



MOBILE APPLICATION DEVELOPMENT

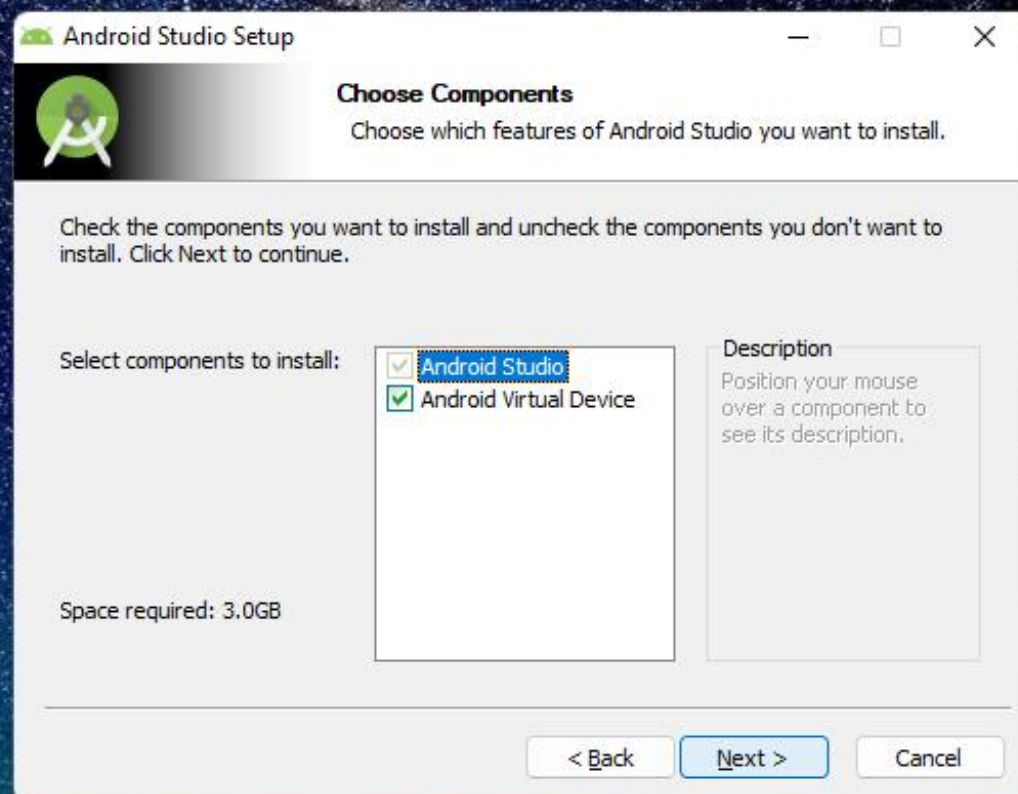


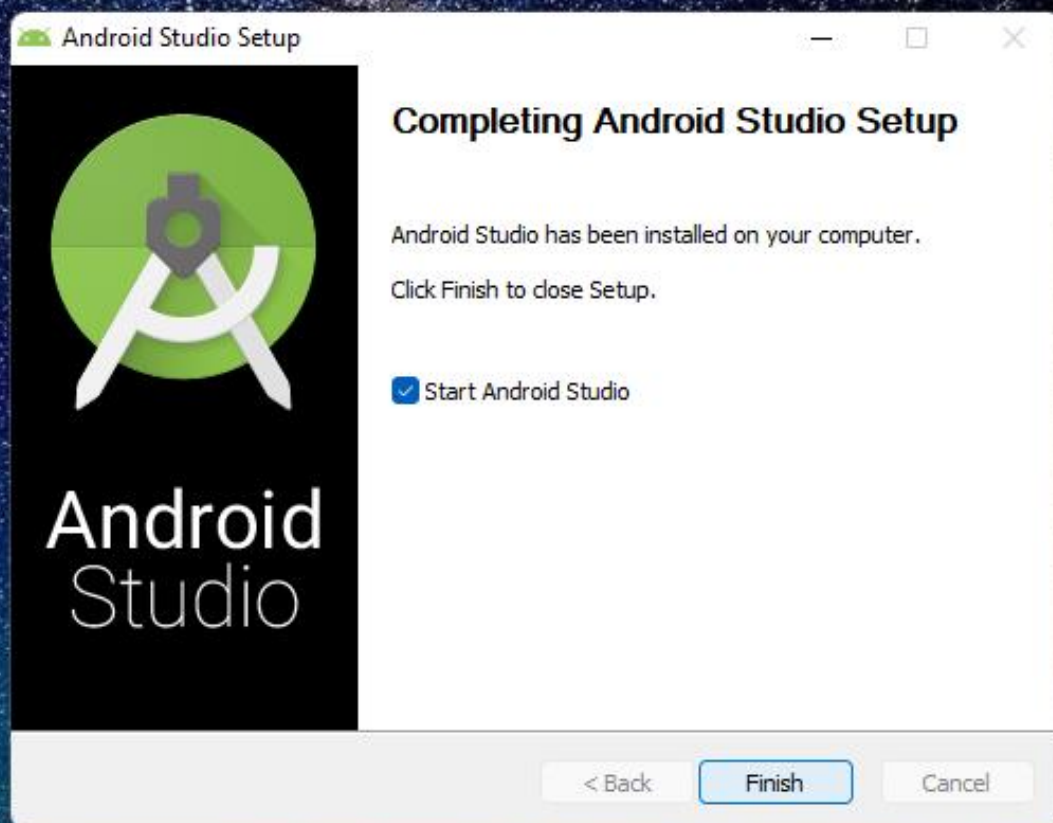
TYBCA | 20-133

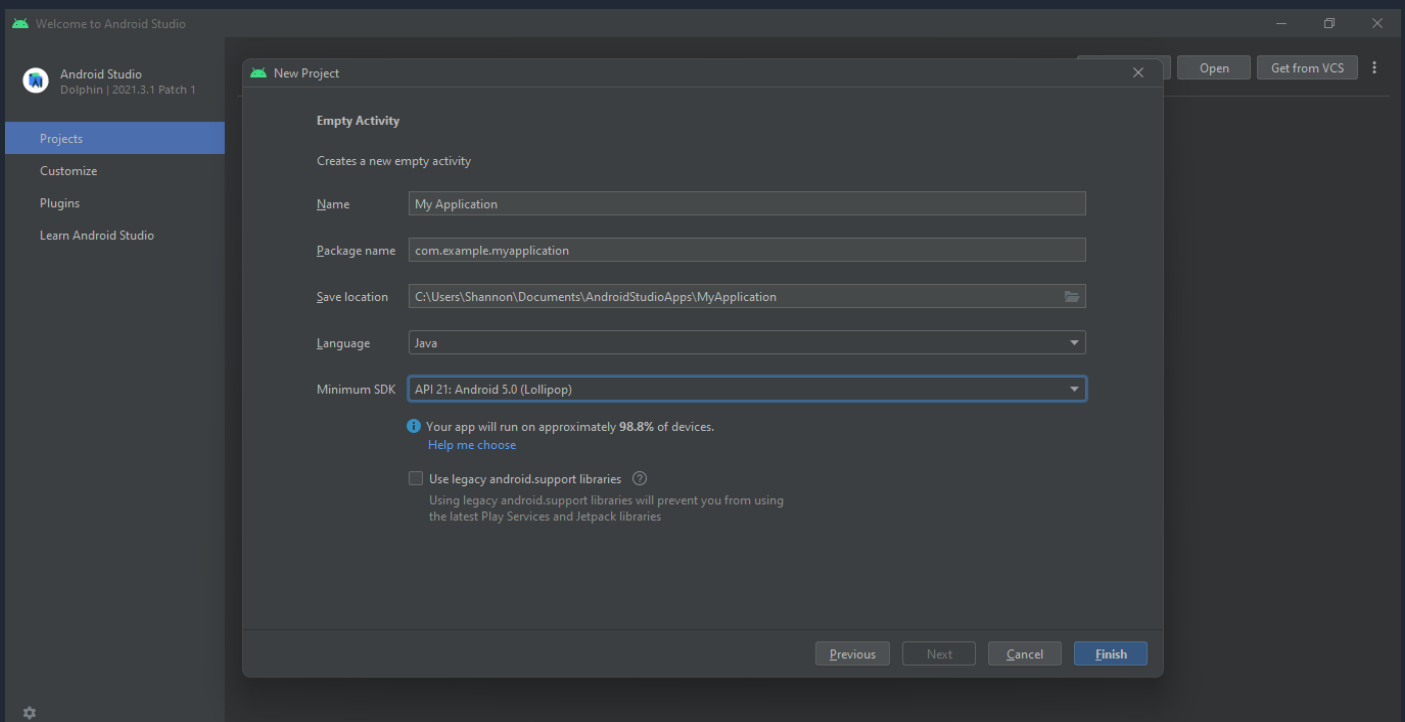
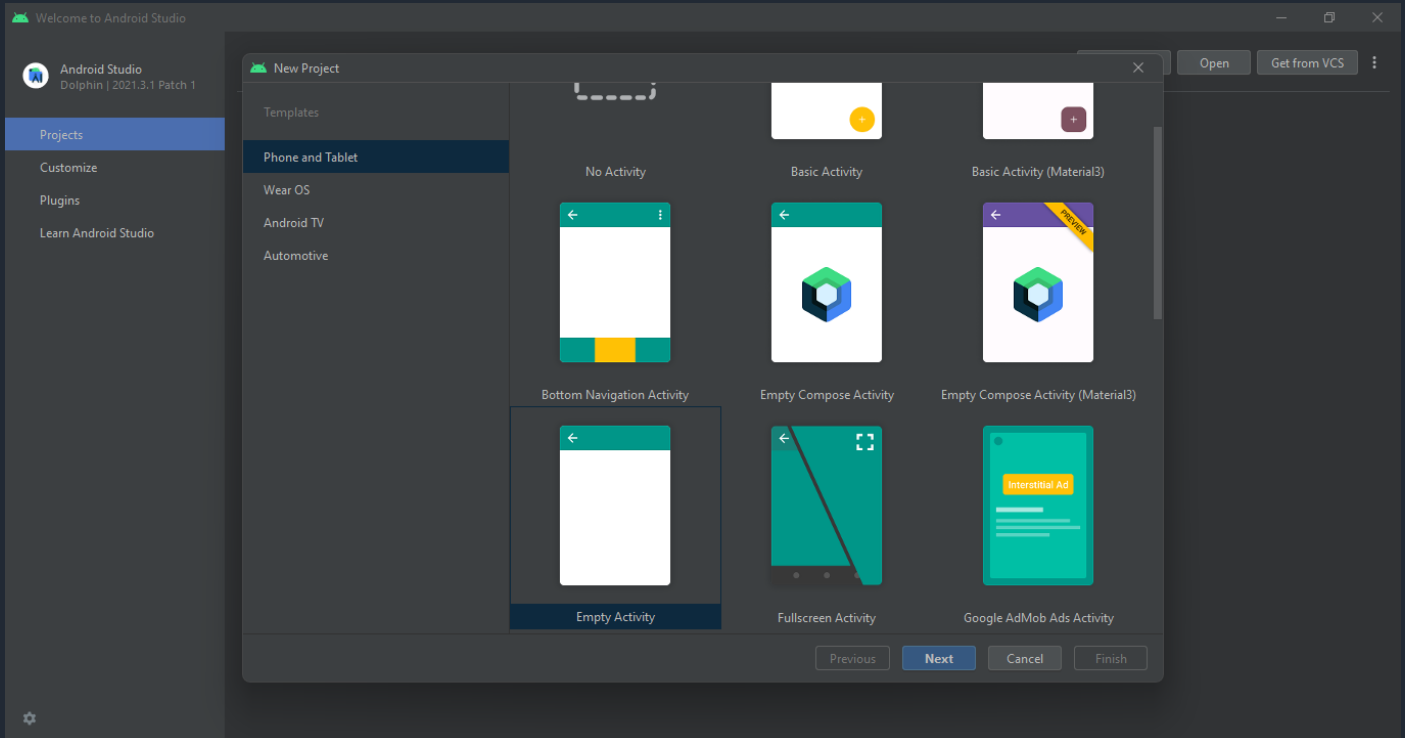
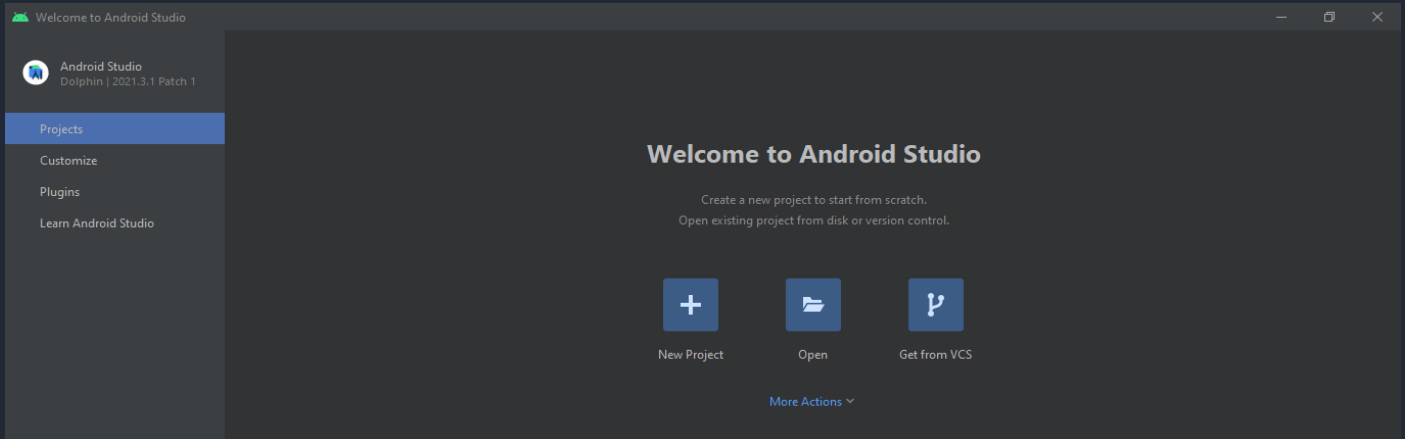
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Setting up Android Studio.







1. Create “First Android Application”, to display ‘Goa University –BCA’ in the middle of the screen in the Blue color with White background.

XML FILE

```
<?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="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 FILE

```
<?xml version = "1.0" encoding = "utf-8"?>
<RelativeLayoutxmlns: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" android:paddingLeft=
"@dimen/activity_horizontal_margin"
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

```


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 FILE

```
<?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">

    <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="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.458"

        app:layout_constraintStart_toEndOf="@+id/editTextTextPersonName2"
        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"
```


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

XML FILE

```
<?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">

    <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="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.458"

        app:layout_constraintStart_toEndOf="@+id/editTextTextPersonName2"
        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"
```


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.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">

    <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="parent"
        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.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=".MainActivity2">
```



```

<TextView
    android:id="@+id/textView"
    android:layout_width="272dp"
    android:layout_height="83dp"
    android:text="orientation has been changed"
    app:layout_constraintBottom_toBottomOf="parent"
    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
orientation"
    app:layout_constraintBottom_toBottomOf="parent"
    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) {

```


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

XML FILE

```
<?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"
    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" />
```

<Button

```
    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"
```


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

XML FILE

```
<?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">

    <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>
```


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
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:layout_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
    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
    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
    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

```
        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
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
```

```
    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
    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

```
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(), "You
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(), "You
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);
            }
        });
    }
}

```


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
    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;
```


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" />
</RelativeLayout>

```

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
            ull,null,null,null);
            cursor.moveToFirst();
            rr.setText(cursor.getString(12));
        }
    }
}

```