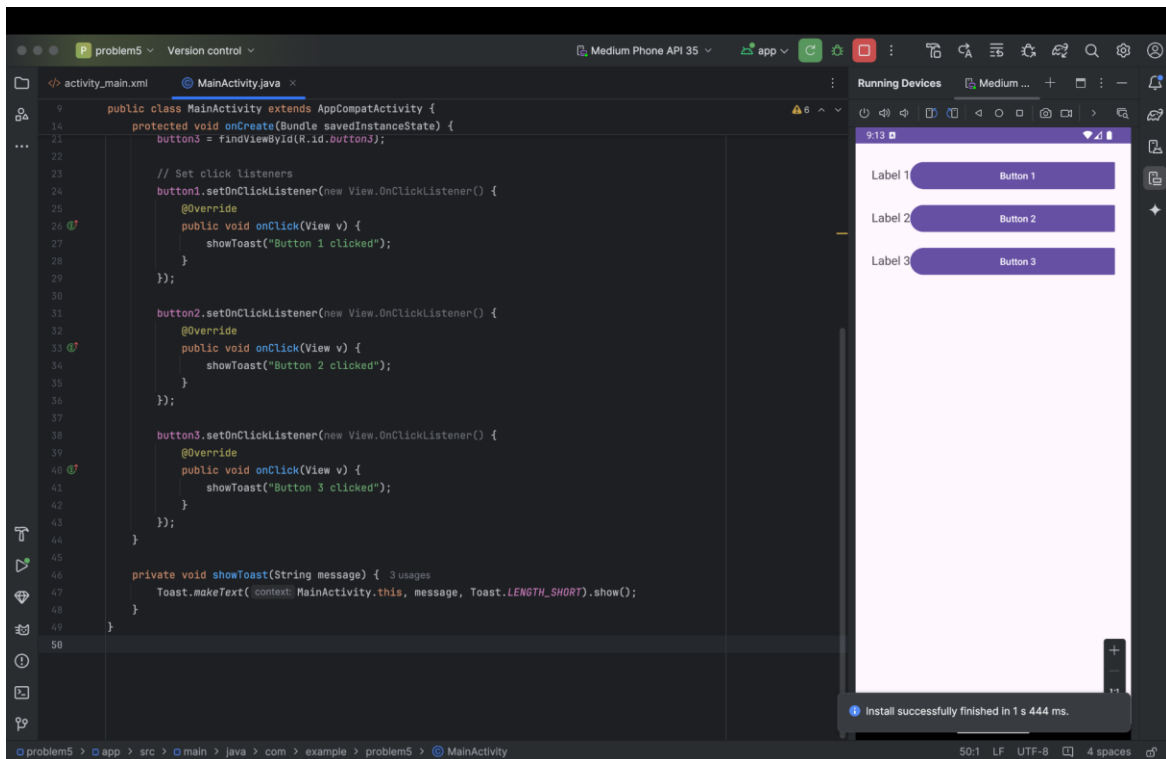
6. **Write an android application which will change the background color of an activity on switching the state of the ToggleButton.**

SOLUTION:

activity_main.java:

```java
package com.example.problem6;

import android.graphics.Color;
import android.os.Bundle;
import android.widget.RelativeLayout;
import android.widget.TextView;
import android.widget.ToggleButton;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private ToggleButton toggleButton;
    private TextView statusTextView;
    private RelativeLayout layout;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        layout = new RelativeLayout(this);
        layout.setLayoutParams(new RelativeLayout.LayoutParams(
                RelativeLayout.LayoutParams.MATCH_PARENT,
                RelativeLayout.LayoutParams.MATCH_PARENT
        ));

        toggleButton = new ToggleButton(this);
        RelativeLayout.LayoutParams          toggleParams          =          new
RelativeLayout.LayoutParams(
                RelativeLayout.LayoutParams.WRAP_CONTENT,
                RelativeLayout.LayoutParams.WRAP_CONTENT
        );
        toggleParams.addRule(RelativeLayout.CENTER_HORIZONTAL);
        toggleParams.addRule(RelativeLayout.CENTER_VERTICAL);
        toggleButton.setLayoutParams(toggleParams);
        toggleButton.setTextOn("ON");
        toggleButton.setTextOff("OFF");

        statusTextView = new TextView(this);
```

```java
        RelativeLayout.LayoutParams textParams = new RelativeLayout.LayoutParams(
                RelativeLayout.LayoutParams.WRAP_CONTENT,
                RelativeLayout.LayoutParams.WRAP_CONTENT
        );
        textParams.addRule(RelativeLayout.BELOW, toggleButton.getId());
        textParams.addRule(RelativeLayout.CENTER_HORIZONTAL);
        textParams.setMargins(0, 20, 0, 0);
        statusTextView.setLayoutParams(textParams);
        statusTextView.setText("Toggle is OFF");
        statusTextView.setTextSize(24);

        layout.addView(toggleButton);
        layout.addView(statusTextView);

        setContentView(layout);

        updateBackgroundColor(toggleButton.isChecked());

        toggleButton.setOnCheckedChangeListener((buttonView, isChecked) -> {

            updateBackgroundColor(isChecked);

            if (isChecked) {
                statusTextView.setText("Toggle is ON");
            } else {
                statusTextView.setText("Toggle is OFF");
            }
        });
    }

    private void updateBackgroundColor(boolean isChecked) {
        if (isChecked) {
            layout.setBackgroundColor(Color.GREEN);
        } else {
            layout.setBackgroundColor(Color.RED);
        }
    }
}
```
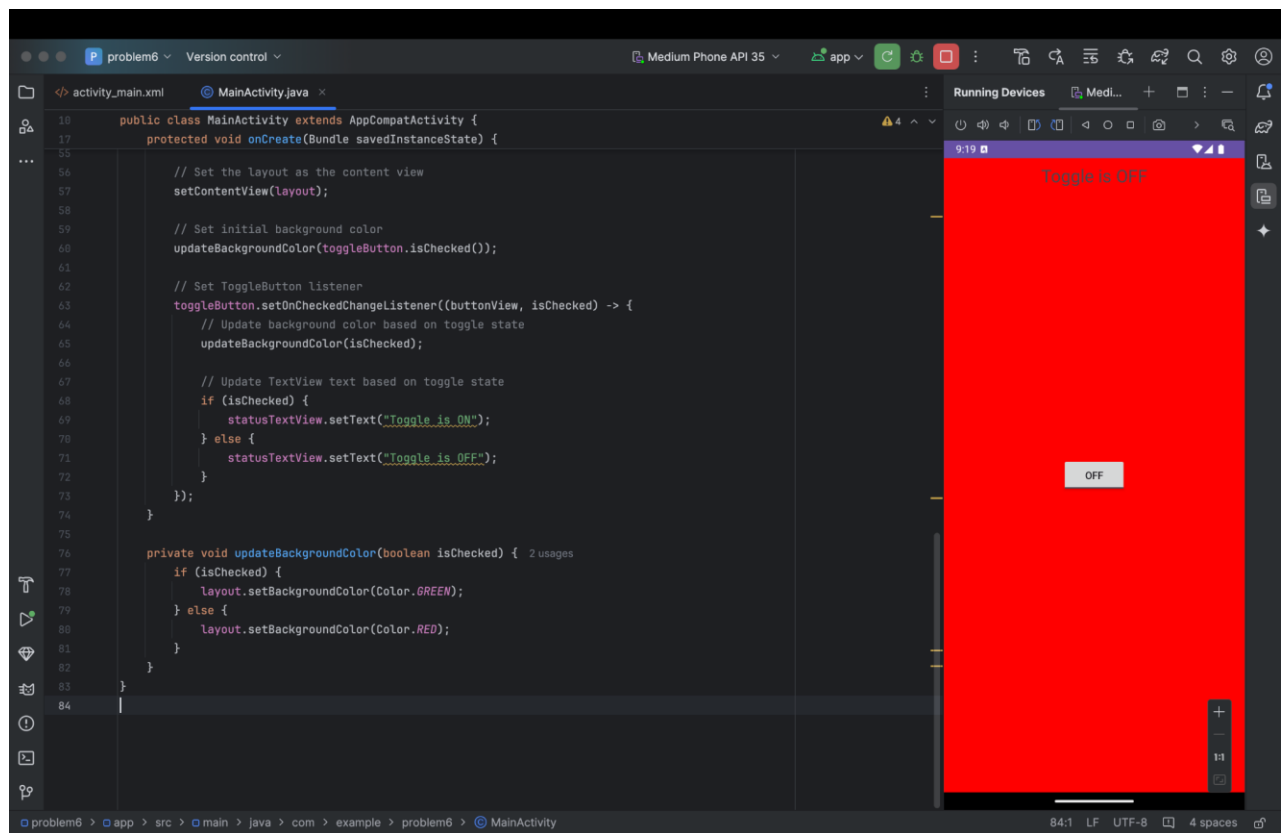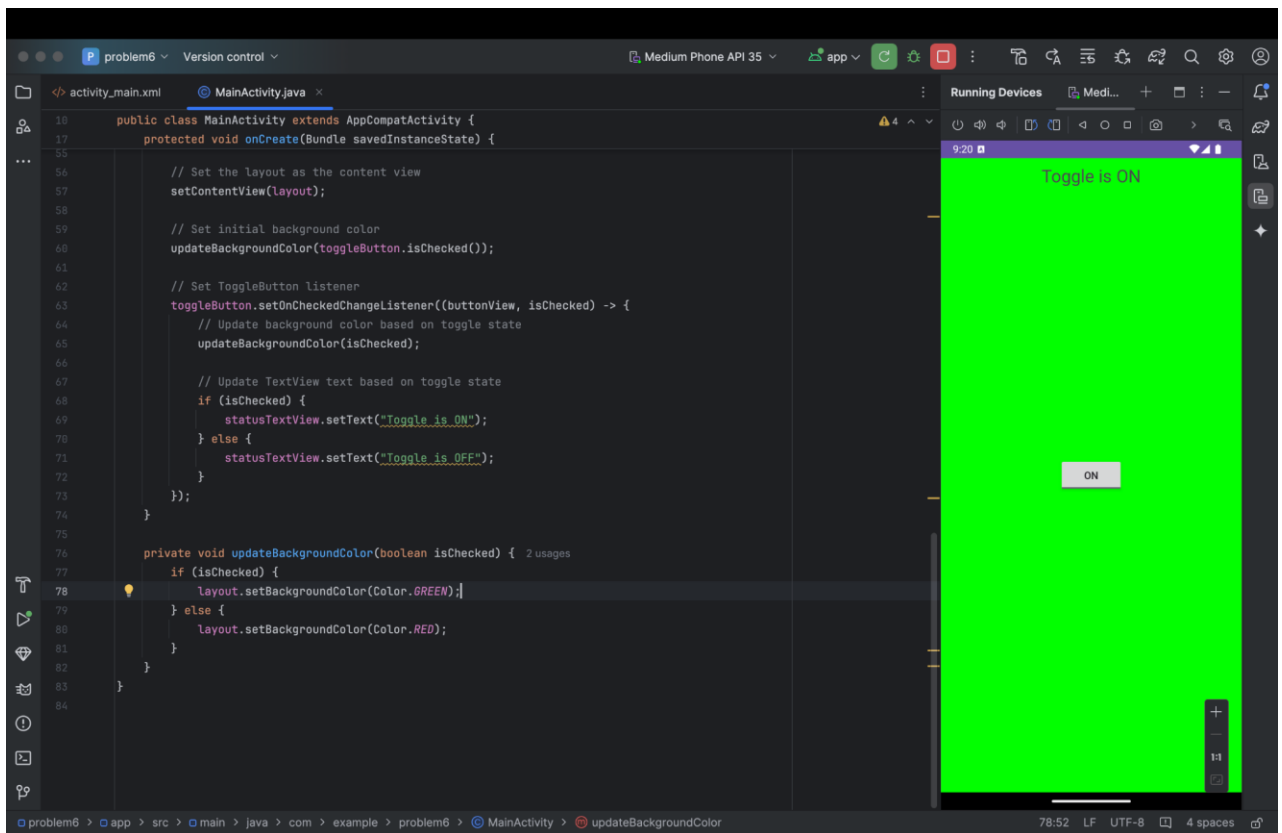
activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
    android:layout_width="match_parent"
    android:layout_height="match_parent">
</RelativeLayout>
```

OUTPUT:

7. **Write an android application which will display the menu with the price of the menu item. Once the final order is completed display the total bill amount to the user in Toast. Use CheckBox for creating the menu items.**

SOLUTION:

activity_main.java:

```java
package com.example.problem7;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private CheckBox checkBoxItem1;
    private CheckBox checkBoxItem2;
    private CheckBox checkBoxItem3;
```

```java
    private Button completeOrderButton;

    private final double ITEM1_PRICE = 5.00;
    private final double ITEM2_PRICE = 7.50;
    private final double ITEM3_PRICE = 10.00;

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

        checkBoxItem1 = findViewById(R.id.checkBoxItem1);
        checkBoxItem2 = findViewById(R.id.checkBoxItem2);
        checkBoxItem3 = findViewById(R.id.checkBoxItem3);
        completeOrderButton = findViewById(R.id.completeOrderButton);

        completeOrderButton.setOnClickListener(v -> calculateAndShowTotal());
    }

    private void calculateAndShowTotal() {
        double total = 0.00;

        if (checkBoxItem1.isChecked()) {
            total += ITEM1_PRICE;
        }
        if (checkBoxItem2.isChecked()) {
            total += ITEM2_PRICE;
        }
        if (checkBoxItem3.isChecked()) {
            total += ITEM3_PRICE;
        }

        String message = "Total Bill Amount: $" + String.format("%.2f", total);
        Toast.makeText(MainActivity.this, message, Toast.LENGTH_LONG).show();
    }
}
```

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"
```

```xml
    android:orientation="vertical"
    android:padding="16dp">

<CheckBox
    android:id="@+id/checkBoxItem1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Item 1 - $5.00" />

<CheckBox
    android:id="@+id/checkBoxItem2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Item 2 - $7.50" />

<CheckBox
    android:id="@+id/checkBoxItem3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Item 3 - $10.00" />

<Button
    android:id="@+id/completeOrderButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Complete Order"
    android:layout_marginTop="16dp" />

</LinearLayout>
```
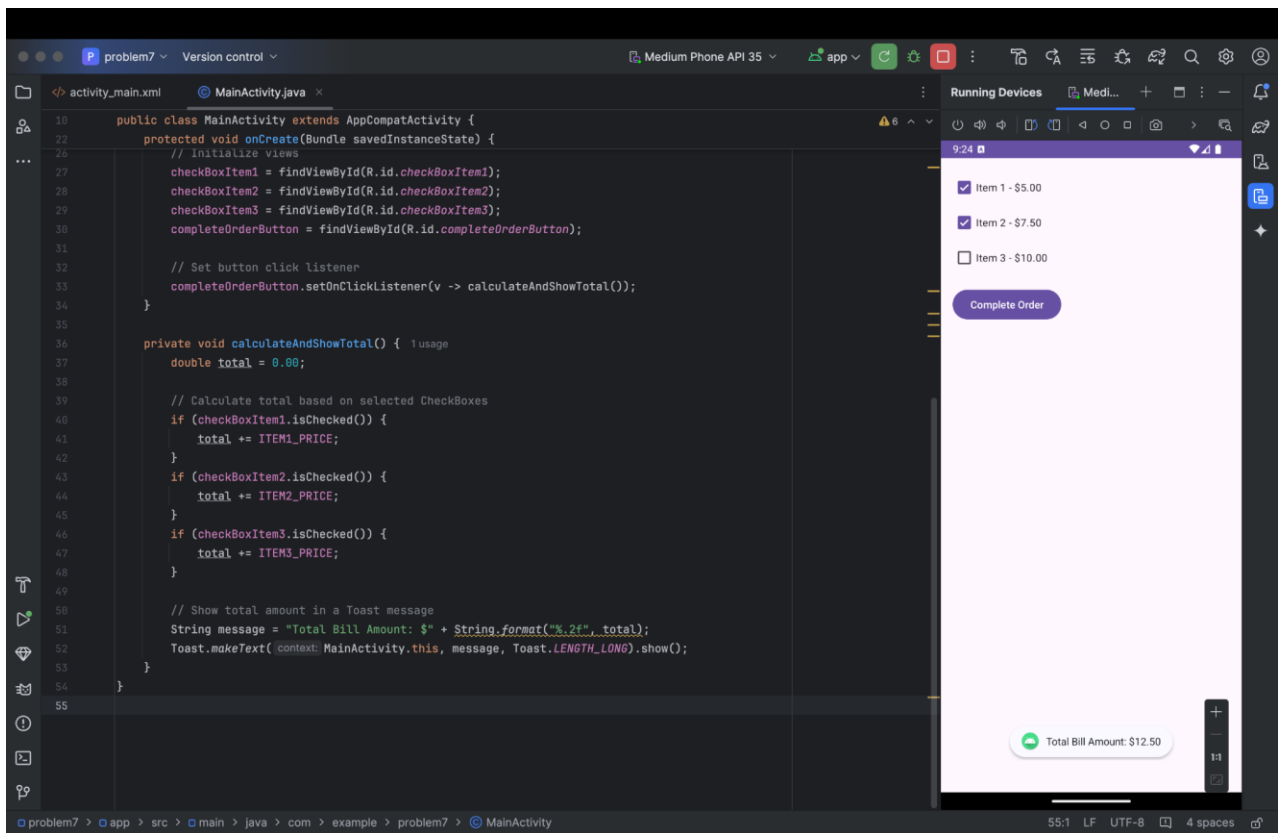
OUTPUT:

8. **Write an android application for rating a movie on the scale of 1 to 5. Display the result in TextView.**

SOLUTION:

acitivity_main.java:

```java
package com.example.problem8;

import android.os.Bundle;
import android.widget.RatingBar;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private RatingBar ratingBar;
    private TextView ratingTextView;

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

        ratingBar = findViewById(R.id.ratingBar);
        ratingTextView = findViewById(R.id.ratingTextView);
```

```
        ratingBar.setOnRatingBarChangeListener((ratingBar, rating, fromUser) -> {
            // Update TextView with the selected rating
            ratingTextView.setText("Rating: " + (int) rating);
        });
    }
}
```

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"
    android:padding="16dp">

    <RatingBar
        android:id="@+id/ratingBar"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:numStars="5"
        android:stepSize="1"
        android:layout_gravity="center"/>

    <TextView
        android:id="@+id/ratingTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Rating: 0"
        android:textSize="24sp"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"/>

</LinearLayout>
```
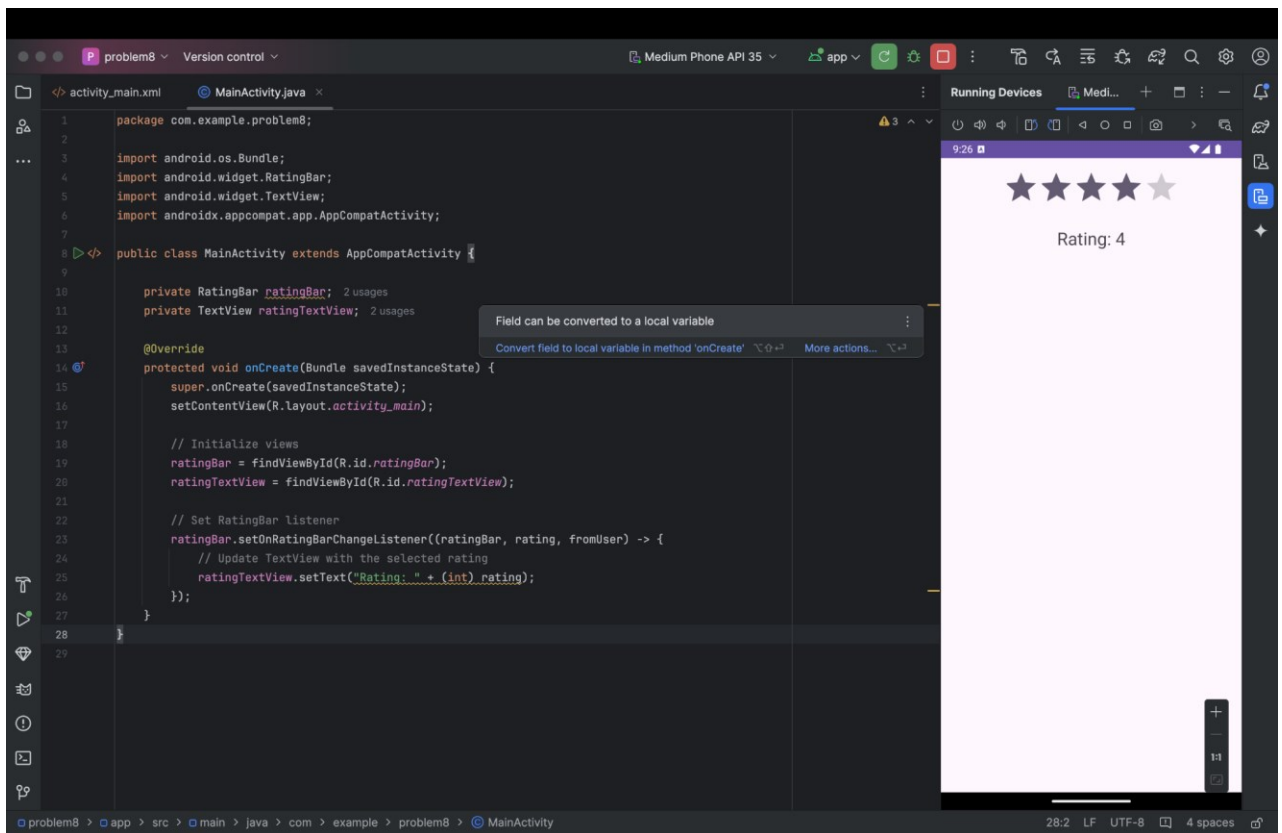
OUTPUT:

9. **Write an android application using Spinner for selecting the Cricket Team Players from the given list. Display the name of the Cricketer in Toast.**

SOLUTION:

activity_main.java

```java
package com.example.problem9;

import android.os.Bundle;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private Spinner spinnerPlayers;

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


        spinnerPlayers = findViewById(R.id.spinnerPlayers);
```

```java
        ArrayAdapter<CharSequence>                adapter                =
ArrayAdapter.createFromResource(this,
                R.array.cricket_players, android.R.layout.simple_spinner_item);

adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);

        spinnerPlayers.setAdapter(adapter);

        spinnerPlayers.setOnItemSelectedListener(new
AdapterView.OnItemSelectedListener() {
            @Override
            public void onItemSelected(AdapterView<?> parent, android.view.View
view, int position, long id) {

                String           selectedPlayer        =           (String)
parent.getItemAtPosition(position);

                Toast.makeText(MainActivity.this,   "Selected   Player:   "   +
selectedPlayer, Toast.LENGTH_SHORT).show();
            }

            @Override
            public void onNothingSelected(AdapterView<?> parent) {

            }
        });
    }
}
```

activit_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"
    android:padding="16dp">

    <Spinner
        android:id="@+id/spinnerPlayers"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
        android:entries="@array/cricket_players" />



</LinearLayout>
```

string.xml:

```
<resources>
    <string name="app_name">Problem9</string>
    <string-array name="cricket_players">
        <item>Player 1</item>
        <item>Player 2</item>
        <item>Player 3</item>
        <item>Player 4</item>
        <item>Player 5</item>
    </string-array>
</resources>
```
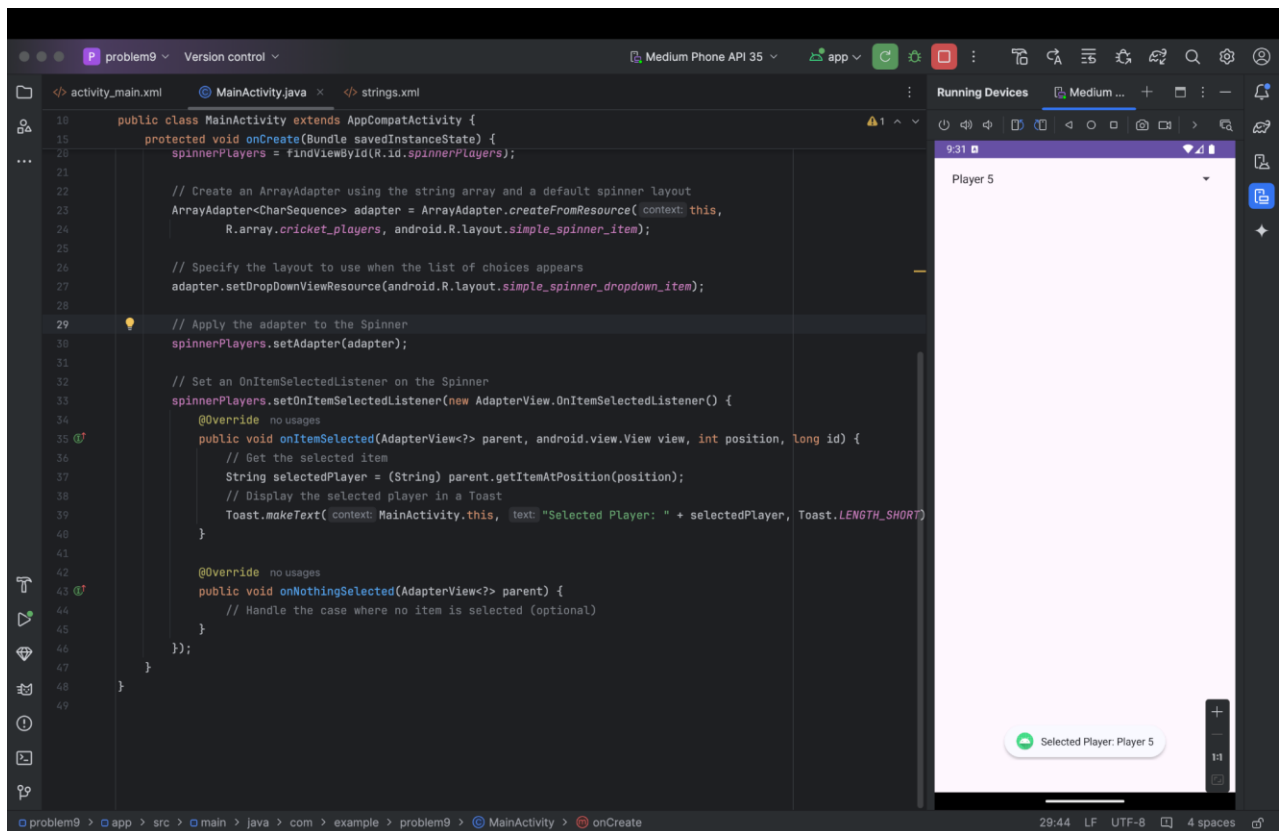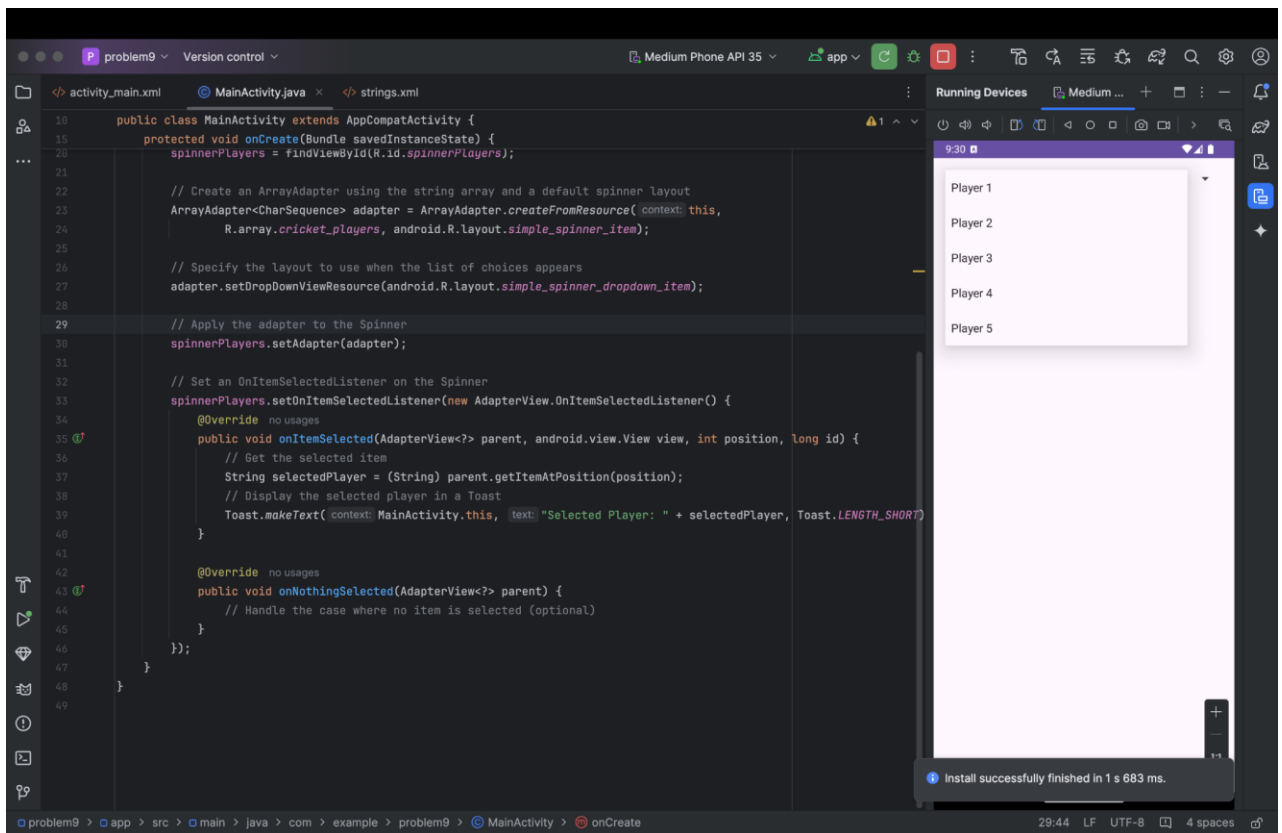
OUTPUT:

10. Write an android application which will demonstrate the use of ImageButton.

SOLUTION:

activity_main.java:

```
package com.example.problem10;

import android.os.Bundle;
import android.view.View;
import android.widget.ImageButton;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private ImageButton imageButton;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```java
        setContentView(R.layout.activity_main);

        imageButton = findViewById(R.id.imageButton);

        imageButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(MainActivity.this,    "ImageButton    Clicked!",
Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```

activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <ImageButton
        android:id="@+id/imageButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:src="@drawable/sample_image"
        android:contentDescription="@string/image_button_desc"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

sample_image.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android">
    <solid android:color="#FF5722"/>
    <size android:width="100dp" android:height="100dp"/>
</shape>
```

strings.xml:

```xml
<resources>
    <string name="app_name">Problem10</string>
```

```
    <string name="image_button_desc">Click me to show a message</string>
</resources>
```

OUTPUT: