# MOBILE APPLICATION DEVELOPMENT

TYBCA | 20-133

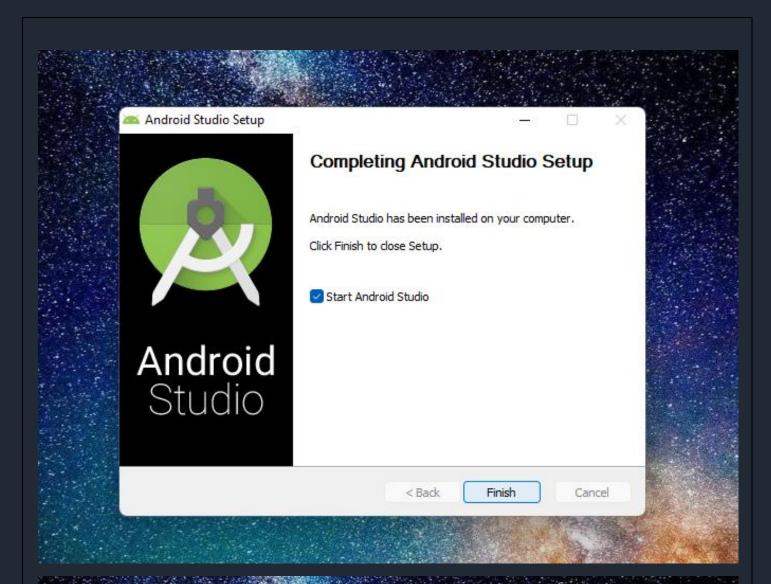
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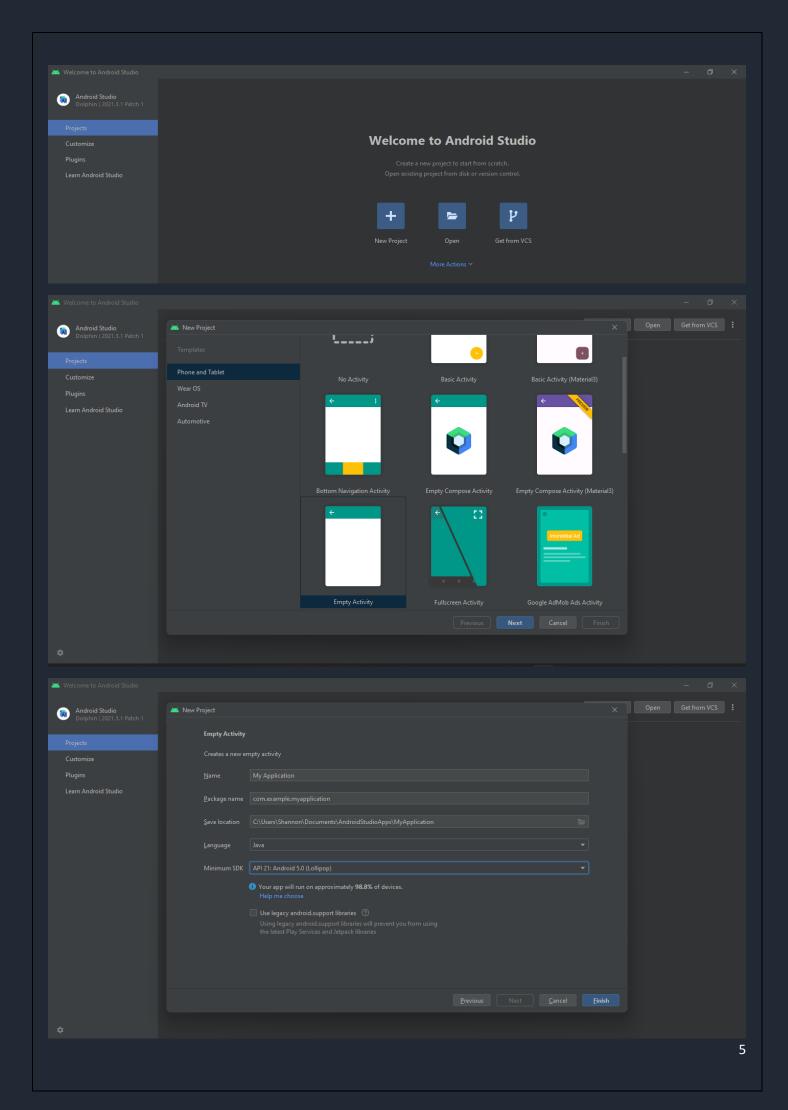
# Setting up Android Studio.











# 1. Create "First Android Application", to display 'Goa University –BCA' in the middle of the screen in the Blue color with White background.

```
<?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=".MainActivity">
    <TextView
        android:id="@+id/textview"
        android:layout width="326dp"
        android:layout height="56dp"
        android:text="Goa University-BCA"
        android:textAlignment="center"
        android:textColor="@color/material dynamic primary50"
        android:textSize="34sp"
        android:textStyle="bold"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
JAVA FILE
package com.example.madlab ex1;
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);
```

# 2. Create sample application with Check username and password only. On successful login, go to the next screen and on failing login, alert user using Toast. Also pass username to next screen.

```
<?xml version = "1.0" encoding = "utf-8"?>
<RelativeLayoutxmlns:android=</pre>
xmlns:tools= "http://schemas.android.com/tools"
android:layout width="match parent"
android:layout height= "match parent" android:paddingLeft=
android:paddingRight= "@dimen/activity horizontal margin"
android:paddingTop= "@dimen/activity vertical margin"
android:paddingBottom= "@dimen/activity vertical margin"
tools:context= ".MainActivity">
<TextViewandroid:text= "Login"
android:layout width="wrap content"
android:layout height= "wrap content"
android:id= "@+id/textview"
android:textSize= "35dp"
android:layout alignParentTop= "true"
android:layout centerHorizontal= "true" />
<EditText
android:id="@+id/editText"
android:layout width="wrap content"
android:layout height="wrap content"
android:layout below="@+id/imageView"
android:layout alignParentStart="true"
android:layout alignParentLeft="true"
android:layout alignParentEnd="true"
android:layout alignParentRight="true"
android:layout marginStart="-4dp"
android:layout marginLeft="-4dp"
android:layout marginTop="46dp"
android:layout marginEnd="0dp"
android:layout marginRight="0dp"
android:focusable="true"
android:hint="Enter Name"
android:textColorHighlight="#ff7eff15"
android:textColorHint="#ffff25e6"
tools:ignore="UnknownId" />
```

```
<EditText
android:id="@+id/editText2"
android:layout width="wrap content"
android: layout height="wrap content"
android:layout below="@+id/editText"
android:layout alignEnd="@+id/editText"
android:layout alignRight="@+id/editText"
android:layout alignParentStart="true"
android:layout alignParentLeft="true"
android: layout marginStart="-1dp"
android:layout marginLeft="-1dp"
android:layout marginTop="28dp"
android:layout marginEnd="1dp"
android:layout marginRight="1dp"
android:ems="10"
android:hint="Password"
android:inputType="textPassword"
android:textColorHint="#ffff299f" />
<TextView
android:id="@+id/textView2"
android: layout width="wrap content"
android:layout height="wrap content"
android:layout below="@+id/editText2"
android:layout alignParentStart="true"
android:layout alignParentLeft="true"
android:layout marginStart="8dp"
android:layout marginLeft="8dp"
android:layout marginTop="38dp"
android:text="Attempts Left:"
android:textSize="25dp" />
<TextView
android:layout width="wrap content"
android:layout height="wrap content"
android:text="New Text"
android:id="@+id/textView3"
android:layout alignTop="@+id/textView2"
android:layout alignParentRight="true"
android:layout alignParentEnd="true"
android:layout alignBottom="@+id/textView2"
android:layout toEndOf="@+id/textview"
android:textSize="25dp"
android:layout toRightOf="@+id/textview" />
```

```
<Button
android:id="@+id/button"
android:layout width="wrap content"
android:layout height="wrap content"
android:layout alignParentBottom="true"
android:layout marginEnd="13dp"
android:layout marginRight="13dp"
android:layout marginBottom="412dp"
android:layout toStartOf="@+id/textview"
android:layout toLeftOf="@+id/textview"
android:text="login" />
<Button
android:id="@+id/button2"
android:layout width="wrap content"
android:layout height="wrap content"
android:layout alignParentBottom="true"
android:layout marginStart="-20dp"
android:layout marginLeft="-20dp"
android:layout marginBottom="415dp"
android:layout toEndOf="@+id/textview"
android:layout toRightOf="@+id/textview"
android:text="Cancel" />
</RelativeLayout>
JAVA FILE
package com.example.lab 3;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    Button b1, b2;
    EditText ed1, ed2;
    @Override
```

```
protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
        b1=(Button) findViewById(R.id.button);
        b2=(Button)findViewById(R.id.button2);
ed1=(EditText) findViewById(R.id.editTextTextPersonName);
        ed2=(EditText) findViewById(R.id.editTextTextPassword);
       b1.setOnClickListener(new View.OnClickListener() {
           @Override
           public void onClick(View v) {
               if (ed1.getText().toString().equals("shannon")
& &
               ed2.getText().toString().equals("ss")) {
                   Toast.makeText(getApplicationContext(),
"Login Successful!", Toast. LENGTH SHORT) . show();
                   Intent i = new Intent(MainActivity.this,
Homescreen.class);
                   startActivity(i);
               else {
                   Toast.makeText(getApplicationContext(),
"Invalid credentials!", Toast. LENGTH SHORT) . show();
      b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                ed1.getText().clear();
                ed2.getText().clear();
JAVA FILE
package com.example.lab 3;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
public class Homescreen extends AppCompatActivity {
Button b2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity homescreen);
        b2 = (Button) findViewById (R.id.logoutButton);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(getApplicationContext(), "Log
out successful!", Toast. LENGTH SHORT) .show();
                Intent i2 = new Intent(Homescreen.this,
MainActivity.class);
                startActivity(i2);
```

# 3. Create login application where you will have to validate Email ID (User Name). Till the username and password is not validated, login button should remain disabled.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
xmlns:android="http://schemas.android.com/apk/r
xmlns:app="http://schemas.android.com/apk/res-
xmlns:tools="http://schemas.android.com/tools"
 android:layout width="match parent"
 android:layout height="match parent"
 tools:context=".MainActivity">
 <EditText
 android:id="@+id/editTextTextPassword2"
 android: layout width="wrap content"
 android:layout height="wrap content"
 android:ems="10"
 android:inputType="textPassword"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.458"
app:layout constraintStart toEndOf="@+id/editTextTextPerso
nName2" app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.596"
 tools:ignore="TouchTargetSizeCheck" />
 <TextView
 android:id="@+id/textView2"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:text="Goa University - BCA"
```

```
android:textColor="#2196F3"
app:layout constraintBottom toBottomOf="paren
    app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.565"
 app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent" />
 <EditText
 android:id="@+id/editTextTextPersonName"
 android:layout width="106dp"
 android:layout height="39dp"
 android:layout marginStart="36dp"
 android:ems="10"
 android:inputType="textPersonName"
 android:text="Name"
 android:textSize="14sp"
app:layout constraintBottom toBottomOf="paren
app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.599" />
 <EditText
 android:id="@+id/editTextTextPersonName2"
 android:layout width="113dp"
 android:layout height="45dp"
 android:layout marginStart="28dp"
 android:ems="10"
 android:inputType="textPersonName"
 android:text="password"
 android:textSize="14sp"
app:layout constraintBottom toBottomOf="paren
```

```
app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.734" />
<EditText
 android:id="@+id/editTextTextPassword"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:ems="10"
 android:inputType="textPassword"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.42"
app:layout constraintStart toEndOf="@+id/editTextTextPerso
nName2" app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.734"
 tools:ignore="TouchTargetSizeCheck" />
 <Button
android:id="@+id/button"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:text="login"
app:layout constraintBottom toBottomOf="paren
   app:layout constraintEnd toEndOf="parent"
 app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.884" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
JAVA FILE
package com.example.login;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.text.Editable;
import android.text.TextWatcher;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
Button b1;
EditText t1;
EditText t2;
Button c;
 @Override
protected void onCreate (Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
 setContentView(R.layout.activity main);
b1 = (Button) findViewById(R.id.button);
 t1 = (EditText)
findViewById(R.id.editTextTextPassword2);
t2 = (EditText)
findViewById(R.id.editTextTextPassword);
c = (Button) findViewById(R.id.clear);
 t1.addTextChangedListener(Textchange);
 t2.addTextChangedListener(Textchange);
 check();
```

```
b1.setOnClickListener(new
View.OnClickListener() { @Override
 public void onClick(View v) {
 if (t1.getText().toString().equals("shannon") &&
t2.getText().toString().equals("ss")){
 Toast.makeText(getApplicationContext(), "Login")
Successful! ", Toast. LENGTH SHORT) . show();
 Intent i = new Intent (MainActivity.this,
homescreen.class);
 startActivity(i);
 } else {
 Toast.makeText(getApplicationContext(), "login failed! ",
Toast.LENGTH SHORT) .show();
 c.setOnClickListener(new
View.OnClickListener() { @Override
 public void onClick(View v) {
 t1.getText().clear();
 t2.getText().clear();
public void check() {
 if (t1.getText().toString().equals("shannon") &&
 t2.getText().toString().equals("ss")) {
b1.setEnabled(true);
 b1.setEnabled(false);
 private TextWatcher Textchange=new TextWatcher() {
```

```
@Override
  public void beforeTextChanged(CharSequence s, int start, int
count, int after) {
  }
  @Override
  public void onTextChanged(CharSequence s, int start, int
before, int count) {
   }
  @Override
  public void afterTextChanged(Editable s) {
   check();
  }
  };
}
```

# 4. Create and Login application as above. On successful login, open browser with any URL.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
xmlns:android="http://schemas.android.com/apk/r
xmlns:app="http://schemas.android.com/apk/res-
xmlns:tools="http://schemas.android.com/tools"
 android:layout width="match parent"
 android:layout height="match parent"
 tools:context=".MainActivity">
 <EditText
 android:id="@+id/editTextTextPassword2"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:ems="10"
 android:inputType="textPassword"
app:layout constraintBottom toBottomOf="paren"
t" app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.458"
app:layout constraintStart toEndOf="@+id/editTextTextPerso
nName2" app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.596"
 tools:ignore="TouchTargetSizeCheck" />
 <TextView
 android:id="@+id/textView2"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:text="Goa University - BCA"
```

```
android:textColor="#2196F3"
app:layout constraintBottom toBottomOf="paren
    app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.565"
 app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent" />
 <EditText
 android:id="@+id/editTextTextPersonName"
 android:layout width="106dp"
 android:layout height="39dp"
 android:layout marginStart="36dp"
 android:ems="10"
 android:inputType="textPersonName"
 android:text="Name"
 android:textSize="14sp"
app:layout constraintBottom toBottomOf="paren
app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.599" />
 <EditText
 android:id="@+id/editTextTextPersonName2"
 android:layout width="113dp"
 android:layout height="45dp"
 android:layout marginStart="28dp"
 android:ems="10"
 android:inputType="textPersonName"
 android:text="password"
 android:textSize="14sp"
app:layout constraintBottom toBottomOf="paren
```

```
app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.734" />
<EditText
 android:id="@+id/editTextTextPassword"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:ems="10"
 android:inputType="textPassword"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.42"
app:layout constraintStart toEndOf="@+id/editTextTextPerso
nName2" app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.734"
 tools:ignore="TouchTargetSizeCheck" />
 <Button
android:id="@+id/button"
 android:layout width="wrap content"
 android:layout height="wrap content"
 android:text="login"
app:layout constraintBottom toBottomOf="paren
   app:layout constraintEnd toEndOf="parent"
 app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.884" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

# JAVA FILE package com.example.login; import androidx.appcompat.app.AppCompatActivity; import android.content.Intent; import android.net.Uri; import android.os.Bundle; import android.text.Editable; import android.text.TextWatcher; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.Toast; public class MainActivity extends AppCompatActivity { Button b1; EditText t1; EditText t2; Button c; @Override protected void onCreate (Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity main); b1 = (Button) findViewById(R.id.button); t1 = (EditText)findViewById(R.id.editTextTextPassword2); t2 = (EditText)findViewById(R.id.editTextTextPassword); c = (Button) findViewById(R.id.clear); t1.addTextChangedListener(Textchange); t2.addTextChangedListener(Textchange);

```
check();
b1.setOnClickListener(new
View.OnClickListener() { @Override
public void onClick(View v) {
 if (t1.getText().toString().equals("shannon") &&
t2.getText().toString().equals("ss")){
 Toast.makeText(getApplicationContext(), "Login")
 Intent i= new Intent(Intent.ACTION VIEW,
Uri.parse("http://10.0.0.20:8090/"));
 startActivity(i);
 } else {
 Toast.makeText(getApplicationContext(), "Login failed! ",
Toast.LENGTH SHORT).show();
 c.setOnClickListener(new View.OnClickListener() {
 @Override
public void onClick(View v) {
 t1.getText().clear();
 t2.getText().clear();
 public void check() {
 if (t1.getText().toString().equals("shannon") &&
 t2.getText().toString().equals("ss")) {
b1.setEnabled(true);
b1.setEnabled(false);
```

```
private TextWatcher Textchange=new TextWatcher() {
  @Override
  public void beforeTextChanged(CharSequence s, int start, int count, int after) {
  }
  @Override
  public void onTextChanged(CharSequence s, int start, int before, int count) {
  }
  @Override
  public void afterTextChanged(Editable s) {
    check();
  }
  };
}
```

# 5. Creating an Application that displays message based on the screen orientation.

```
MAINACTIVITY.XML FILE
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLay</pre>
out
xmlns:android="http://schemas.android.com/apk/r
xmlns:app="http://schemas.android.com/apk/res-
xmlns:tools="http://schemas.android.com/tools"
android:layout width="match parent"
 android:layout height="match parent"
 tools:context=".MainActivity">
 <Button
 android:id="@+id/button2"
 android:layout width="wrap content"
 android:layout height="wrap content"
android:text="click to change orientation"
app:layout constraintBottom toBottomOf="paren
   app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.394"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

### ACTIVITY2.XML FILE

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLay
out
xmlns:android="http://schemas.android.com/apk/r
es/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=".MainActivity2">
```

```
<TextView
 android:id="@+id/textView"
 android:layout width="272dp"
 android:layout height="83dp"
 android:text="orientation has been changed"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent" />
 <Button
 android:id="@+id/button3"
 android:layout width="wrap content"
 android:layout height="wrap content"
android:text="go back to portrait
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.499"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.765" />
</androidx.constraintlayout.widget.ConstraintLayout>
MAINACTIVITY. JAVA FILE
package com.example.orientation;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
 Button c;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
```

```
super.onCreate(savedInstanceState);
 setContentView(R.layout.activity main);
 c=(Button) findViewById(R.id.button2);
 c.setOnClickListener(new
View.OnClickListener() {  @Override
public void onClick(View view) {
 Intent i=new Intent(MainActivity.this, MainActivity2.class);
startActivity(i);
MAINACTIVITY2.JAVA FILE
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.pm.ActivityInfo;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity2 extends AppCompatActivity {
Button c1;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity main2);
 c1=(Button) findViewById(R.id.button3) ;
setRequestedOrientation(ActivityInfo. SCREEN ORIENTATION LAND
SCAPE); c1.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
```

```
Intent i1=new
Intent (MainActivity2.this, MainActivity.
class); startActivity(i1);
}
});
}
```

# 6. Create an application that will change color of the screen, based on selected options from the menu.

```
<?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=".MainActivity"
 tools:ignore="ExtraText">
 <Button
 android:id="@+id/button2"
 android:layout width="276dp"
 android:layout height="46dp"
 android:text="click to change to green"
 app:layout constraintBottom toBottomOf="parent"
 app:layout constraintEnd toEndOf="parent"
 app:layout constraintHorizontal bias="0.1"
 app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent"
 app:layout constraintVertical bias="0.248"
 tools:ignore="TouchTargetSizeCheck" />
 <Button
 android:id="@+id/button1"
 android:layout width="274dp"
 android:layout height="49dp"
 android:text="click to change to Red"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.088"
```

```
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.147" />
 <Button
 android:id="@+id/button3"
 android:layout width="277dp"
 android:layout height="44dp"
 android:text="click to change to blue"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.119"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.346"
tools:ignore="TouchTargetSizeCheck" />
 <LinearLayout
 android:id="@+id/layout1"
 android:layout width="405dp"
 android:layout height="720dp"
 android:layout marginStart="4dp"
 android:layout marginEnd="3dp"
 android:orientation="vertical"
app:layout constraintBottom toBottomOf="paren
t" app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="1.0"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="1.0" />
 <But.t.on
 android:id="@+id/button4"
 android:layout width="288dp"
 android:layout height="45dp"
 android:text="clear background colour"
app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintHorizontal bias="0.088"
```

```
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.467"
tools:ignore="TouchTargetSizeCheck" />
</androidx.constraintlayout.widget.ConstraintLayout>
JAVA FILE
package com.example.changebgcolor;
import
androidx.appcompat.app.AppCompatActivity
; import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.LinearLayout;
public class MainActivity extends
AppCompatActivity { Button b1;
 Button b2;
 Button b3;
 Button b4;
 LinearLayout 1;
 @Override
 protected void onCreate (Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
 setContentView(R.layout.activity main);
                findViewById(R.id.button1);
b1=(Button)
                findViewById(R.id.button2);
b2=(Button)
b3=(Button)
               findViewById(R.id.button3);
b4=(Button)
               findViewById(R.id.button4);
l=(LinearLayout) findViewById(R.id.layout1)
 b1.setOnClickListener(new
```

```
View.OnClickListener() { @Override
public void onClick(View view) {
1.setBackgroundColor(Color.RED); }
b2.setOnClickListener(new
View.OnClickListener() { @Override
public void onClick(View view) {
1.setBackgroundColor(Color.GREEN); }
b3.setOnClickListener(new
View.OnClickListener() { @Override
public void onClick(View view) {
1.setBackgroundColor(Color.BLUE); }
b4.setOnClickListener(new
View.OnClickListener() { @Override
public void onClick(View view) {
1.setBackgroundColor(Color.WHITE); }
```

# 7. Create an application that will display toast (Message) on specific interval of Time.

```
<?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=".MainActivity">
 <Chronometer
 android:id="@+id/cnm"
 android: layout width="wrap content"
 android: layout height="wrap content"
 android:layout centerHorizontal="true"
 android:layout centerVertical="true"
 android:format="Timer : %s"/>
 <TextView
 android:id="@+id/textView"
 android:layout width="206dp"
android:layout height="56dp"
 android:text="TextView"
 app:layout constraintBottom toBottomOf="parent"
 app:layout constraintEnd toEndOf="parent"
 app:layout constraintStart toStartOf="parent"
 app:layout constraintTop toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
JAVA FILE
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.Chronometer;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
 Chronometer c;
 int i=0;
 int duration=10;
 TextView t1;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity main);
 c=(Chronometer)findViewById(R.id.cnm);
 t1=(TextView) findViewById(R.id.textView);
 c.start();
 c.setOnChronometerTickListener(new
Chronometer.OnChronometerTickListener() {
 @Override
public void onChronometerTick(Chronometer arg0) {
 t1.setText("Message will be displayed after " + (duration -
Toast.makeText(getApplicationContext(), "Message
"+(i/10), Toast. LENGTH LONG). show();
```

```
duration=duration+10;
}
}
});
}
```

8. Create an UI such that, one screen has a list of all the types of Books. On selecting of any book name, next screen should show Book details like: Book name, Author Name, Publication name, images (using gallery) if available, show different colors in which it is available.

```
ACTIVITY MAIN.XML FILE
<?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=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout width="244dp"
        android:layout height="44dp"
        android:text="BOOKSTORE"
        android:textAlignment="center"
        android:textSize="30sp"
        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="0.093" />
    <Button
        android:id="@+id/actionAdvBtn"
        android:layout width="wrap content"
        android:lavout height="wrap content"
        android:text="ACTION AND ADVENTURE"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView"
        app:layout constraintVertical bias="0.153" />
    <Button
        android:id="@+id/classicsBtn"
        android:layout width="304dp"
```

```
android:layout height="56dp"
        android:layout marginTop="56dp"
        android:text="CLASSICS"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintHorizontal bias="0.523"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/actionAdvBtn"
        app:layout constraintVertical bias="0.0" />
    <Button
        android:id="@+id/comicBtn"
        android:layout width="310dp"
        android:layout height="56dp"
        android:text="COMICS"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.456"
        app:layout_constraintStart_toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/classicsBtn"
        app:layout constraintVertical bias="0.132" />
    <Button
        android:id="@+id/horrorBtn"
        android:layout width="294dp"
        android:layout_height="52dp"
        android:text="HORROR"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.497"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/comicBtn"
        app:layout constraintVertical bias="0.21" />
</androidx.constraintlayout.widget.ConstraintLayout>
ACTIVITY ACTION ADVENTURE.XML FILE
<?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=".actionAdventure">
    <TextView
        android:id="@+id/colorPrint"
        android:layout width="363dp"
        android:layout height="67dp"
        android:text="PRINT COLOR: Available in Black and White as
well as Color Print"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/pubName2"
        app:layout constraintVertical bias="0.078" />
    <TextView
        android:id="@+id/pubName2"
        android:layout width="365dp"
        android:layout height="118dp"
        android:text="PUBLICATION NAME: Bloomsbury in the United
Kingdom and Scholastic Press in the United States"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/authorName"
        app:layout constraintVertical bias="0.17" />
    <TextView
        android:id="@+id/textView2"
        android:layout width="244dp"
        android:layout height="44dp"
        android:text="BOOKSTORE"
        android:textAlignment="center"
        android:textSize="30sp"
        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="0.057" />
    <TextView
        android:id="@+id/pubName"
        android:layout width="365dp"
        android:layout height="118dp"
        android:text="PUBLICATION NAME: Bloomsbury in the United
Kingdom and Scholastic Press in the United States"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/authorName"
        app:layout constraintVertical bias="0.17" />
    <TextView
        android:id="@+id/authorName"
        android:layout width="215dp"
        android:layout height="61dp"
        android:text="AUTHOR NAME: J. K. Rowling"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.897"
        app:layout constraintStart toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/bookName"
        app:layout_constraintVertical bias="0.018" />
    <TextView
        android:id="@+id/bookName"
        android:layout width="217dp"
        android:layout height="90dp"
        android:text="BOOK NAME: Harry Potter and the Chamber of
Secrets"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.896"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView2"
```

```
app:layout_constraintVertical_bias="0.089" />
    <ImageView</pre>
        android:id="@+id/imageView1"
        android:layout width="139dp"
        android:layout height="265dp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintHorizontal bias="0.084"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent"
        app:layout constraintVertical bias="0.19"
        app:srcCompat="@drawable/chamber of secrets us childrens ed
ition 2013" />
    < Button
        android:id="@+id/backBtn"
        android:layout width="143dp"
        android:layout height="48dp"
        android:text="BACk"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/pubName" />
</androidx.constraintlayout.widget.ConstraintLayout>
ACTIVITY CLASSICS.XML FILE
<?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=".classics">
    <TextView
        android:id="@+id/bookName2"
        android:layout width="178dp"
        android:layout height="92dp"
        android:layout marginBottom="460dp"
```

```
android:text="BOOK NAME: To Kill a Mockingbird"
   android:textAlignment="center"
   android:textSize="20sp"
   app:layout constraintBottom toBottomOf="parent"
   app:layout constraintEnd toEndOf="parent"
   app:layout constraintHorizontal bias="0.896"
   app:layout constraintStart toStartOf="parent"
   app:layout constraintTop toBottomOf="@+id/textView2"
   app:layout constraintVertical bias="0.092" />
<TextView
   android:id="@+id/authorName2"
   android:layout width="191dp"
   android:layout height="56dp"
   android:layout marginBottom="404dp"
   android:text="AUTHOR NAME: Harper Lee"
   android:textAlignment="center"
   android:textSize="20sp"
   app:layout constraintBottom toBottomOf="parent"
   app:layout_constraintEnd_toEndOf="parent"
   app:layout constraintHorizontal bias="0.927"
   app:layout constraintStart toStartOf="parent"
   app:layout constraintTop toBottomOf="@+id/bookName"
   app:layout constraintVertical bias="0.018" />
<TextView
   android:id="@+id/pubName2"
   android:layout width="390dp"
   android:layout_height="40dp"
   android:layout marginBottom="260dp"
   android:text="PUBLICATION NAME: Heinemann in 1960"
   android:textAlignment="center"
   android:textSize="20sp"
   app:layout constraintBottom toBottomOf="parent"
   app:layout constraintEnd toEndOf="parent"
   app:layout constraintHorizontal bias="0.761"
   app:layout_constraintStart_toStartOf="parent"
   app:layout constraintTop toBottomOf="@+id/authorName"
   app:layout constraintVertical bias="0.17" />
<TextView
   android:id="@+id/colorPrint2"
   android:layout width="363dp"
   android:layout height="67dp"
```

```
android:text="PRINT COLOR: Available in Black and White as
well as Color Print"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout_constraintEnd toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/pubName2"
        app:layout constraintVertical bias="0.122" />
    <TextView
        android:id="@+id/textView3"
        android:layout width="244dp"
        android:layout height="44dp"
        android:text="BOOKSTORE"
        android:textAlignment="center"
        android:textSize="30sp"
        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="0.057" />
    <Button
        android:id="@+id/backBtn2"
        android:layout width="143dp"
        android:layout height="48dp"
        android:text="BACk"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintHorizontal bias="0.537"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView3"
        app:layout_constraintVertical_bias="0.828" />
    <ImageView</pre>
        android:id="@+id/imageView2"
        android:layout_width="170dp"
        android:layout height="315dp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.099"
```

```
app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent"
        app:layout constraintVertical bias="0.199"
        app:srcCompat="@drawable/book cover to kill a mockingbird m
any 1961" />
</androidx.constraintlayout.widget.ConstraintLayout>
ACTIVITY COMICS.XML FILE
<?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=".comics">
    < Button
        android:id="@+id/backBtn3"
        android:layout width="143dp"
        android:layout height="48dp"
        android:layout marginBottom="108dp"
        android:text="BACk"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView3"
        app:layout constraintVertical bias="0.806" />
    <TextView
        android:id="@+id/colorPrint3"
        android:layout width="363dp"
        android:layout height="67dp"
        android:layout marginBottom="180dp"
        android:text="PRINT COLOR: Available in Black and White as
well as Color Print"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/pubName2"
```

```
app:layout_constraintVertical_bias="0.078" />
    <TextView
        android:id="@+id/pubName3"
        android:layout width="388dp"
        android:layout_height="55dp"
        android:layout_marginBottom="260dp"
        android:text="PUBLICATION NAME: Marvel Comics' Amazing
Fantasy, no. 15 (1962)"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.478"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/authorName"
        app:layout constraintVertical bias="0.17" />
    <TextView
        android:id="@+id/authorName3"
        android:layout width="191dp"
        android:layout height="56dp"
        android:layout marginBottom="404dp"
        android:text="AUTHOR NAME: Tom DeFalco"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.927"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/bookName"
        app:layout constraintVertical bias="0.018" />
    <TextView
        android:id="@+id/bookName3"
        android:layout width="178dp"
        android:layout height="92dp"
        android:layout marginBottom="476dp"
        android:text="BOOK NAME: Spider-Man: Birth of Venom"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.896"
```

```
app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView2"
        app:layout constraintVertical bias="0.092" />
    <TextView
        android:id="@+id/textView4"
        android:layout width="244dp"
        android:layout height="44dp"
        android:text="BOOKSTORE"
        android:textAlignment="center"
        android:textSize="30sp"
        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="0.057" />
    <ImageView</pre>
        android:id="@+id/imageView3"
        android:layout width="179dp"
        android:layout height="293dp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.103"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView4"
        app:layout constraintVertical bias="0.067"
        app:srcCompat="@drawable/spidermanbirthofvenom" />
</androidx.constraintlayout.widget.ConstraintLayout>
ACTIVITY HORROR.XML FILE
<?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=".horror">
    < Button
```

```
android:id="@+id/backBtn4"
        android:layout width="143dp"
        android:layout height="48dp"
        android:layout marginBottom="108dp"
        android:text="BACk"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/textView3"
        app:layout constraintVertical bias="0.806" />
    <TextView
        android:id="@+id/colorPrint4"
        android:layout width="363dp"
        android:layout height="67dp"
        android:layout marginBottom="200dp"
        android:text="PRINT COLOR: Available in Black and White as
well as Color Print"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/pubName2"
        app:layout constraintVertical bias="0.078" />
    <TextView
        android:id="@+id/pubName4"
        android:layout width="375dp"
        android:layout_height="38dp"
        android:layout marginBottom="280dp"
        android:text="PUBLICATION NAME: St. Martin's Press"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintHorizontal bias="0.478"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toBottomOf="@+id/authorName"
        app:layout constraintVertical bias="0.17" />
    <TextView
        android:id="@+id/authorName4"
```

```
android:layout width="191dp"
    android:layout height="56dp"
    android:layout marginBottom="404dp"
    android:text="AUTHOR NAME: Thomas Harris"
    android:textAlignment="center"
    android:textSize="20sp"
    app:layout constraintBottom toBottomOf="parent"
   app:layout constraintEnd toEndOf="parent"
    app:layout constraintHorizontal bias="0.927"
    app:layout constraintStart toStartOf="parent"
   app:layout constraintTop toBottomOf="@+id/bookName"
   app:layout_constraintVertical bias="0.018" />
<TextView
    android:id="@+id/bookName4"
   android:layout width="178dp"
    android:layout height="92dp"
   android:layout marginBottom="476dp"
    android:text="BOOK NAME: The Silence of the Lambs"
    android:textAlignment="center"
    android:textSize="20sp"
    app:layout constraintBottom toBottomOf="parent"
    app:layout constraintEnd toEndOf="parent"
   app:layout_constraintHorizontal bias="0.896"
    app:layout constraintStart toStartOf="parent"
    app:layout constraintTop toBottomOf="@+id/textView2"
   app:layout constraintVertical bias="0.092" />
<TextView
    android:id="@+id/textView5"
    android:layout width="244dp"
    android:layout height="44dp"
    android:text="BOOKSTORE"
    android:textAlignment="center"
    android:textSize="30sp"
    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="0.057" />
<ImageView</pre>
   android:id="@+id/imageView4"
```

```
android:layout width="172dp"
        android:layout height="296dp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.1"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent"
        app:layout constraintVertical bias="0.218"
        app:srcCompat="@drawable/silenceofthelambs" />
</androidx.constraintlayout.widget.ConstraintLayout>
ACTIVITYACTIVITY.JAVA FILE
package com.example.madlabisa 2;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    Button b1,b2,b3,b4;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=(Button)findViewById(R.id.actionAdvBtn);
        b2=(Button)findViewById(R.id.classicsBtn);
        b3=(Button)findViewById(R.id.comicBtn);
        b4=(Button)findViewById(R.id.horrorBtn);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(),
selected Action and Adventure!",Toast.LENGTH_SHORT).show();
```

```
Intent i = new Intent(MainActivity.this,
actionAdventure.class);
                startActivity(i);
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(), "You
selected Classics!",Toast.LENGTH SHORT).show();
                Intent i = new Intent(MainActivity.this,
classics.class);
                startActivity(i);
        });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(),
selected Comics!",Toast.LENGTH_SHORT).show();
                Intent i = new Intent(MainActivity.this,
comics.class);
                startActivity(i);
       }):
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(), "You
selected Horror!",Toast.LENGTH SHORT).show();
                Intent i = new Intent(MainActivity.this,
horror.class);
                startActivity(i);
            }
```

```
});
ACTIONADVENTURE.JAVA FILE
package com.example.madlabisa 2;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class actionAdventure extends AppCompatActivity {
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity action adventure);
        b1=(Button)findViewById(R.id.backBtn);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new Intent(actionAdventure.this,
MainActivity.class);
                startActivity(i);
       });
}
CLASSICS.JAVA FILE
package com.example.madlabisa 2;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class classics extends AppCompatActivity {
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity classics);
        b1=(Button)findViewById(R.id.backBtn2);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new Intent(classics.this,
MainActivity.class);
                startActivity(i);
        });
COMICS.JAVA FILE
package com.example.madlabisa 2;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class comics extends AppCompatActivity {
    Button b1:
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity comics);
```

```
b1=(Button)findViewById(R.id.backBtn3);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new Intent(comics.this,
MainActivity.class);
                startActivity(i);
            }
        });
   }
}
HORROR.JAVA FILE
package com.example.madlabisa_2;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class horror extends AppCompatActivity {
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity horror);
        b1=(Button)findViewById(R.id.backBtn4);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new Intent(horror.this,
MainActivity.class);
                startActivity(i);
        });
```

}	
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## 9. Using content providers and permissions, Read phonebook contacts using content providers and display in list.

```
ACTIVITY MAIN.XML FILE
<?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=".MainActivity">
    <ListView
        android:id="@+id/list"
        android:layout width="410dp"
        android:layout height="727dp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintHorizontal bias="0.0"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent"
        app:layout constraintVertical bias="0.4" />
</androidx.constraintlayout.widget.ConstraintLayout>
MAINACTIVITY.JAVA FILE
package com.example.phonebook;
import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.provider.FontsContractCompat;
import android.annotation.SuppressLint;
import android.content.ContentResolver;
import android.database.Cursor;
import android.os.Build;
import android.os.Bundle;
import android.provider.ContactsContract;
```

import android.widget.ArrayAdapter;

import android.widget.ListView;

import java.util.ArrayList;

import java.util.List;

```
public class MainActivity extends AppCompatActivity {
    ListView 11;
    @RequiresApi(api = Build.VERSION CODES.0)
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
        11=(ListView) findViewById(R.id.list);
        showContacts();
    private List<String> getContactNames() {
        List<String> contacts = new ArrayList<>();
        ContentResolver cr = getContentResolver();
        Cursor cursor =
cr.query(ContactsContract.Contacts.CONTENT URI, null, null,
        if(cursor.moveToFirst()){
                @SuppressLint("Range") String name =
cursor.getString(cursor.getColumnIndex(ContactsContract.Contac
ts.DISPLAY NAME));
                contacts.add(name);
            }while (cursor.moveToNext());
        cursor.close();
        return contacts;
    @RequiresApi(api = Build.VERSION CODES.0)
    private void showContacts() {
        List<String> contacts = getContactNames();
        ArrayAdapter<String> adapter = new
ArrayAdapter<String>(this,
                android.R.layout.simple list item 1, contacts);
        11.setAdapter(adapter);
```

## 10. Read Messages from the Mobile Devices and Display it on the screen.

```
XML FILE
```

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
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="wrap content"
        android:layout height="wrap content"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintLeft toLeftOf="parent"
        app:layout constraintRight toRightOf="parent"
        app:layout constraintTop toTopOf="parent"
        app:layout constraintVertical bias="0.412" />
    <Button
        android:id="@+id/showsms"
        android:layout width="wrap content"
        android:layout height="64dp"
        android:layout alignParentStart="true"
        android:layout alignParentTop="true"
        android:layout alignParentEnd="true"
        android:layout alignParentBottom="true"
        android:layout marginStart="53dp"
        android:layout marginTop="48dp"
        android:layout marginEnd="243dp"
        android:layout marginBottom="619dp"
        android:onClick="Read sms"
        android:text="show sms"
        app:layout constraintBottom toBottomOf="parent"
app:layout constraintEnd toEndOf="parent"
app:layout constraintStart toStartOf="parent"
app:layout constraintTop toTopOf="parent"
app:layout constraintVertical bias="0.19" />
    <TextView
        android:id="@+id/rm"
        android:layout width="134dp"
        android:layout height="wrap content"
        android:layout alignParentStart="true"
        android:layout alignParentTop="true"
```

```
android:layout alignParentEnd="true"
        android:layout alignParentBottom="true"
        android:layout marginStart="131dp"
        android:layout marginTop="253dp"
        android:layout marginEnd="146dp"
        android:layout marginBottom="428dp" />
</RelativeLavout>
JAVA FILE
package com.example.message;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import android.Manifest;
import android.content.pm.PackageManager;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {    private
TextView rr;
    @Override
   protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
        rr=findViewById(R.id.rm);
ActivityCompat.requestPermissions (MainActivity.this, new
                String[]{Manifest.permission.READ SMS},
PackageManager.PERMISSION GRANTED); }
    public void Read sms (View view) {
        Cursor
cursor=getContentResolver().query(Uri.parse("content://sms"),n
        cursor.moveToFirst();
        rr.setText(cursor.getString(12));
```