

Q.1] Construct an Android app that toggles a light bulb ON and OFF when the user clicks on toggle button

Step 1: XML Layout (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"
    tools:context=".MainActivity">

    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textOn="ON"
        android:textOff="OFF"
        android:checked="false"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

Step 2: Java Code (MainActivity.java)

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.CompoundButton;
import android.widget.Toast;
```

```
import android.widget.ToggleButton;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    @Override
```

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

```
        super.onCreate(savedInstanceState);
```

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

```
        ToggleButton toggleButton = findViewById(R.id.toggleButton);
```

```
        toggleButton.setOnCheckedChangeListener(new  
CompoundButton.OnCheckedChangeListener() {
```

```
            @Override
```

```
            public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
```

```
                if (isChecked) {
```

```
                    // Code to turn the light bulb ON
```

```
                    Toast.makeText(MainActivity.this, "Light Bulb ON", Toast.LENGTH_SHORT).show();
```

```
                } else {
```

```
                    // Code to turn the light bulb OFF
```

```
                    Toast.makeText(MainActivity.this, "Light Bulb OFF", Toast.LENGTH_SHORT).show();
```

```
                }
```

```
            }
```

```
        });
```

```
    }
```

```
}
```