

Mobile Application Development

Assignment-2

1)Program to design an app to place a text view, edit view in a constraint layout. Provide toast greeting message.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity">

    <TextView
        android:layout_width="166dp"
        android:layout_height="37dp"
        android:text="Hello World!"
        android:gravity="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.308" />

    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Name"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

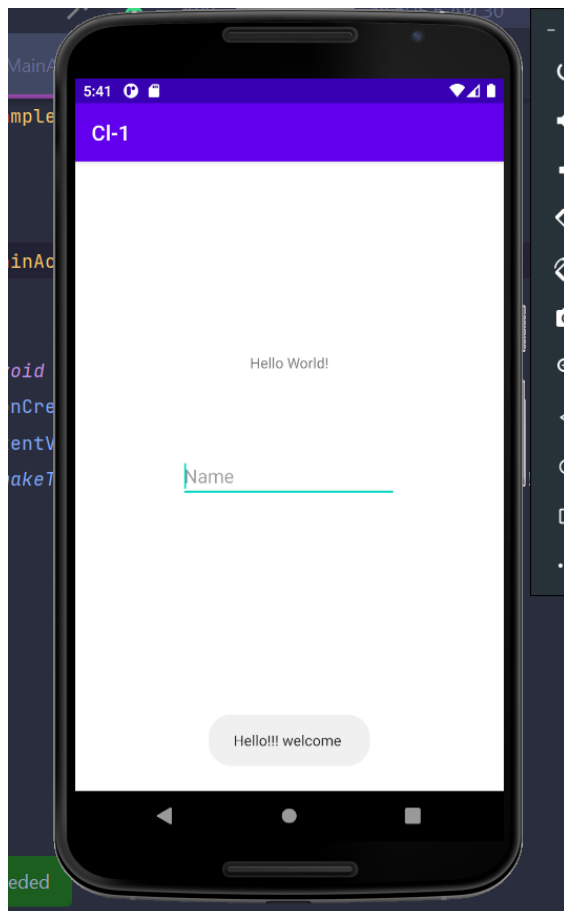
```
package com.example.cl_1;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toast.makeText(getApplicationContext(), "Hello!!! welcome ",
        Toast.LENGTH_SHORT).show();
    }
}
```



2) Program to design an app to place two image views and toast messages.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="203dp"
        android:layout_height="56dp"
        android:gravity="center"
        android:text="Welcome!"
        android:textSize="36dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.132" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="390dp"
        android:layout_height="268dp"
        android:layout_marginTop="32dp"
        android:src="@drawable/snow"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.476"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="250dp"
        android:layout_height="220dp"
        android:layout_marginTop="60dp"
        android:src="@drawable/snow2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.496"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/imageView"
        app:layout_constraintVertical_bias="0.0" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```

package com.example.imageview;

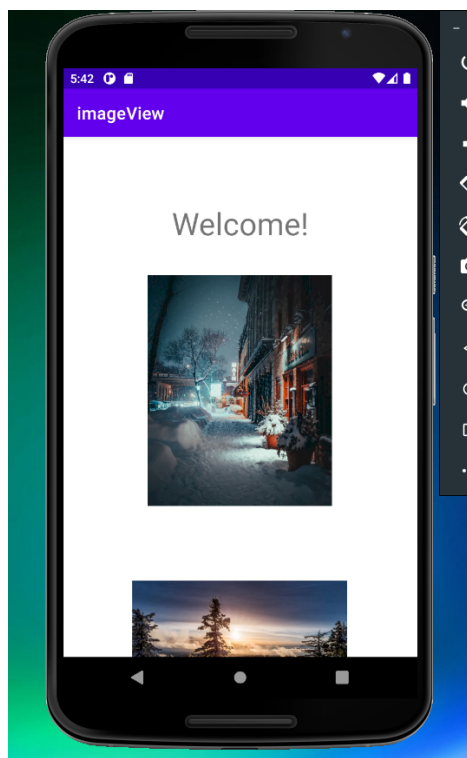
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

```



3) Program to create a 2 edit views, a text view and two text buttons. On click of first button display a message hello from button1 on text view and onclick of second button display hello from button2 on text view.

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    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=".MainActivity">
```

```
<TextView
```

```
    android:id="@+id/textView"
```

```
    android:layout_width="228dp"
```

```
    android:layout_height="48dp"
```

```
    android:gravity="center"
```

```
    android:text="Welcome"
```

```
    android:textSize="32dp"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.497"
```

```
    app:layout_constraintLeft_toLeftOf="parent"
```

```
    app:layout_constraintRight_toRightOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.117" />
```

```
<EditText
```

```
    android:id="@+id/editTextTextPersonName"
```

```
    android:layout_width="259dp"
```

```
    android:layout_height="58dp"
```

```
    android:layout_marginEnd="4dp"
```

```
    android:ems="10"
```

```
    android:inputType="textPersonName"
```

```
    android:hint="Name"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.506"
```

```
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toBottomOf="@+id/textView"
```

```
    app:layout_constraintVertical_bias="0.124" />
```

```
<EditText
```

```
    android:id="@+id/editTextTextPersonName2"
```

```
    android:layout_width="259dp"
```

```
    android:layout_height="58dp"
```

```
    android:layout_marginTop="44dp"
```

```
    android:ems="10"
```

```
    android:hint="USN"
```

```
    android:inputType="textPersonName"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="@+id/editTextTextPersonName"
```

```
    app:layout_constraintHorizontal_bias="0.0"
```

```
    app:layout_constraintStart_toStartOf="@+id/editTextTextPersonName"
```

```
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
```

```
    app:layout_constraintVertical_bias="0.032" />
```

```
<Button
```

```
    android:id="@+id/button"
```

```
    android:layout_width="102dp"
```

```
    android:layout_height="65dp"
```

```
    android:layout_marginTop="8dp"
```

```
    android:text="Button1"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.158"
```

```

        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.647" />

<Button
    android:id="@+id/button2"
    android:layout_width="102dp"
    android:layout_height="65dp"
    android:text="Button2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.812"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.651" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="179dp"
    android:layout_height="55dp"
    android:layout_marginTop="317dp"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.643" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.buttonwise_display;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
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 org.w3c.dom.Text;

public class MainActivity extends AppCompatActivity {

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

```

```

        Button btn1 = (Button) findViewById(R.id.button);
        Button btn2 = (Button) findViewById(R.id.button2);
        TextView txt = (TextView) findViewById(R.id.textView);
        btn1.setOnClickListener(new View.OnClickListener() {
            @SuppressWarnings("SetTextI18n")
            @Override
            public void onClick(View view) {
                txt.setText("Button1 Clicked");
            }
        });

        btn2.setOnClickListener(new View.OnClickListener() {
            @SuppressWarnings("SetTextI18n")
            @Override
            public void onClick(View view) {
                txt.setText("Button 2 clicked");
            }
        });
    }
}

```

4) Program to create an image button and toast message display what image it is.

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    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=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="180dp"
        android:layout_height="0dp"
        android:layout_marginTop="90dp"
        android:layout_marginBottom="336dp"
        android:text="Image Button"
        android:textColor="@color/black"
        android:gravity="center"
        app:layout_constraintBottom_toTopOf="@+id/imageButton2"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.13" />

    <ImageButton

```

```

        android:id="@+id/imageButton"
        android:layout_width="224dp"
        android:layout_height="190dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.486"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.356"
        app:srcCompat="@drawable/snow"
        android:contentDescription="TODO" />

```

```

<ImageButton
    android:id="@+id/imageButton2"
    android:layout_width="228dp"
    android:layout_height="197dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.853"
    app:srcCompat="@drawable/aurora"
    android:contentDescription="TODO" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.img_btn;

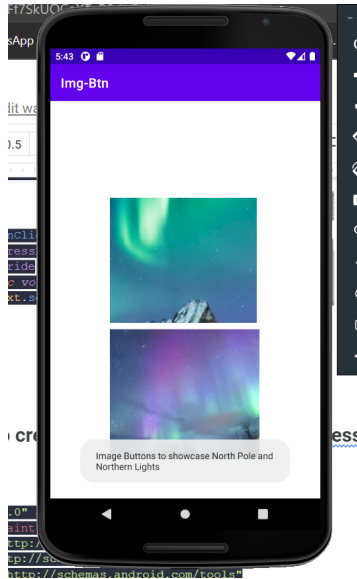
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toast.makeText(getApplicationContext(), "Image Buttons to showcase North Pole
and Northern Lights", Toast.LENGTH_SHORT).show();
    }
}

```

5) Program to include toggle buttons and a text button display appropriate toast messages.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    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=".MainActivity"
    android:id="@+id/clvar">
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="288dp"
    android:layout_height="73dp"
    android:layout_marginBottom="102dp"
    android:gravity="center"
    android:text="Toggle Button"
    android:textColor="@color/black"
    android:textSize="32dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.14" />
```

```
<ToggleButton
    android:id="@+id/toggleButton"
    android:layout_width="174dp"
    android:layout_height="118dp"
    android:text="ToggleButton"
    android:textOff="Dark Mode"
```

```

        android:textOn="lightMode"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.togglebtn;

import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import androidx.compose.ui.graphics.Color;
import androidx.constraintlayout.widget.ConstraintLayout;

import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
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 tbtn = (ToggleButton) findViewById(R.id.toggleButton);
        ConstraintLayout cl = (ConstraintLayout) findViewById(R.id.clvar);
        TextView txt = (TextView) findViewById(R.id.textView);
        tbtn.setOnClickListener(new View.OnClickListener() {
            @RequiresApi(api = Build.VERSION_CODES.M)
            @Override
            public void onClick(View view) {
                if(tbtn.isChecked()){
                    cl.setBackgroundResource(R.color.dark);
                    txt.setTextColor(getResources().getColor(R.color.white, null));
                    Toast.makeText(getApplicationContext(), "Dark Mode Enabled",
Toast.LENGTH_SHORT).show();
                }
                else
                {
                    cl.setBackgroundResource(R.color.light);
                    txt.setTextColor(getResources().getColor(R.color.purple_700,
null));
                    Toast.makeText(getApplicationContext(), "Light Mode Enabled",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}

```

```

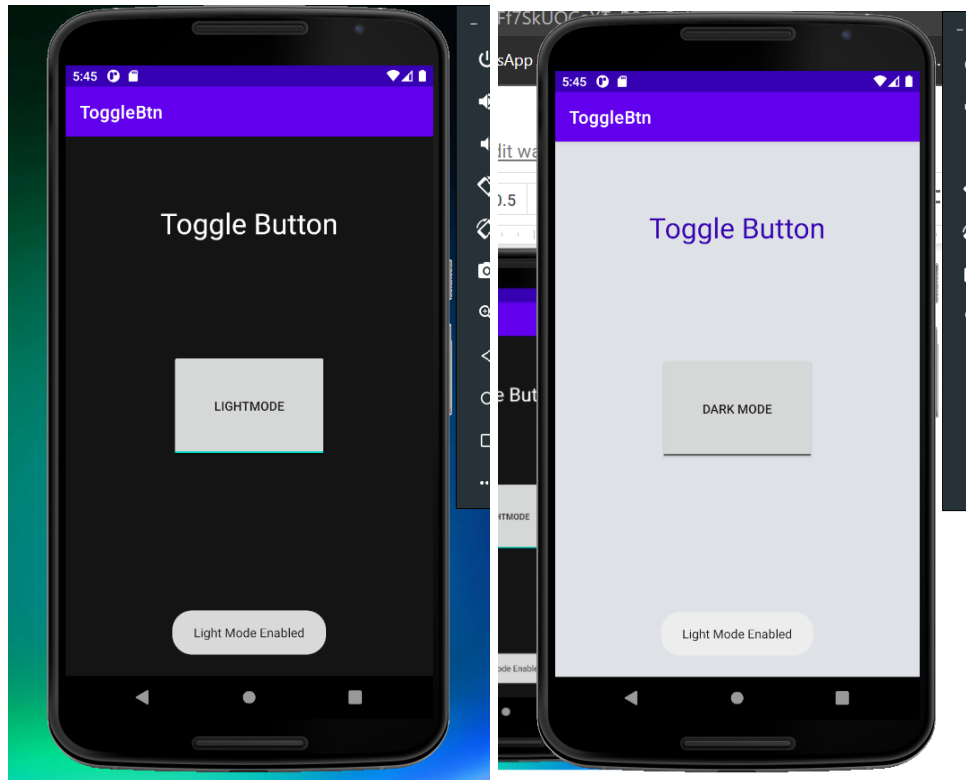
    }
    });
}

```

```

}

```



6) Program to create an app with a switch and a button. Display appropriate toast messages.

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    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=".MainActivity"
    android:id="@+id/clvar">

```

```

    <TextView
        android:id="@+id/textView"
        android:layout_width="328dp"
        android:layout_height="0dp"
        android:layout_marginTop="73dp"
        android:layout_marginBottom="371dp"
        android:gravity="center"

```

```

        android:text="Switch Button Demo"
        android:textColor="@color/black"
        android:textSize="32dp"
        app:layout_constraintBottom_toTopOf="@+id/button"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.109" />

```

```

<Switch
    android:id="@+id/switch1"
    android:layout_width="199dp"
    android:layout_height="73dp"
    android:gravity="center"
    android:text="Dark Mode"
    android:textSize="20dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.423" />

```

```

<Button
    android:id="@+id/button"
    android:layout_width="144dp"
    android:layout_height="67dp"
    android:layout_marginBottom="179dp"
    android:text="Button"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.switchbtn;

import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;

import android.annotation.SuppressLint;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

```

```

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    @SuppressWarnings("UseSwitchCompatOrMaterialCode") Switch tbtn = (Switch)
findViewById(R.id.switch1);
    Button btn = (Button) findViewById(R.id.button);
    ConstraintLayout cl = (ConstraintLayout) findViewById(R.id.clvar);
    tbtn.setOnClickListener(new View.OnClickListener() {
        @RequiresApi(api = Build.VERSION_CODES.M)
        @Override
        public void onClick(View view) {
            if(tbtn.isChecked()){
                tbtn.setText("Light Mode");
                cl.setBackgroundResource(R.color.dark);
                tbtn.setTextColor(getResources().getColor(R.color.white, null));
            }
            else{
                tbtn.setText("Dark Mode");
                cl.setBackgroundResource(R.color.light);
                tbtn.setTextColor(getResources().getColor(R.color.black, null));
            }
        }
    });
    btn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Toast.makeText(getApplicationContext(), "You clicked the text button ",
Toast.LENGTH_SHORT).show();
        }
    });
}
}

```

7)Program to change the background of the layout on click of buttons

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity"
    android:background="@color/start_yellow"
    android:id="@+id/clvar">

    <TextView
        android:id="@+id/textView"
        android:layout_width="302dp"
        android:layout_height="84dp"

```

```

        android:layout_marginTop="86dp"
        android:layout_marginBottom="164dp"
        android:gravity="center"
        android:text="Color Generator"
        android:textColor="@color/black"
        android:textSize="28dp"
        app:layout_constraintBottom_toTopOf="@+id/button"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.125" />

```

```

<Button
    android:id="@+id/button"
    android:layout_width="138dp"
    android:layout_height="80dp"
    android:text="Click Me"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.563" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.bg_change;

import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;

import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import java.util.Random;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btn = (Button) findViewById(R.id.button);
        ConstraintLayout cl = (ConstraintLayout) findViewById(R.id.clvar);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Random rnd = new Random();
            }
        });
    }
}

```

- **TextView,**
- **image view,**
- **edittext,**
- **textbutton**
- **Image button**
- **Toggle button switch**

also change background of you app.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity"
    android:id="@+id/clvar"
    android:background="@color/start">
```

```
    <TextView
        android:id="@+id/textView"
        android:layout_width="277dp"
        android:layout_height="62dp"
        android:gravity="center"
        android:text="Sign In"
        android:textColor="@color/black"
        android:textSize="28dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.88"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.149" />
```

```
    <EditText
        android:id="@+id/editTextTextEmailAddress"
        android:layout_width="264dp"
        android:layout_height="47dp"
        android:layout_marginBottom="161dp"
        android:ems="10"
        android:inputType="textEmailAddress"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.891"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.449" />
```

```
    <EditText
        android:id="@+id/editTextTextPassword"
        android:layout_width="264dp"
        android:layout_height="47dp"
        android:ems="10"
        android:inputType="textPassword"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.891"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
```

```
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="79dp"
```



```
    android:layout_height="80dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.063"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.331"
    app:srcCompat="@drawable/email" />
```

```
<ImageView
    android:id="@+id/imageView2"
    android:layout_width="74dp"
    android:layout_height="73dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.062"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/pw" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="160dp"
    android:layout_height="84dp"
    android:text="Sign-In"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.85" />
```

```
<Switch
    android:id="@+id/switch1"
    android:layout_width="169dp"
    android:layout_height="43dp"
    android:gravity="center"
    android:text="Dark Mode"
    android:textSize="16dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.933"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.023" />
```

```
<ToggleButton
    android:id="@+id/toggleButton"
    android:layout_width="123dp"
    android:layout_height="67dp"
    android:text="ToggleButton"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.142"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
```

```

        app:layout_constraintVertical_bias="0.688" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="199dp"
    android:layout_height="48dp"
    android:gravity="center"
    android:text="Keep me signed in"
    android:textColor="@color/black"
    android:textSize="19dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.891"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.683" />

<ImageView
    android:id="@+id/imageView3"
    android:layout_width="110dp"
    android:layout_height="117dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.262"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.12"
    app:srcCompat="@drawable/google" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.allfeatures;

import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;

import android.annotation.SuppressLint;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Switch;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        @SuppressLint("UseSwitchCompatOrMaterialCode") Switch tbtn = (Switch)
        findViewById(R.id.switch1);
    }
}

```

```

        ConstraintLayout cl = (ConstraintLayout) findViewById(R.id.clvar);
        tbtn.setOnClickListener(new View.OnClickListener() {
            @RequiresApi(api = Build.VERSION_CODES.M)
            @Override
            public void onClick(View view) {
                if(tbtn.isChecked()){
                    tbtn.setText("Light Mode");
                    cl.setBackgroundResource(R.color.dark);
                    tbtn.setTextColor(getResources().getColor(R.color.white, null));
                }
                else{
                    tbtn.setText("Dark Mode");
                    cl.setBackgroundResource(R.color.start);
                    tbtn.setTextColor(getResources().getColor(R.color.black, null));
                }
            }
        });
    }
}

```

