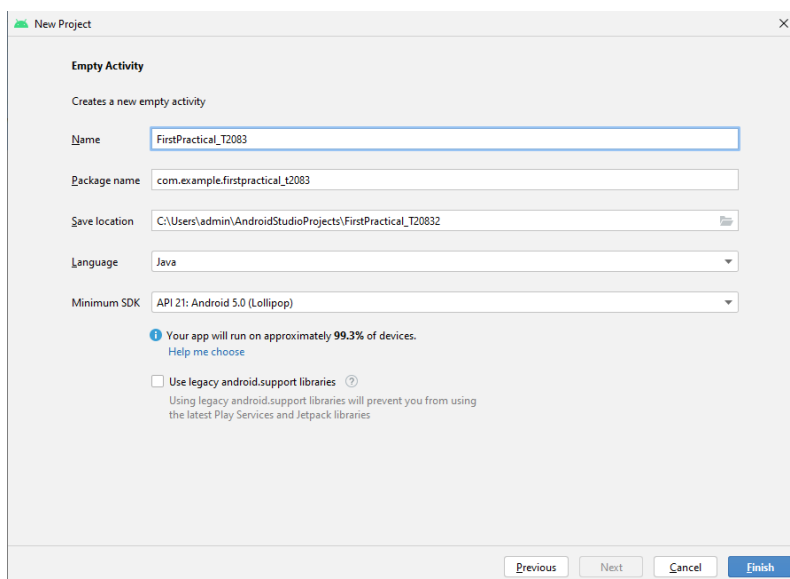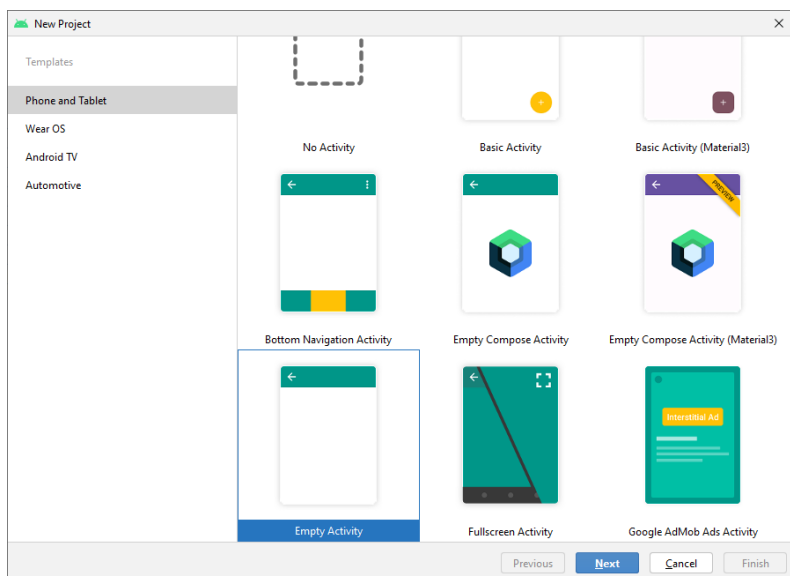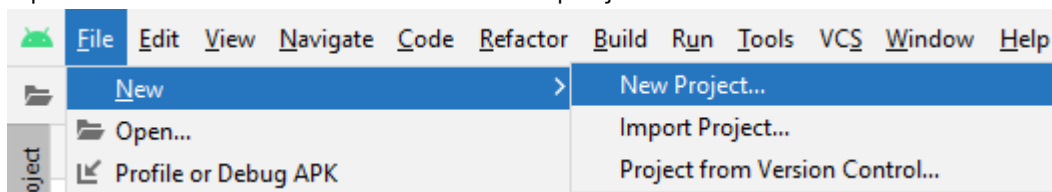## Practical 1

AIM: Introduction to Android, Introduction to Android Studio IDE, Application Fundamentals: Creating a Project, Android Components, Activities, Services, Content Providers, Broadcast Receivers, Interface overview, Creating Android Virtual device, USB debugging mode, Android Application Overview. Simple "Hello World" program.

Solution:

Open Android studio and Create new project.

MainActivity.java

```java
package com.example.firstpractical_t2083;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    // Swapnil Ramgire T.20.83
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</android.support.constraint.ConstraintLayout>
```
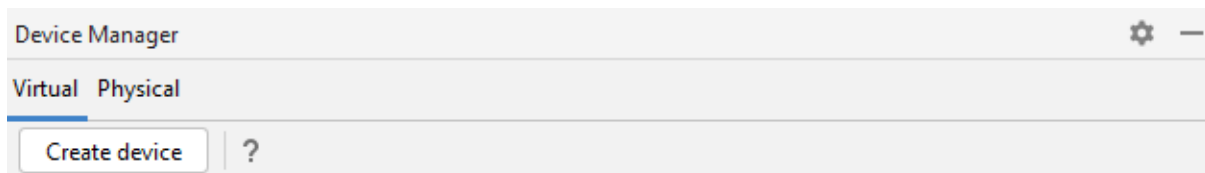
Starting emulator.

1. Click on device manager.

2. Click on Create device

Virtual Device Configuration

Select Hardware

Choose a device definition

Category	Name ▼	Play Store	Size	Resolution	Density
Phone	Resizable (Experimen...		6.0"	1080x2340	420dpi
Tablet	Pixel XL		5.5"	1440x2560	560dpi
Wear OS	Pixel 6 Pro		6.7"	1440x3120	560dpi
TV	Pixel 6		6.4"	1080x2400	420dpi
Automotive	Pixel 5		6.0"	1080x2340	440dpi
	Pixel 4a		5.8"	1080x2340	440dpi
	Pixel 4 XL		6.3"	1440x3040	560dpi

Pixel 6

1080px

6.4"   2400px

Size: large
Ratio: long
Density: 420dpi

New Hardware Profile   Import Hardware Profiles   Clone Device...

? Previous **Next** Cancel Finish

Virtual Device Configuration

System Image

Select a system image

Recommended   x86 Images   Other Images

Release Name	API Level ▼	ABI	Target
UpsideDownCake ⬇	*UpsideDownCake*	x86_64	*Android API UpsideDownCa...*
Tiramisu	33	x86_64	Android Tiramisu (Google A...
Sv2 ⬇	32	x86_64	*Android 12L (Google APIs)*
S ⬇	31	x86_64	*Android 12.0 (Google APIs)*
R ⬇	30	x86	*Android 11.0 (Google APIs)*
Q ⬇	29	x86	*Android 10.0 (Google APIs)*
Pie	28	x86	Android 9.0 (Google APIs)
Oreo ⬇	27	x86	*Android 8.1 (Google APIs)*
Oreo ⬇	26	x86	*Android 8.0 (Google APIs)*

Pie

API Level
28

Android
9.0

Google Inc.

System Image
x86

We recommend these images because they run the fastest and support Google APIs.
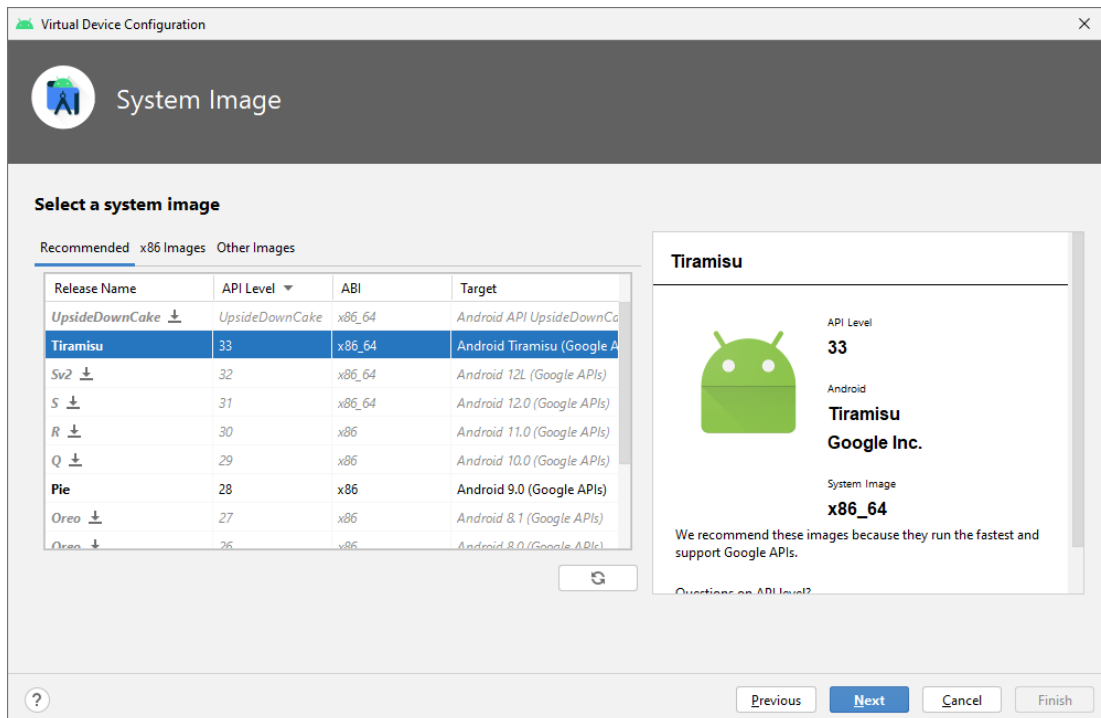
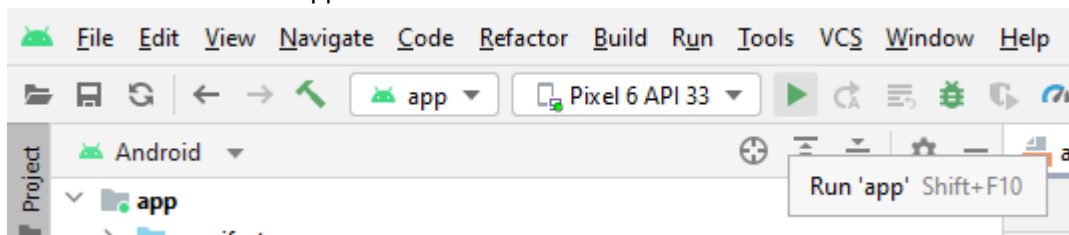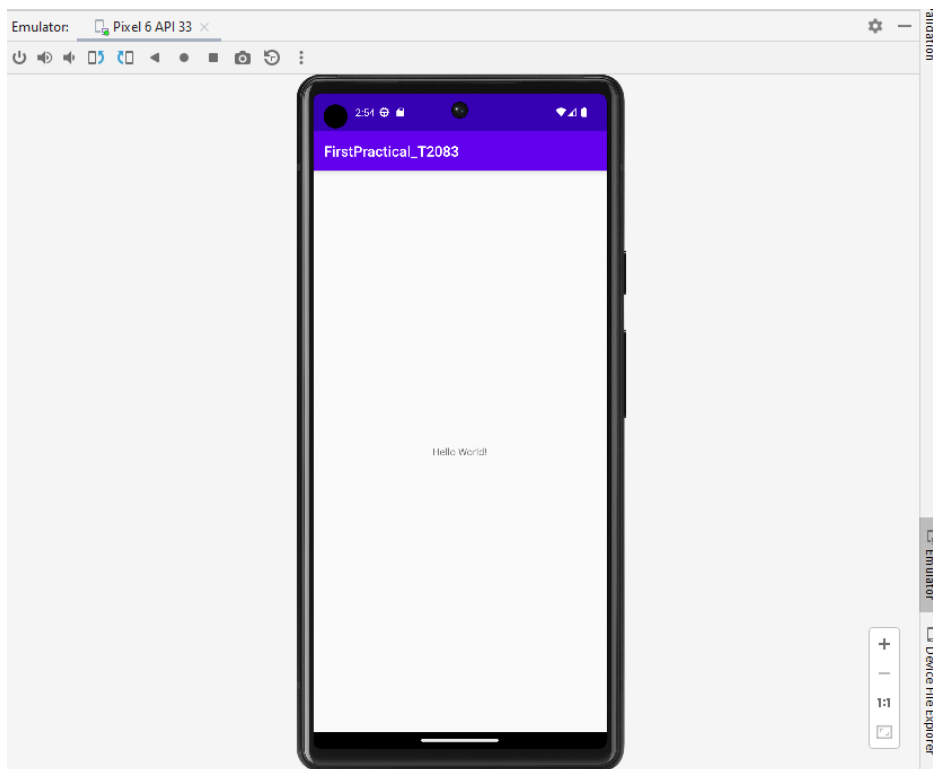Questions on API level?

? Previous **Next** Cancel Finish

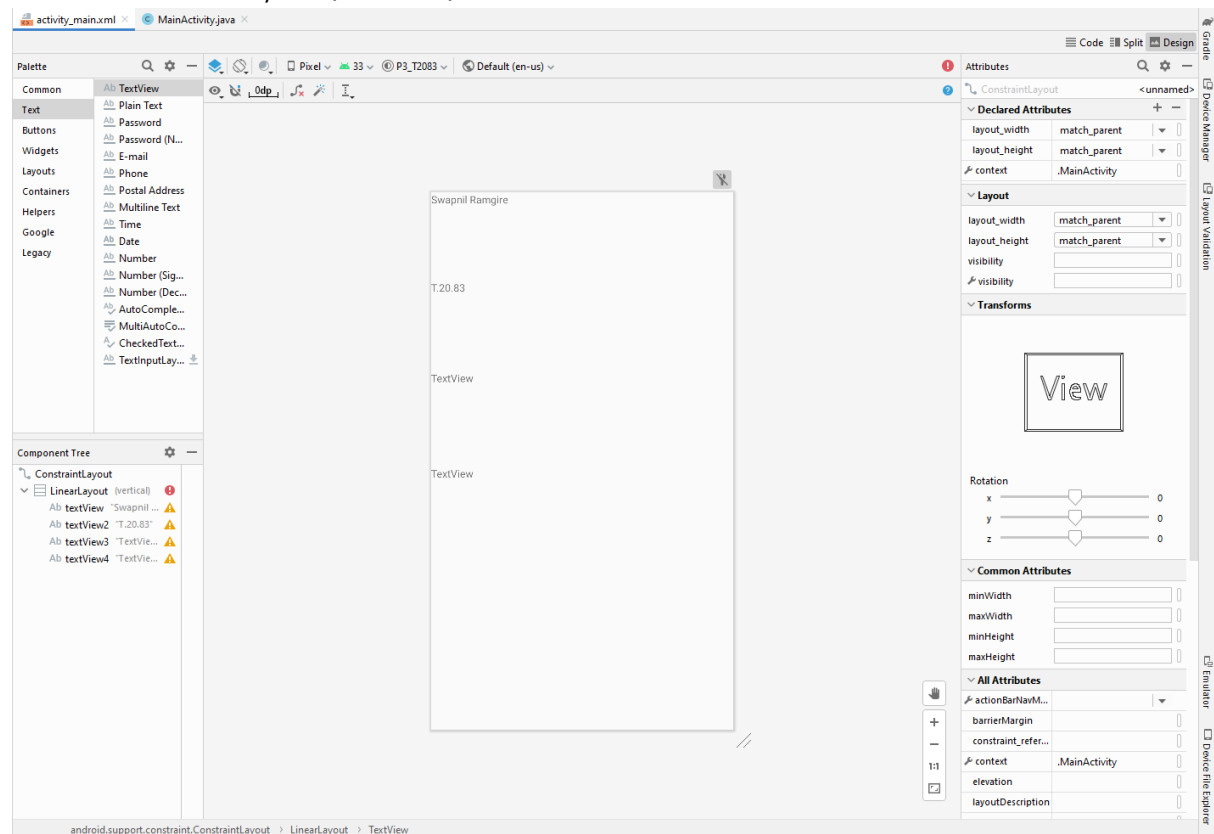Click finish then run the application.

Practical 2

AIM: Programming Resources

Android Resources: (Color, Theme, String, Drawable, Dimension, Image)

Solution:

Create one project with empty activity

Add one LinearLayout(Vertical) and 4-5 TextView

Adding Colors:

Go to, Project -> res -> values -> colours.xml

Add these lines.

```xml
<color name="blue">#0000FF</color>
<color name="green">#00FF00</color>
<color name="yellow">#FFFF00</color>
<color name="orange">#FF7F00</color>
```

Now Open activity_main.xml

Add:

```xml
android:background
```

Complete Code

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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"
```

SWAPNIL RAMGIRE T.20.83

```xml
    tools:context=".MainActivity">
<!--    Swapnil Ramgire T.20.83-->
    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="729dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="120dp"
            android:text="Swapnil Ramgire"
            android:background="@color/blue"/>

        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="123dp"
            android:text="T.20.83"
            android:background="@color/green" />

        <TextView
            android:id="@+id/textView3"
            android:layout_width="match_parent"
            android:layout_height="130dp"
            android:text="TextView"
            android:background="@color/yellow" />

        <TextView
            android:id="@+id/textView4"
            android:layout_width="match_parent"
            android:layout_height="131dp"
            android:text="TextView"
            android:background="@color/orange" />
    </LinearLayout>
</android.support.constraint.ConstraintLayout>
```
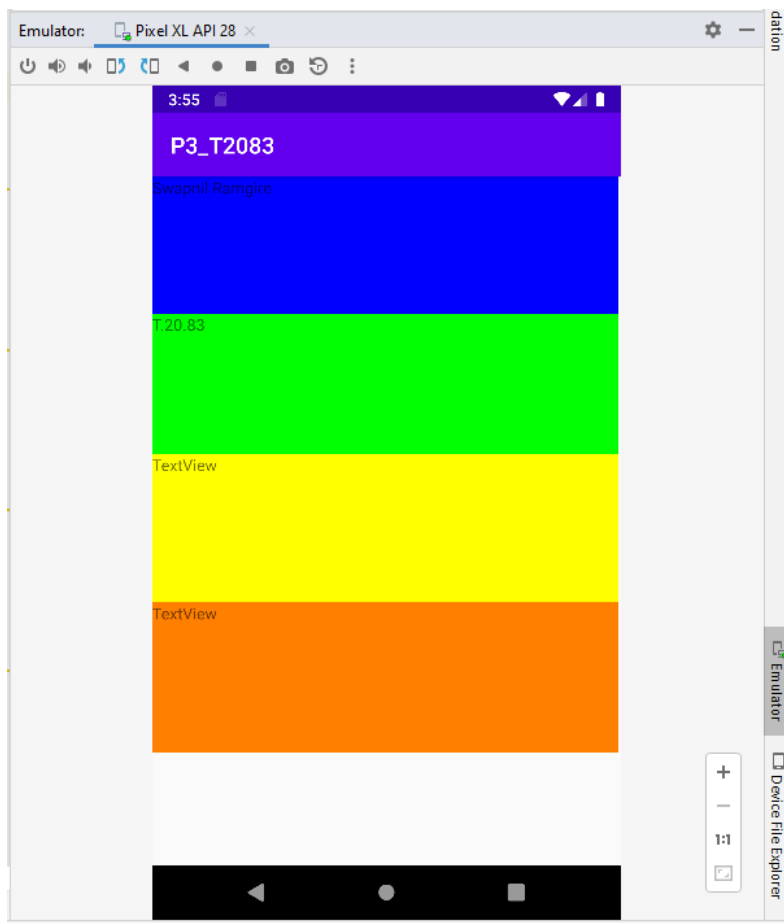
String

Go to, Project -> res -> values -> strings.xml

And Add these lines:

```xml
<resources>
    <string name="app_name">P3_T2083</string>
    <string name="studentName">Swapnil Ramgire</string>
    <string name="studentRollNumber">T.20.83</string>
    <string name="string3">Test String 1</string>
    <string name="string4">Test String 2</string>
</resources>
```

Now, go to activity_main.xml and add below line of code to every TextView

```xml
android:text=
```

Complete code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">
<!--    Swapnil Ramgire T.20.83-->
    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="729dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="120dp"
            android:text="@string/studentName"
            android:background="@color/blue"/>

        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="123dp"
            android:text="@string/studentRollNumber"
            android:background="@color/green" />

        <TextView
            android:id="@+id/textView3"
            android:layout_width="match_parent"
            android:layout_height="130dp"
            android:text="@string/string3"
            android:background="@color/yellow" />

        <TextView
            android:id="@+id/textView4"
            android:layout_width="match_parent"
            android:layout_height="131dp"
            android:text="@string/string4"
            android:background="@color/orange" />
```
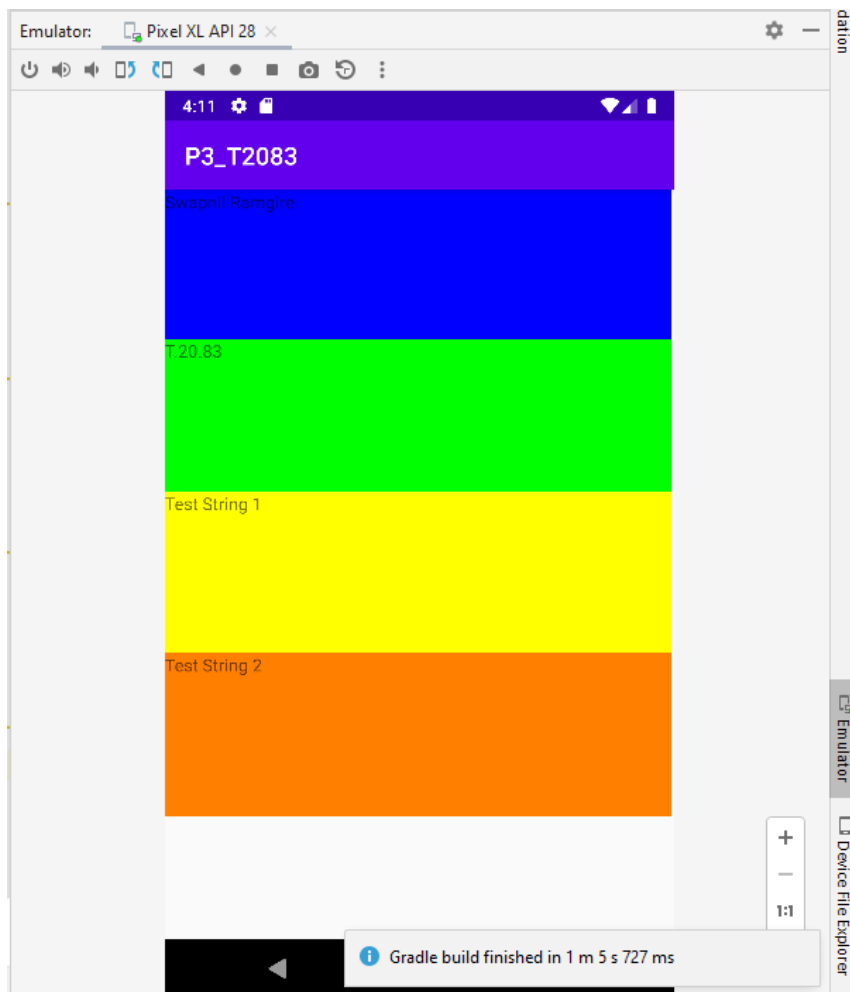
SWAPNIL RAMGIRE T.20.83

```
        </LinearLayout>
</android.support.constraint.ConstraintLayout>
```
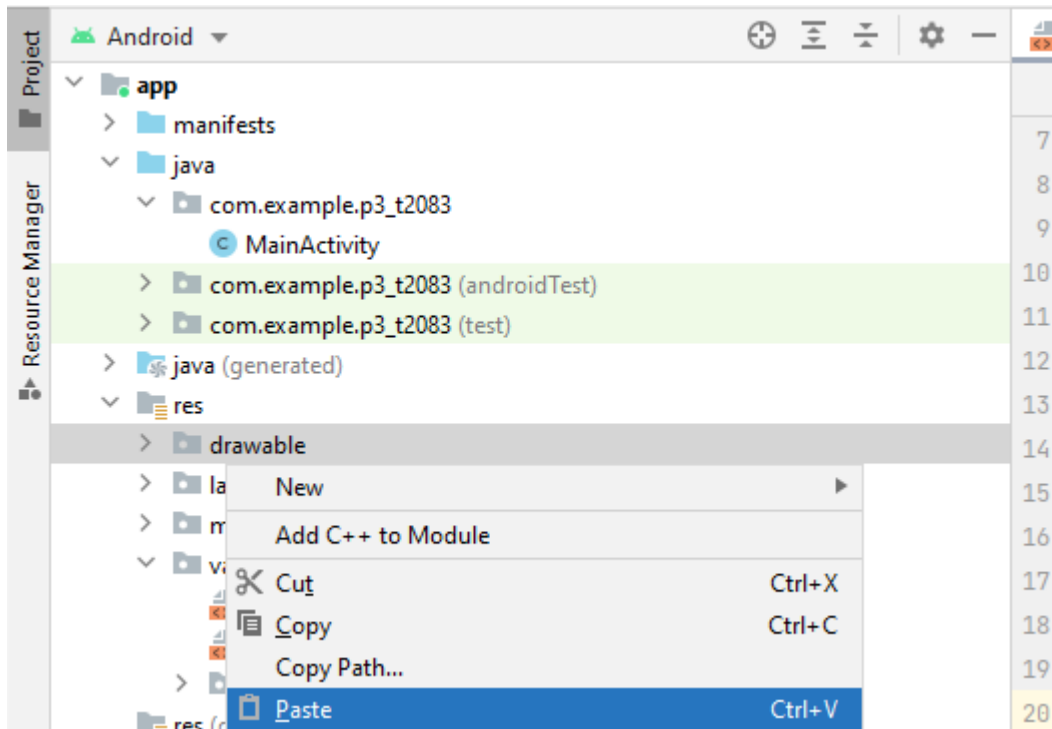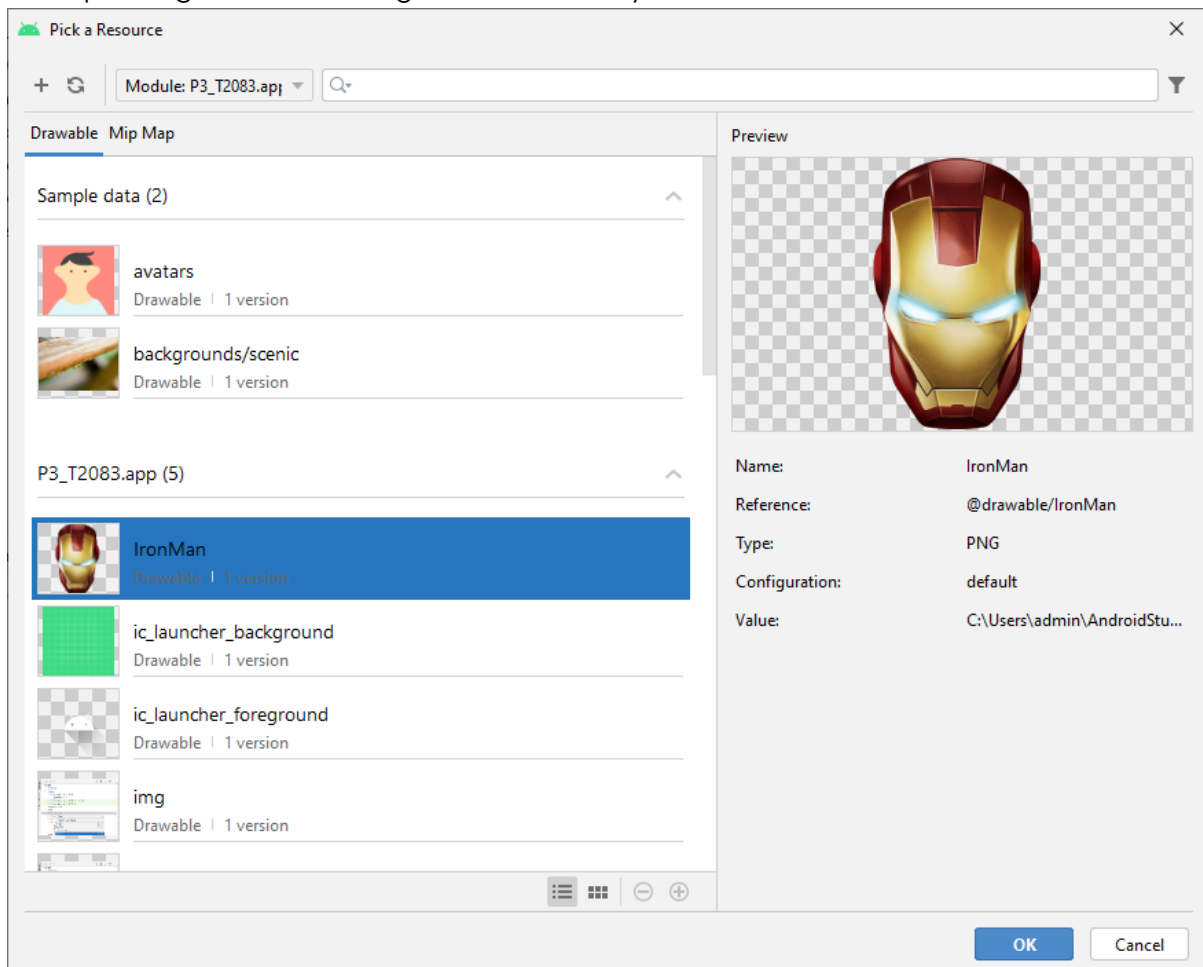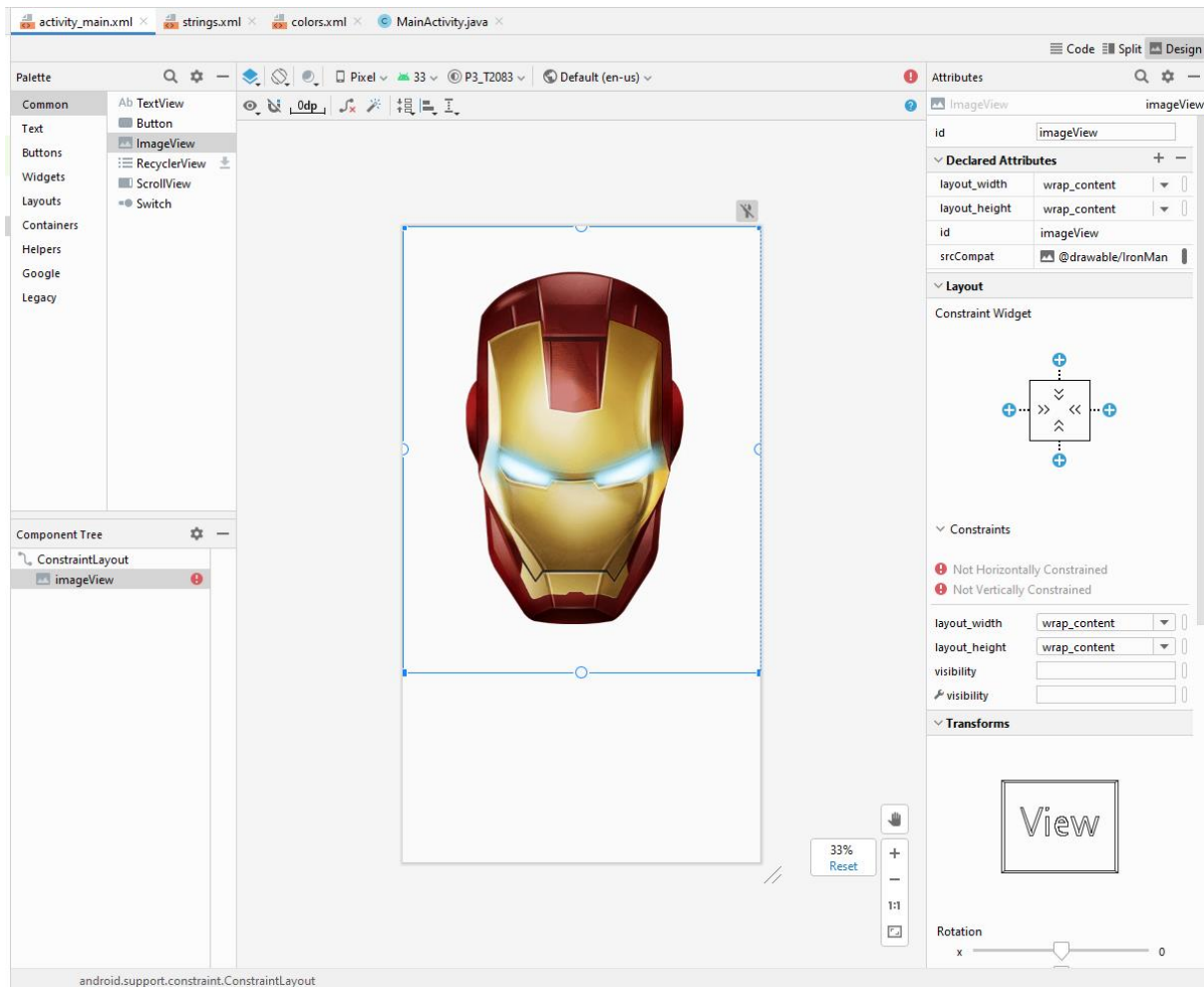
OUTPUT:

Images:

Download and image and paste it in the Project -> res ->Drawable

After pasting, add one ImageView in activity_main.xml

Complete code of activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">
<!--    Swapnil Ramgire T.20.83-->

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:srcCompat="@drawable/IronMan"
        tools:layout_editor_absoluteX="116dp"
        tools:layout_editor_absoluteY="214dp" />
</android.support.constraint.ConstraintLayout>
```
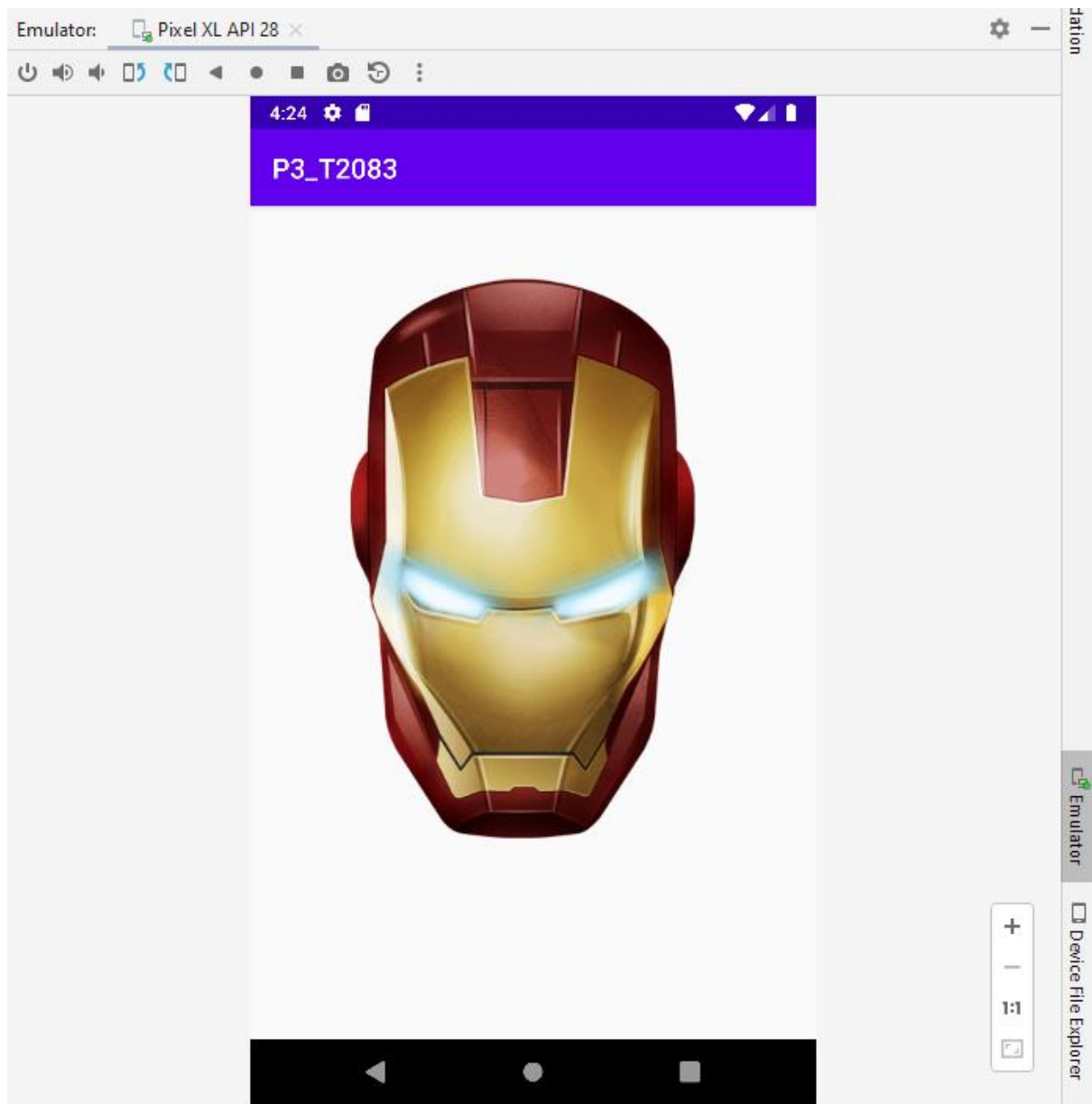
Practical 3

AIM: Programming Activities and fragments
Activity Life Cycle, Activity methods, Multiple Activities, Life Cycle of fragments and multiple fragments.

Solution:

Code of: **ActivityMain.java**

```java
package com.example.practical3;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;

public class MainActivity extends AppCompatActivity {
//     Swapnil Ramgire T.20.83
    String tag = "Android Lifecycle";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void onStart() {
        super.onStart();
        Log.d(tag, "In onStart event");
    }
    public void onStop() {
        super.onStop();
        Log.d(tag, "In onStop event");
    }
    public void onPause() {
        super.onPause();
        Log.d(tag, "In onPause event");
    }
    public void onResume() {
        super.onResume();
        Log.d(tag, "In onResume event");
    }
    public void onDestroy() {
        super.onDestroy();
        Log.d(tag, "In onDestroy event");
```

```
        }
}
```

OUTPUT (log)


```
Run:    app ×                                                                      ⚙  —   Even
    D/goldfish-address-space: allocate: ioctl allocate returned offset 0x3f3ffe000 size 0x2000
    W/Gralloc4: allocator 4.x is not supported
    D/HostConnection: HostComposition ext ANDROID_EMU_CHECKSUM_HELPER_v1 ANDROID_EMU_native_sync_v2 ANDROID_EMU_r
    W/Parcel: Expecting binder but got null!
    I/Choreographer: Skipped 38 frames!  The application may be doing too much work on its main thread.
    D/Android Lifecycle: In onPause event
    D/Android Lifecycle: In onStop event
    D/Android Lifecycle: In onStart event
    D/Android Lifecycle: In onResume event
    I/Choreographer: Skipped 34 frames!  The application may be doing too much work on its main thread.
    D/HostConnection: createUnique: call
    D/HostConnection: HostConnection::get() New Host Connection established 0x73f573a71990, tid 7323
  ℙ Version Control    ▶ Run    ☰ TODO    ❶ Problems    ▣ Terminal    ☰ Logcat    ⚱ App Inspection    ⚒ Build    ⌒ Profiler
```

Practical 4

AIM: Programs related to different Layouts

Coordinate, Linear, Relative, Table, Absolute, Frame, List View, Grid View.

Solution:

Linear Layout

Activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">

<!--    Swapnil Ramgire T.20.83-->

    <LinearLayout
        android:layout_width="410dp"
        android:layout_height="733dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="AMP Practical 4" />

        <TextView
            android:id="@+id/textView2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Swapnil Ramgire"
            android:textSize="30dp"/>

        <EditText
            android:id="@+id/editTextTextPersonName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:ems="10"
            android:inputType="textPersonName"
            android:text="Roll no."
            android:textSize="35dp" />
    </LinearLayout>

</android.support.constraint.ConstraintLayout>
```
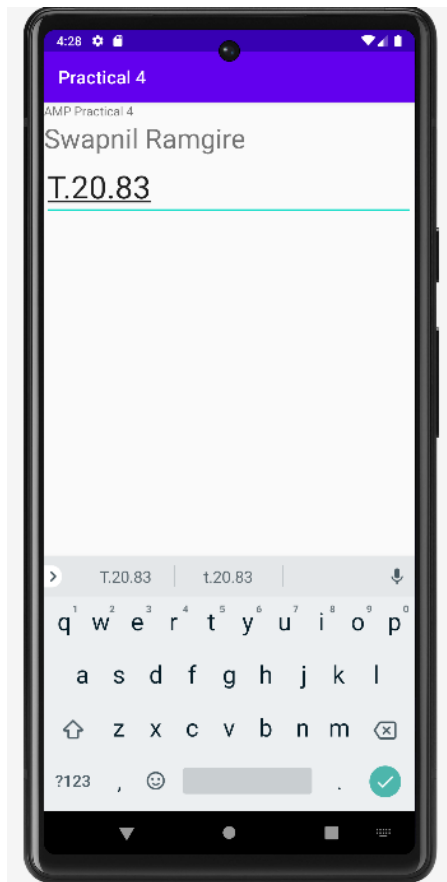
OUTPUT:

Table Layout

Activity_main.xlm:

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">
<!--Swapnil Ramgire T.20.83-->
    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent" >

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

SWAPNIL RAMGIRE T.20.83

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

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

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent" >

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

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

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

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent" >

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Swapnil Ramgire"
        android:textSize="20dp"/>

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="   T.20.83"
        android:textSize="20dp"/>
</TableRow>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="match_parent" />

<TableRow
    android:layout_width="match_parent"
```

```
                android:layout_height="match_parent" />
    </TableLayout>
</android.support.constraint.ConstraintLayout>
```

OUTPUT:

Practical 5

AIM: Programming UI elements

AppBar, Fragments, UI Components

Solution:

A) AppBar

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <TextView
            android:id="@+id/textView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Sweet Panda"
            android:textSize="50dp" />

        <android.support.v7.widget.Toolbar
            android:id="@+id/toolbar"
            android:layout_width="409dp"
            android:layout_height="110dp"
            android:background="?attr/colorPrimary"
            android:minHeight="?attr/actionBarSize"
            android:theme="?attr/actionBarTheme" />
    </LinearLayout>

</android.support.constraint.ConstraintLayout>
```
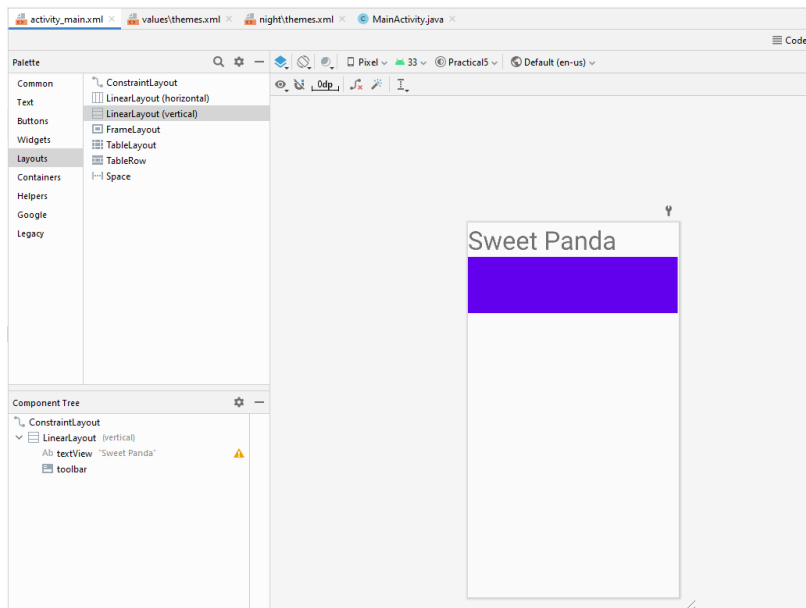
Changes in values/themes.xml

```xml
<style name="Theme.Practical5" parent="Theme.AppCompat.Light.NoActionBar">
```

 Complete code

```xml
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Practical5"
parent="Theme.AppCompat.Light.NoActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/purple_500</item>
        <item name="colorPrimaryDark">@color/purple_700</item>
        <item name="colorAccent">@color/teal_200</item>
        <!-- Customize your theme here. -->
    </style>
</resources>
```

MainActivity.java

```java
package com.example.practical5;

import android.support.v7.app.AppCompatActivity;
import android.support.v7.widget.Toolbar;
import android.os.Bundle;
import android.widget.TextView;
import android.view.View;


public class MainActivity extends AppCompatActivity {
TextView tw;
int count=0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

```
        Toolbar tbar = (Toolbar) findViewById(R.id.toolbar);
        setSupportActionBar(tbar);
        getSupportActionBar().setDisplayShowHomeEnabled(true);
        getSupportActionBar().setLogo(R.drawable.android);
        getSupportActionBar().setDisplayUseLogoEnabled(true);
        tw = (TextView) findViewById(R.id.textView);
        tbar.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                count++;
                tw.setText(" "+count);
            }
        });
    }
}
```

OUTPUT
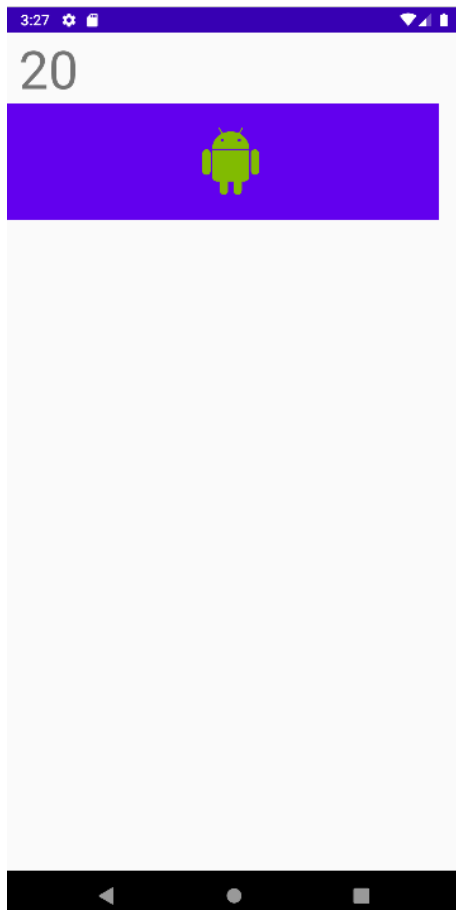
B)

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">

    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent" >

            <EditText
                android:id="@+id/num1"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:ems="10"
                android:inputType="textPersonName"
                android:text="Name" />

            <EditText
                android:id="@+id/num2"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:ems="10"
                android:inputType="textPersonName"
                android:text="Name" />
        </TableRow>

        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent" >

            <Button
                android:id="@+id/add"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:text="Add" />

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

        <TableRow
            android:layout_width="match_parent"
            android:layout_height="match_parent" >

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

```xml
                    android:layout_height="wrap_content"
                    android:text="Multiply" />

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

        <TableRow
                android:layout_width="match_parent"
                android:layout_height="match_parent" >

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

        <TableRow
                android:layout_width="match_parent"
                android:layout_height="match_parent" >

            <TextView
                    android:id="@+id/output"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:text="Swapnil Ramgire T.20.83"
                    android:textSize="15dp"/>
        </TableRow>
    </TableLayout>
</android.support.constraint.ConstraintLayout>
```

MainActivity.java

```java
package com.example.calculator;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.*;
import android.view.View;
import static android.view.View.*;

public class MainActivity extends AppCompatActivity {
    // Swapnil Ramgire
    // T.20.83
    EditText input1, input2;
    Button add,sub,mul,div,clear,submit;
    TextView tv;
    int n1, n2;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        input1 = (EditText) findViewById(R.id.num1);
        input2 = (EditText) findViewById(R.id.num2);
        add = (Button) findViewById(R.id.add);
```

```java
        sub = (Button) findViewById(R.id.sub);
        mul = (Button) findViewById(R.id.mul);
        div = (Button) findViewById(R.id.div);
        clear = (Button) findViewById(R.id.clearBtn);
        tv = (TextView) findViewById(R.id.output);

        add.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                n1 = Integer.parseInt(input1.getText().toString());
                n2 = Integer.parseInt(input2.getText().toString());
                int output = n1+n2;
                tv.setText("OUTPUT: " + output);
            }
        });
        sub.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                n1 = Integer.parseInt(input1.getText().toString());
                n2 = Integer.parseInt(input2.getText().toString());
                int output = n1-n2;
                tv.setText("OUTPUT: " + output);
            }
        });
        mul.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                n1 = Integer.parseInt(input1.getText().toString());
                n2 = Integer.parseInt(input2.getText().toString());
                float output = n1*n2;
                tv.setText("OUTPUT: " + output);
            }
        });
        div.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                n1 = Integer.parseInt(input1.getText().toString());
                n2 = Integer.parseInt(input2.getText().toString());
                float output = (float) n1/n2;
                tv.setText("OUTPUT: " + output);
            }
        });
        clear.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View view) {
                input1.setText("");
                input2.setText("");
            }
        });
    }
}
```
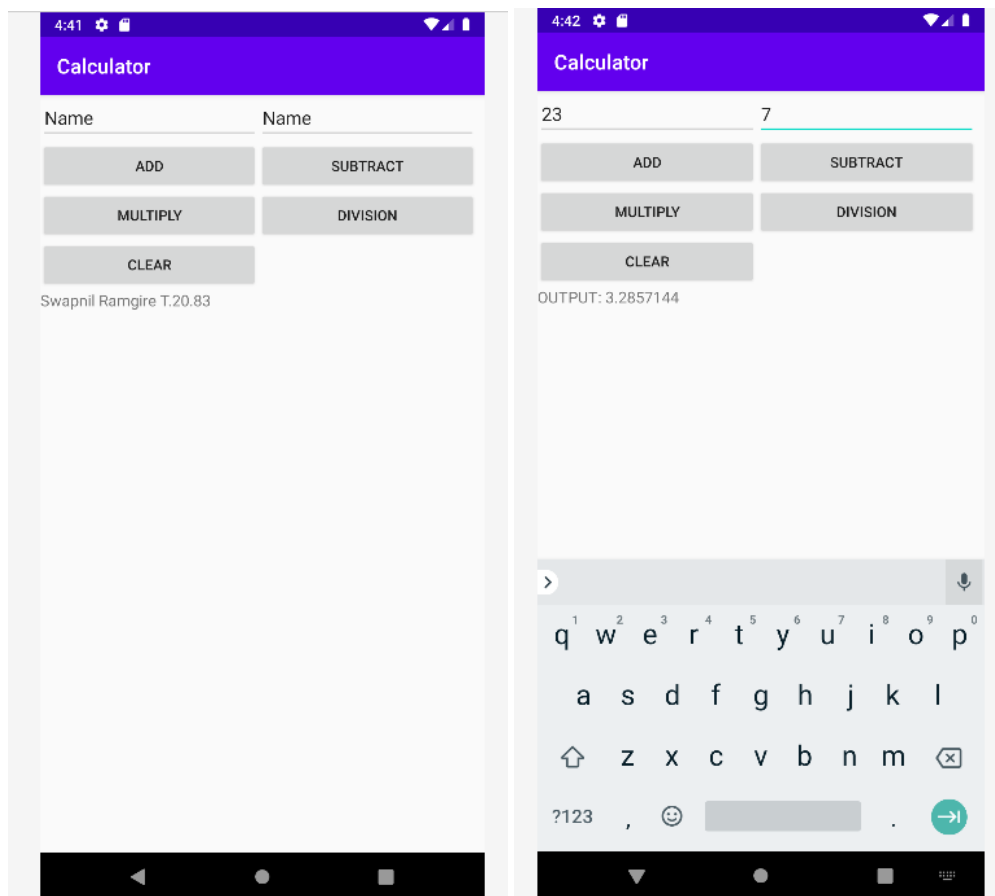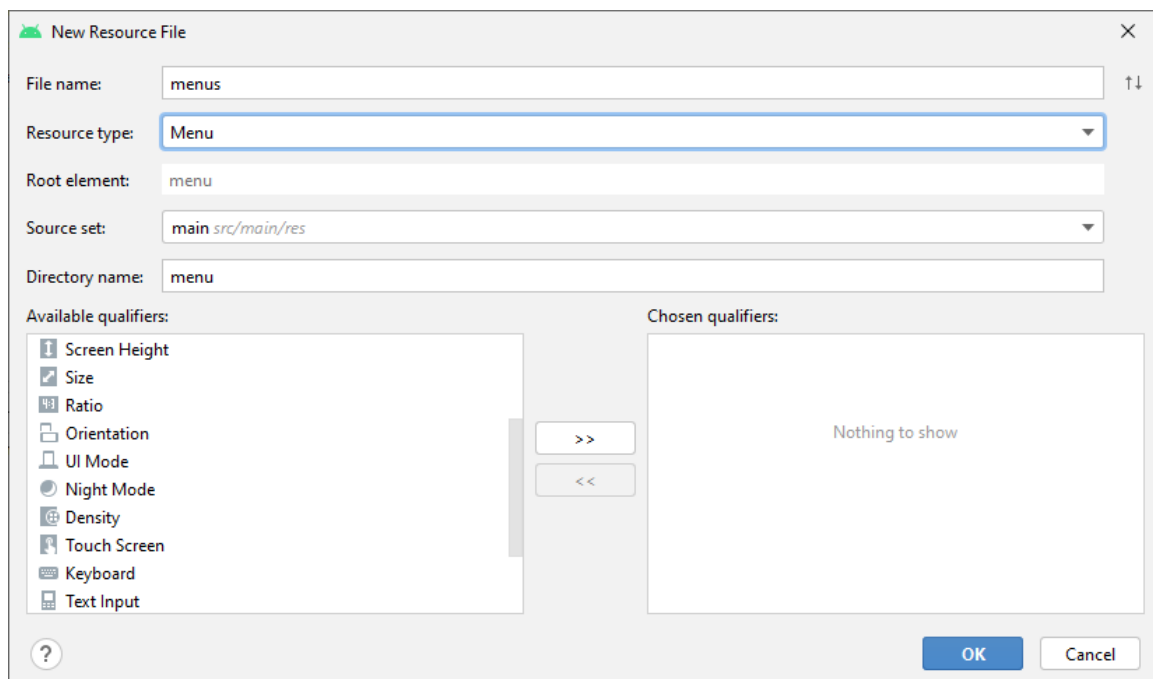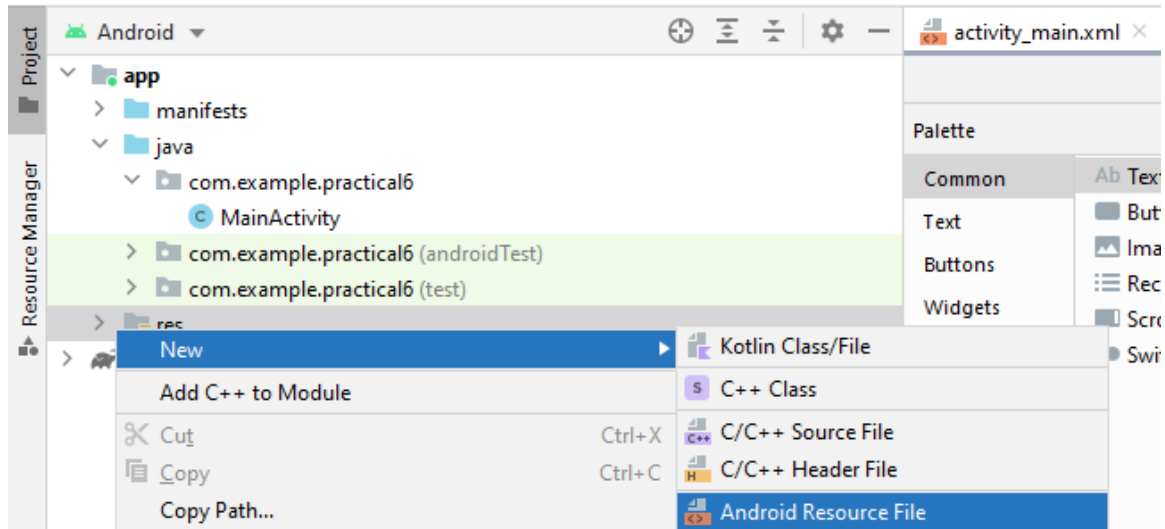
Design View

OUTPUT

SWAPNIL RAMGIRE T.20.83
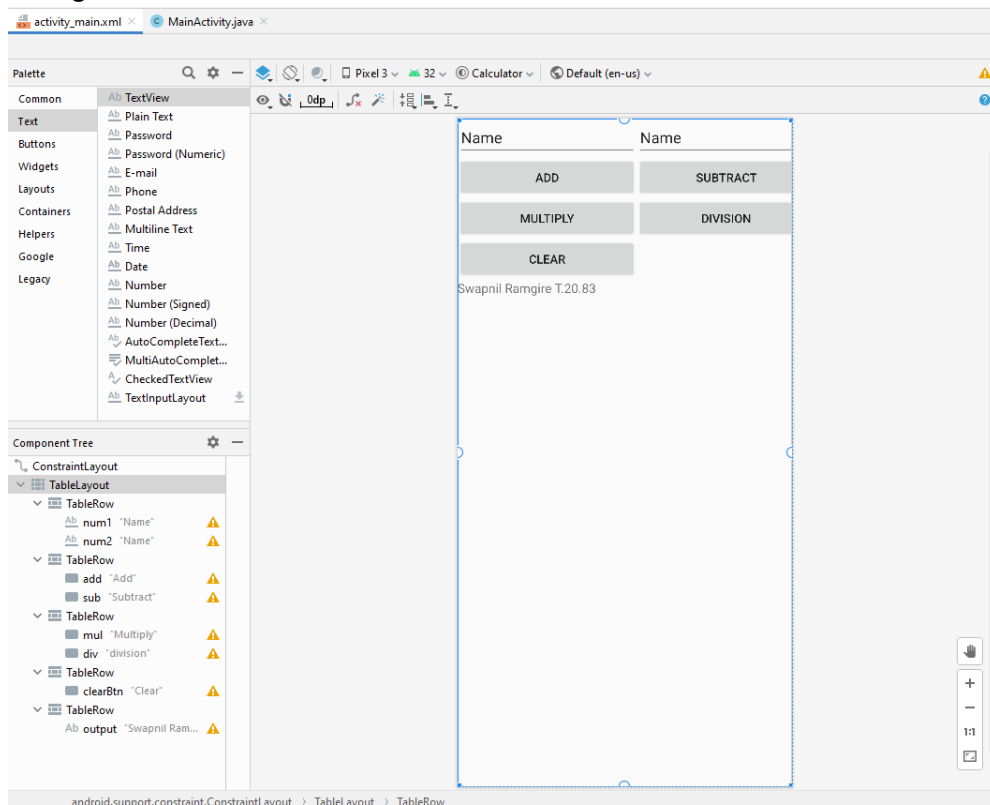
Practical 6

AIM: Programming menus, dialog, dialog fragments

Solution:

A) Menus

Create New project, then right click on res folder and add Android Resource File.

Then write below code in menus.xml
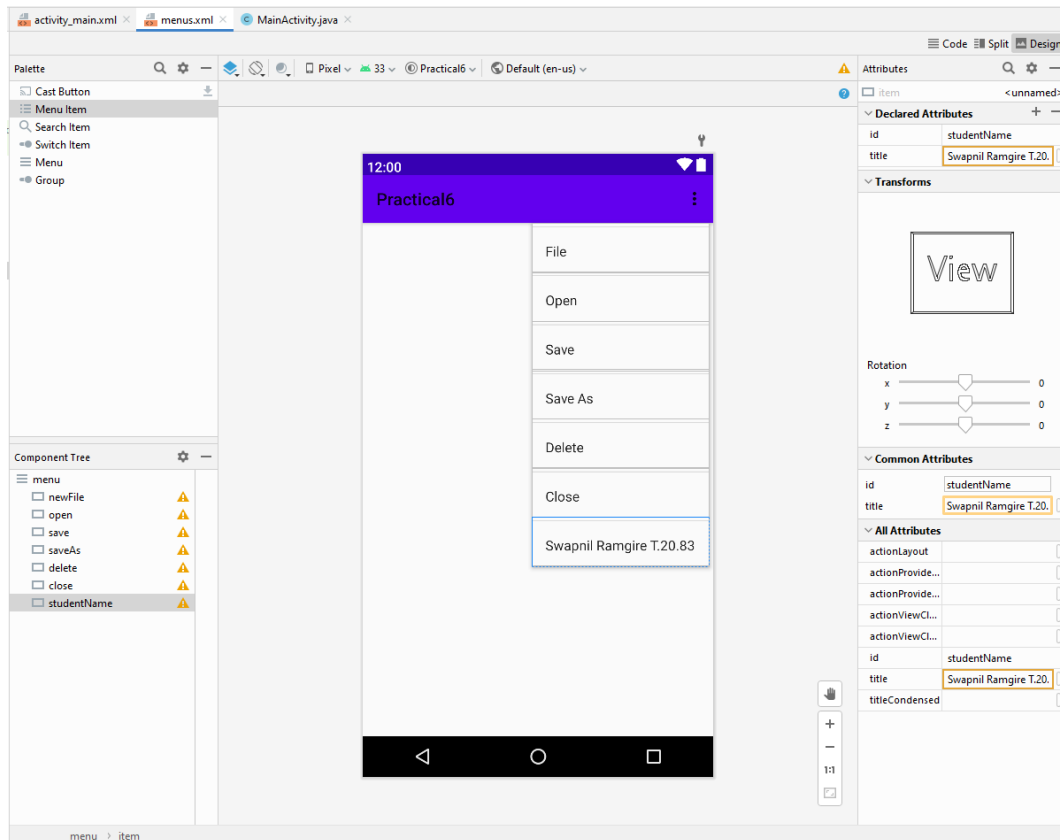
```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/newFile" android:title="File" />
    <item android:id="@+id/open" android:title="Open" />
    <item android:id="@+id/save" android:title="Save" />
    <item android:id="@+id/saveAs" android:title="Save As" />
    <item android:id="@+id/delete" android:title="Delete" />
```

```xml
    <item
        android:id="@+id/close"
        android:title="Close" />
    <item
        android:id="@+id/studentName"
        android:title="Swapnil Ramgire T.20.83" />
</menu>
```

Design View

ActivityMain.java

```java
package com.example.practical6;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.*;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
//    Swapnil ramgire T.20.83
    public boolean onCreateOptionsMenu(Menu menu){
        MenuInflater a = getMenuInflater();
        a.inflate(R.menu.menus, menu);
        return true;
    }
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public boolean onOptionsItemSelected(MenuItem item){
```

SWAPNIL RAMGIRE T.20.83

```java
        switch (item.getItemId()){
            case R.id.newFile:
                Toast.makeText(this, "File Selected",
Toast.LENGTH_SHORT).show();
                return true;
            case  R.id.open:
                Toast.makeText(this, "Open Selected",
Toast.LENGTH_SHORT).show();
                return true;
            case  R.id.save:
                Toast.makeText(this, "Save Selected",
Toast.LENGTH_SHORT).show();
                return true;
            case  R.id.saveAs:
                Toast.makeText(this, "SaveAs Selected",
Toast.LENGTH_SHORT).show();
                return true;
            case  R.id.delete:
                Toast.makeText(this, "Delete Selected",
Toast.LENGTH_SHORT).show();
                return true;
            case  R.id.close:
                Toast.makeText(this, "Close Selected",
Toast.LENGTH_SHORT).show();
                return true;
            case  R.id.studentName:
                Toast.makeText(this, "Swapnil Ramgire T.20.83",
Toast.LENGTH_SHORT).show();
                return true;
            default:
                return false;

        }
    }
}
```

OUTPUT
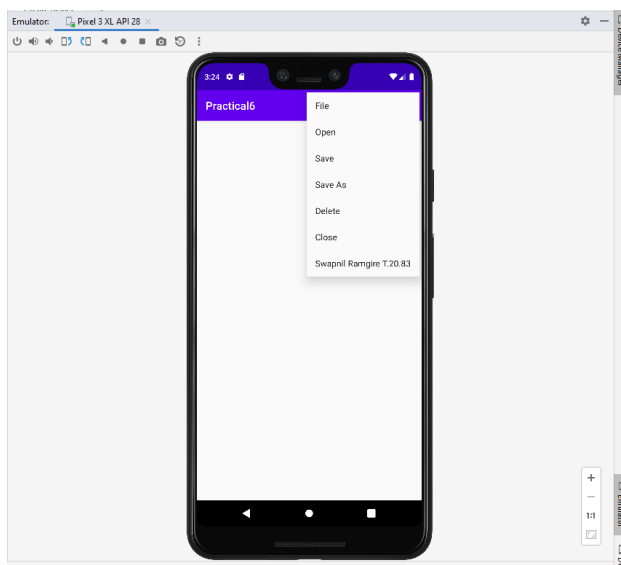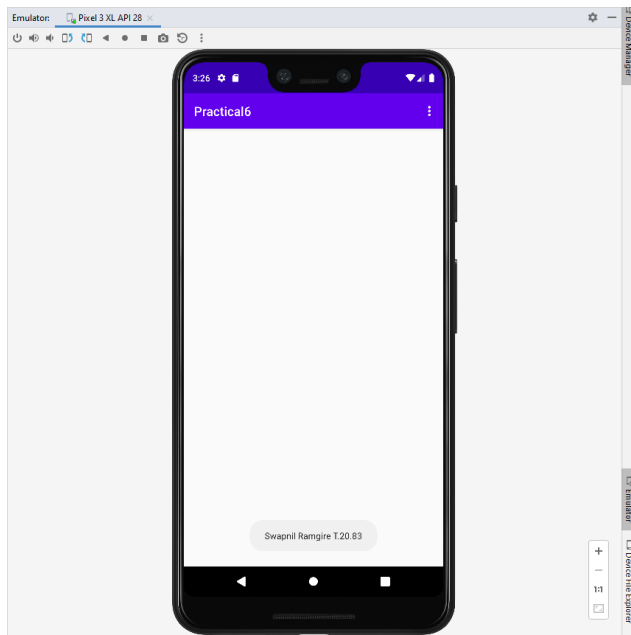
B) Dialog

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">
<!--Swapnil Ramgire T.20.83-->
    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="729dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <Button
            android:id="@+id/alert"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:onClick="onClickDialog"
            android:text="Click here to Open Alert Dialog"
            android:textSize="20dp"
            tools:ignore="OnClick"/>

        <TextView
            android:id="@+id/studentName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Swapnil Ramgire T.20.83"
            android:textSize="17dp"/>
    </LinearLayout>
</android.support.constraint.ConstraintLayout>
```

MainActivity.java

```java
package com.example.pract6b;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.app.AlertDialog;
import android.widget.Toast;
import android.content.DialogInterface;
import android.view.View;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void onClickDialog(View v){
        AlertDialog.Builder builder=new AlertDialog.Builder(this);
            builder.setMessage("Do you Want To Continue??");
```

```
            builder.setPositiveButton("OK", new
DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i)
{
                    Toast.makeText(getBaseContext(), "OK Clicked",
Toast.LENGTH_SHORT).show();
                }
            });
            builder.setNegativeButton("Cancel", new
DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i)
{
                    Toast.makeText(getBaseContext(), "Cancel Clicked",
Toast.LENGTH_SHORT).show();
                }
            });
            AlertDialog alert = builder.create();
            alert.setTitle("Alert Box");
            alert.show();
    }
}
```

OUTPUT:
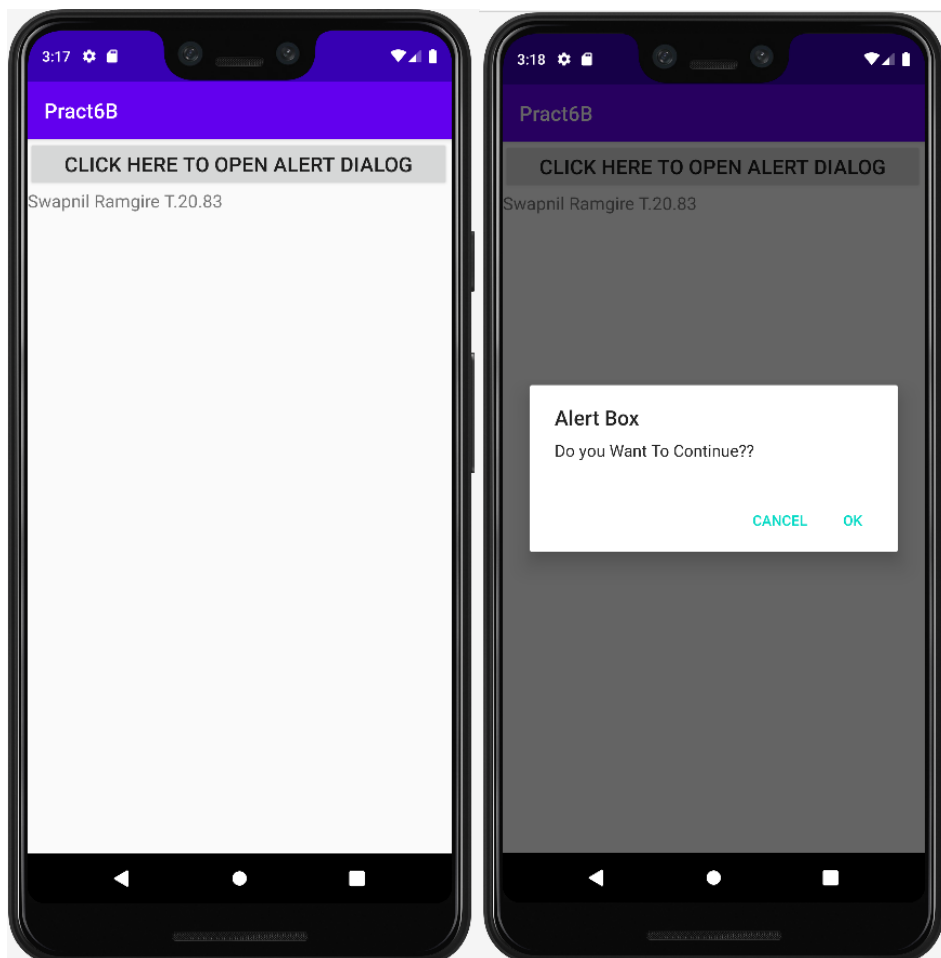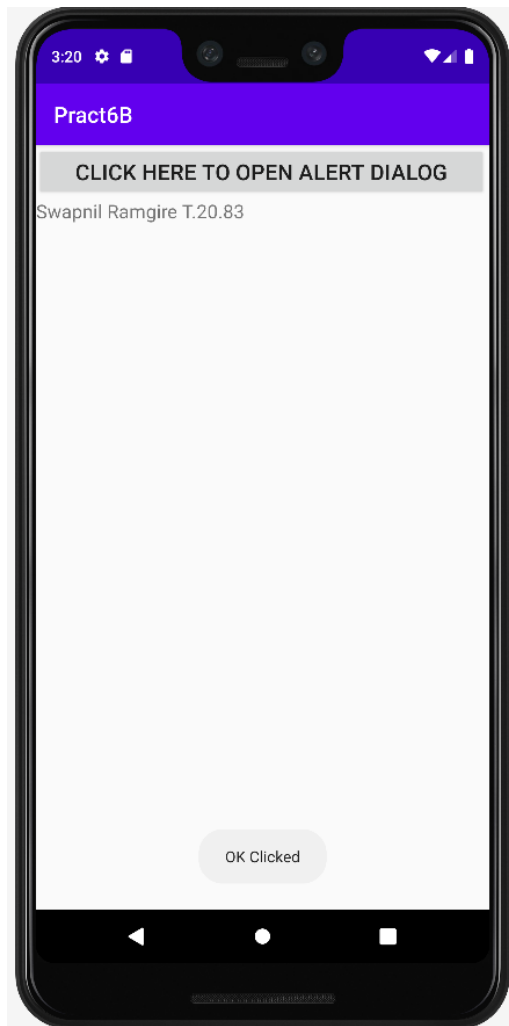
Practical 7

AIM: Programs on Intents, Events, Listeners and Adapters
The Android Intent Class, Using Events and Event Listeners

Solution:

Code for **activity_main.xml**

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">
    <TableLayout android:layout_width="match_parent"
android:layout_height="match_parent">
        <TableRow android:layout_width="match_parent"
android:layout_height="match_parent">
            <TextView android:id="@+id/textView"
android:layout_width="wrap_content"
                android:layout_height="wrap_content" android:text="BIO-
DATA" android:textSize="25dp" />
        </TableRow>
        <TableRow android:layout_width="match_parent"
android:layout_height="match_parent">
            <TextView android:id="@+id/textView2"
android:layout_width="wrap_content"
                android:layout_height="wrap_content"
android:text="First Name" />
            <EditText android:id="@+id/fn"
android:layout_width="wrap_content"
                android:layout_height="wrap_content" android:ems="10"
                android:inputType="textPersonName" android:text="Name"
/>
        </TableRow>
        <TableRow android:layout_width="match_parent"
android:layout_height="match_parent">
            <TextView android:id="@+id/textView3"
android:layout_width="wrap_content"
                android:layout_height="wrap_content" android:text="Last
Name" />
            <EditText android:id="@+id/ln"
android:layout_width="wrap_content"
```

```xml
                    android:layout_height="wrap_content" android:ems="10"
                    android:inputType="textPersonName" android:text="Name"
/>
        </TableRow>
        <TableRow android:layout_width="match_parent"
android:layout_height="match_parent">
            <Button android:id="@+id/submitBtn"
android:layout_width="wrap_content"
                android:layout_height="wrap_content"
android:text="Submit" />
        </TableRow>
    </TableLayout>
</android.support.constraint.ConstraintLayout>
```

MainActivity.java

```java
package com.example.myapplication;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText fName, lName;
    Button submitBtn;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        fName = (EditText) findViewById(R.id.fn);
        lName = (EditText) findViewById(R.id.ln);
        submitBtn = (Button) findViewById(R.id.submitBtn);
        submitBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new Intent(getApplicationContext(),
ViewActivity.class);
                i.putExtra("vFName", fName.getText().toString());
                i.putExtra("vLName", lName.getText().toString());
                startActivity(i);
```

```
                }
        });
    }
}
```

activity_view.xml
```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
android:layout_width="match_parent"
    android:layout_height="match_parent" tools:context=".ViewActivity">

    <LinearLayout android:layout_width="409dp"
android:layout_height="729dp"
        android:orientation="vertical"
tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <TextView android:id="@+id/outputText"
android:layout_width="match_parent"
            android:layout_height="wrap_content"
android:text="TextView" android:textSize="25dp" />
    </LinearLayout>
</android.support.constraint.ConstraintLayout>
```

ViewActivity.java
```java
package com.example.myapplication;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent;
import android.widget.TextView;

public class ViewActivity extends AppCompatActivity {
    TextView tv;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_view);
        tv = (TextView) findViewById(R.id.outputText);
```
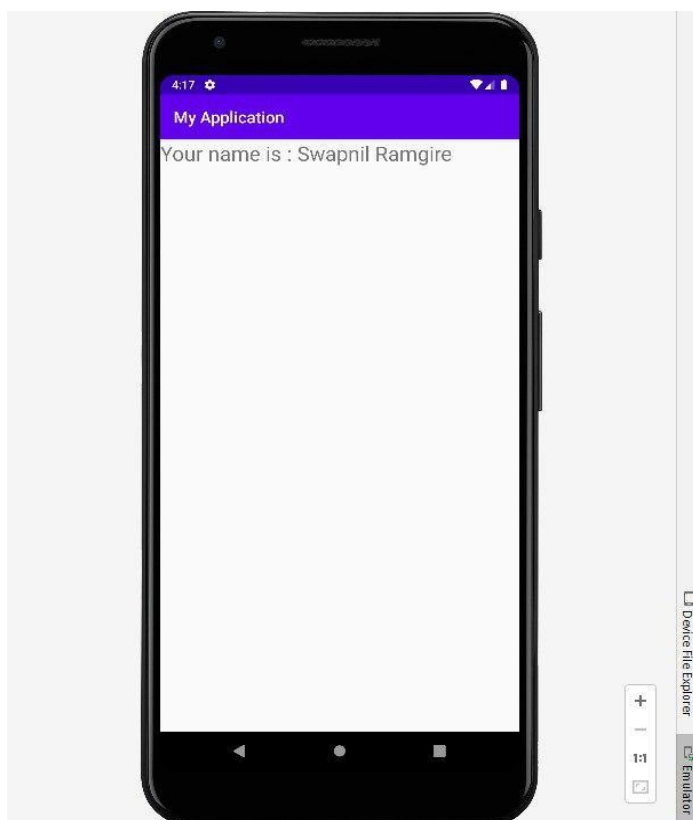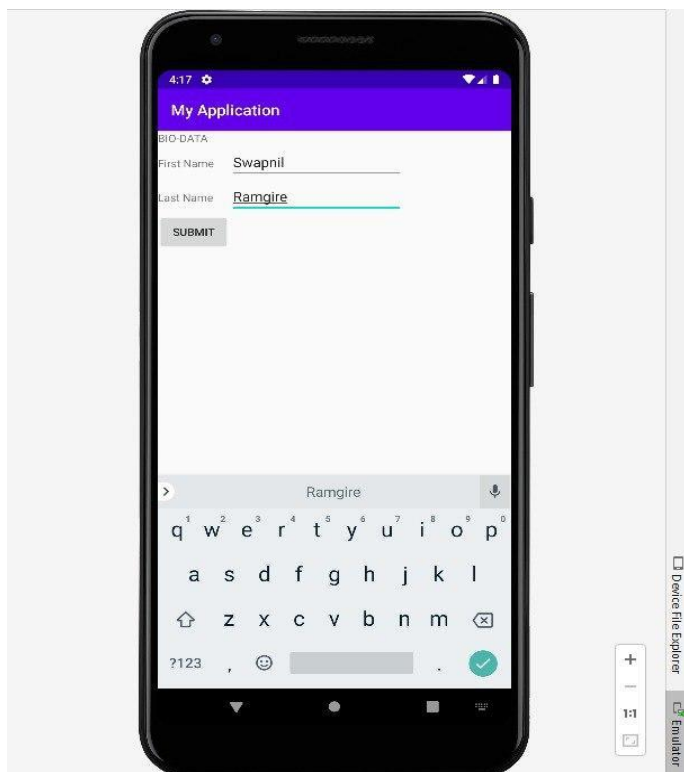
```java
        Intent intent = getIntent();
        String fName = intent.getStringExtra("vFName");
        String lName = intent.getStringExtra("vLName");
        tv.setText("Your name is : " + fName + " " + lName);
    }
}
```

OUTPUT

SWAPNIL RAMGIRE T.20.83

Practical 8

AIM: Programs on Services, notification and broadcast receivers

## Solution:

A) Notifications

MainActivity.java

```java
package com.example.p8a;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.os.Build;
import android.support.v4.app.NotificationCompat;
import android.support.v4.app.NotificationManagerCompat;
import android.support.v7.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);
        if(Build.VERSION.SDK_INT >= Build.VERSION_CODES.O){
            String desc = "Swapnil Ramgire T.20.83";
            int importance = NotificationManager.IMPORTANCE_DEFAULT;
            NotificationChannel nc = new NotificationChannel("My
Notification","College Notification", importance);
            nc.setDescription(desc);
            NotificationManager nm = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
            nm.createNotificationChannel(nc);
        }
        NotificationCompat.Builder builder = new
NotificationCompat.Builder(this,"My Notification");
        builder.setContentTitle("Notification for orientation");
        builder.setSmallIcon(R.drawable.ic_launcher_background);
        builder.setAutoCancel(true);
        builder.setContentText("Swapnil Ramgire T.20.83");
        NotificationManagerCompat manager =
NotificationManagerCompat.from(this);
        manager.notify(999, builder.build());
    }
}
```
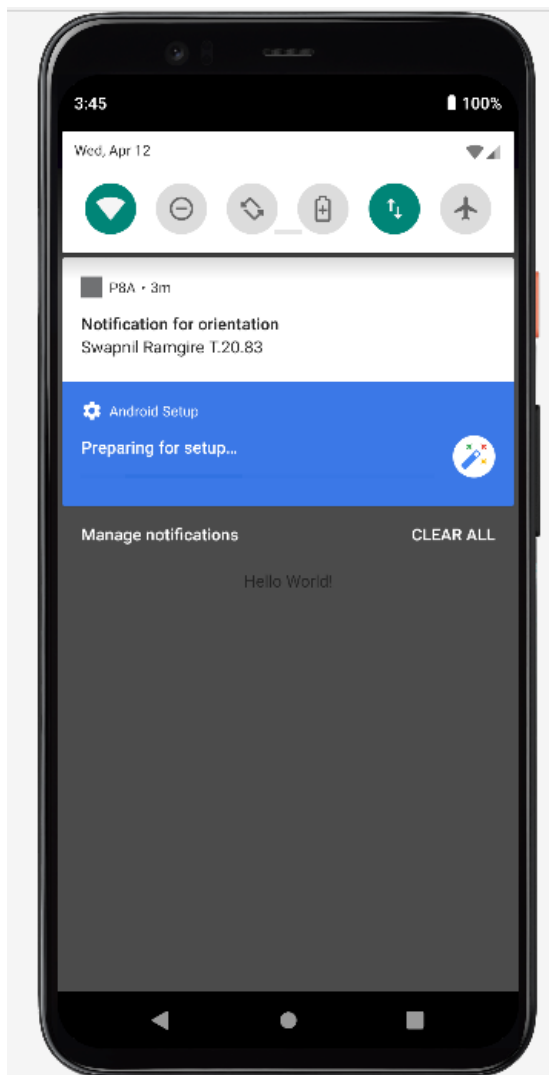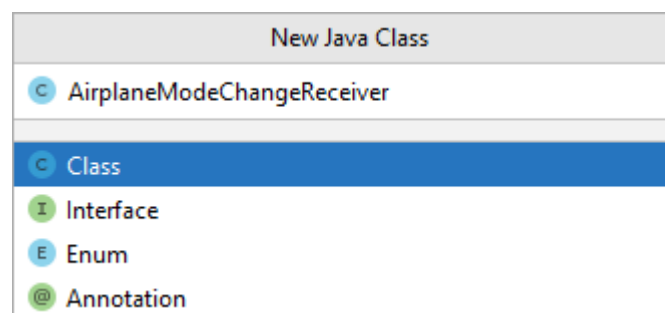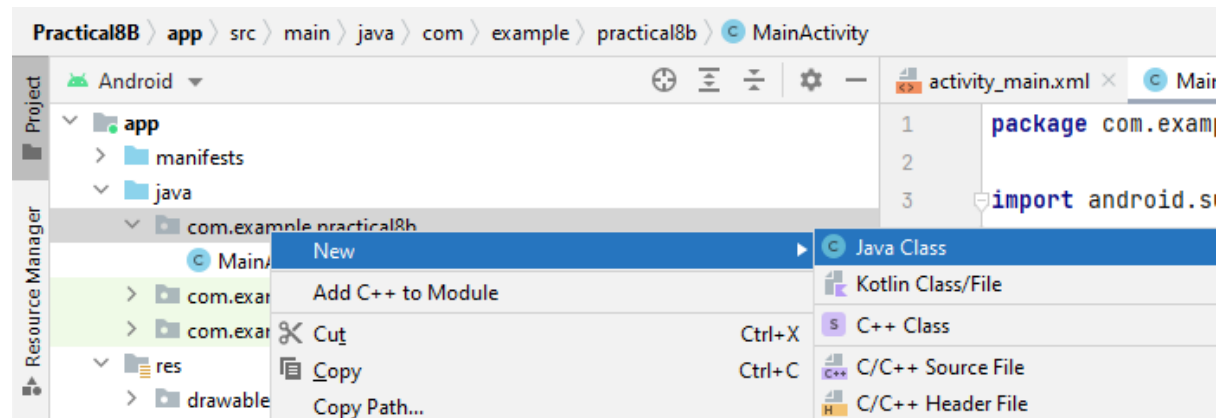
B) Broadcast receivers

Create new project then, right click on Project -> java -. Com.example.<project name>

And add new class

Code:

AirplaneModeChangeReceiver.java

```java
package com.example.practical8b;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.provider.Settings;
import android.widget.Toast;


public class AirplaneModeChangeReceiver extends BroadcastReceiver {
    public void onReceive(Context context, Intent intent){
        if (isAirplaneModeOn(context.getApplicationContext())){
            Toast.makeText(context, "Airplane mode is on (T.20.83)",
Toast.LENGTH_SHORT).show();
        } else {
            Toast.makeText(context, "Airplane mode is off (Swapnil
Ramgire)", Toast.LENGTH_SHORT).show();
        }
    }
    private static boolean isAirplaneModeOn(Context context){
        return Settings.System.getInt(context.getContentResolver(),
Settings.Global.AIRPLANE_MODE_ON, 0) != 0;
    }
}
```

MainActivity.java

```java
package com.example.practical8b;

import android.content.Intent;
import android.content.IntentFilter;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    AirplaneModeChangeReceiver airplaneModeChangeReceiver = new
AirplaneModeChangeReceiver();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    protected void onStart(){
        super.onStart();
        IntentFilter filter = new
IntentFilter(Intent.ACTION_AIRPLANE_MODE_CHANGED);
        registerReceiver(airplaneModeChangeReceiver, filter);
    }
    protected void onStop(){
        super.onStop();
        unregisterReceiver(airplaneModeChangeReceiver);
    }
}
```
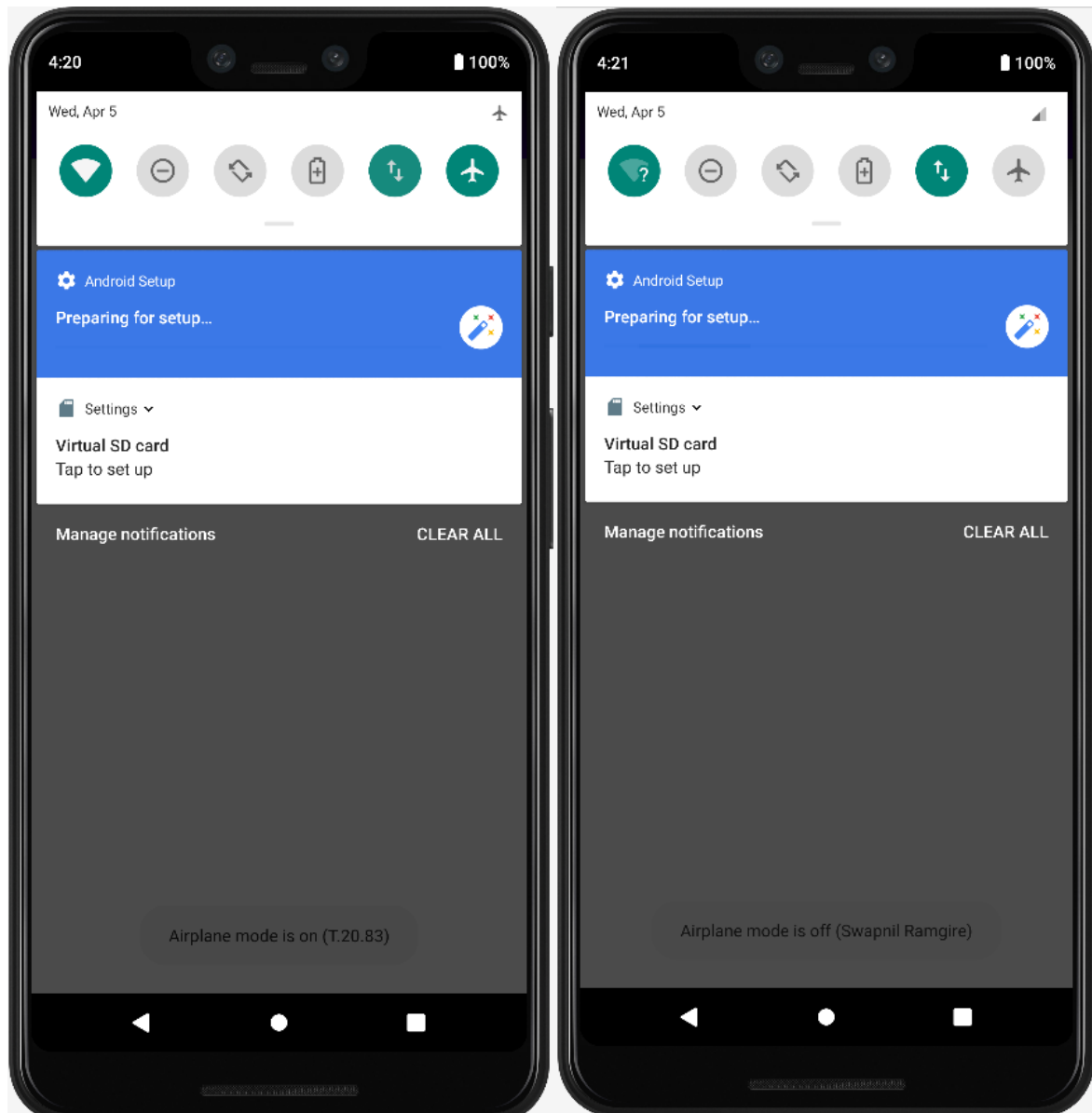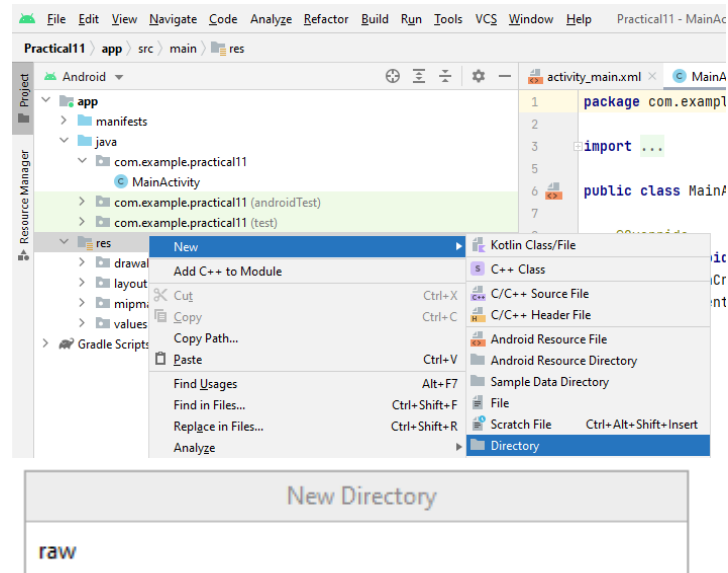
Practical 11

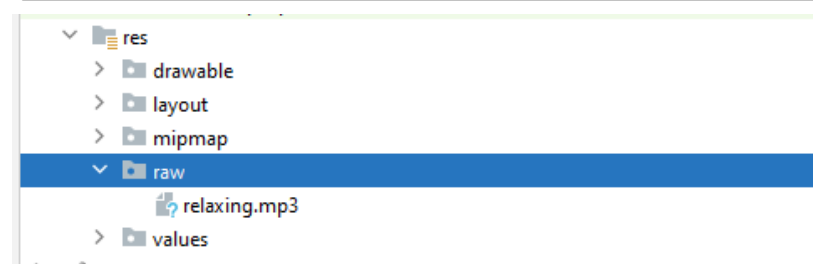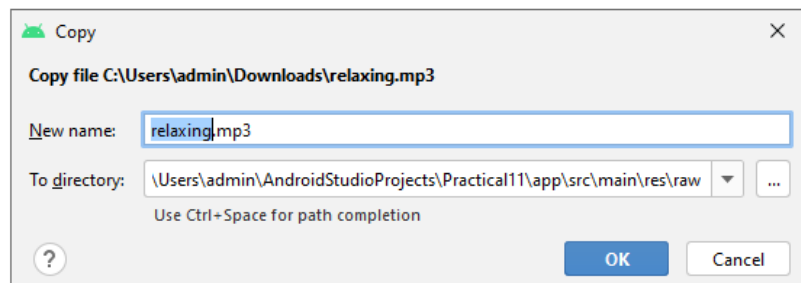**AIM:** Programming Media API and Telephone API

Solution:

11.A) Playing audio file in android

Steps:

Create folder called "raw" in res folder of project

Copy and paste your audio file in raw folder

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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"
```

```xml
        tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <Button
            android:id="@+id/start"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Start" />

        <Button
            android:id="@+id/stop"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Stop" />

        <Button
            android:id="@+id/pause"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Pause" />

        <TextView
            android:id="@+id/textView5"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Swapnil Ramgire T.20.83"
            android:textSize="20dp"/>
    </LinearLayout>
</android.support.constraint.ConstraintLayout>
```

MainActivity.java
```java
package com.example.practical11;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

import android.media.MediaPlayer;
import android.widget.Button;
import android.view.View;

public class MainActivity extends AppCompatActivity {
    Button start,pause,stop;

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

        start=(Button)findViewById(R.id.start);
        pause=(Button)findViewById(R.id.pause);
        stop=(Button)findViewById(R.id.stop);
        MediaPlayer ring= MediaPlayer.create(this,R.raw.relaxing);
        start.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                ring.start();
```

```
            }
        });
        pause.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                ring.pause();
            }
        });
        stop.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                ring.stop();
            }
        });
    }
}
```
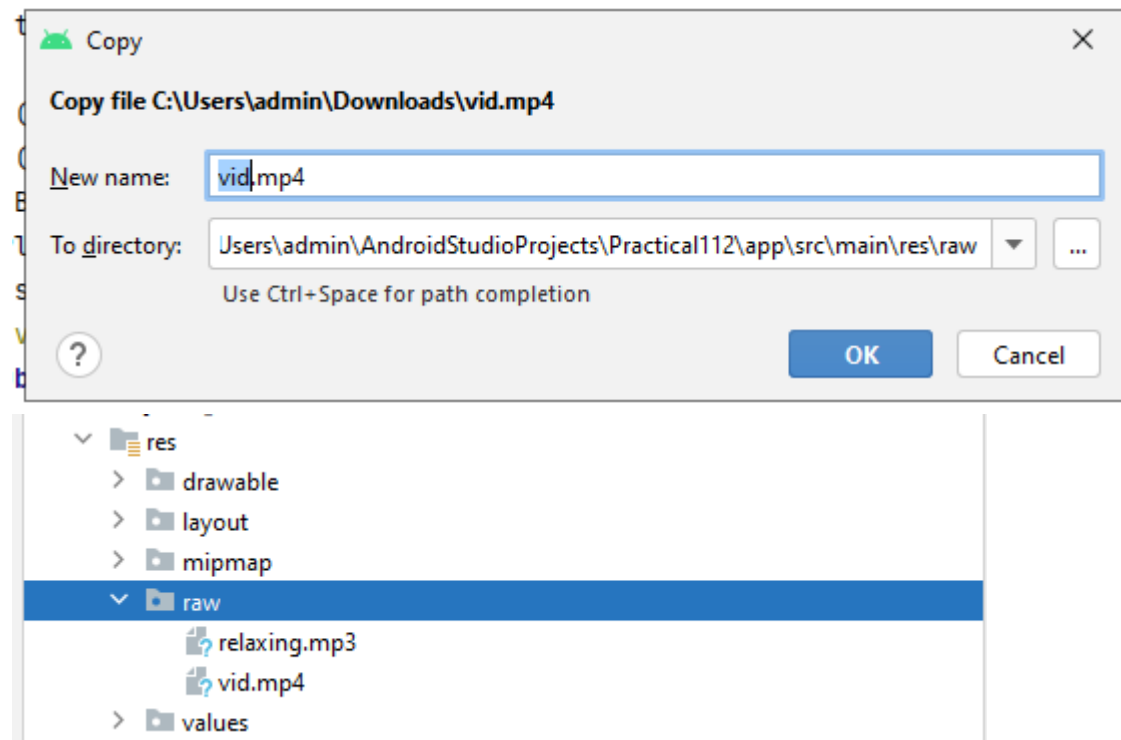
OUTPUT

11.B) Playing video in android

Steps:

Copy paste your video file in this raw folder

MainActivity.java

```java
package com.example.practical11;

import android.net.Uri;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

import android.widget.MediaController;
import android.widget.VideoView;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        VideoView v=(VideoView) findViewById(R.id.video);

v.setVideoURI(Uri.parse("android.resource://"+getPackageName()+"/"+R.raw.vid));
        MediaController m=new MediaController(this);
        v.setMediaController(m);
        v.start();

    }
}
```

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">


        <VideoView
            android:id="@+id/video"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />

        <TextView
            android:id="@+id/textView5"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Swapnil Ramgire T.20.83"
            android:textSize="20dp"/>
    </LinearLayout>
</android.support.constraint.ConstraintLayout>
```

OUTPUT

SWAPNIL RAMGIRE T.20.83