PRACTICAL-1

AIM: Compare various operating systems with Android OS.

Android:

- Android is a software package and Linux based operating system for mobile devices such as tablet computers and smartphones.
- It is developed by Google and later the OHA (Open Handset Alliance). Java language is mainly used to write the android code even though other languages can be used.
- The goal of android project is to create a successful real-world product that improves the mobile experience for end users.
- Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.
- The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008.
- The source code for Android is available under free and open-source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.
- There are many code names of android such as Lollipop, KitKat, Jelly Bean, Ice cream Sandwich, Froyo, Eclair, Donut etc.

Why Android?

Features of Android:

- After learning what is android, let's see the features of android. The important features of android are given below:

1. It is open-source.
2. Anyone can customize the Android Platform.
3. There are a lot of mobile applications that can be chosen by the consumer.
4. It provides many interesting features like weather details, opening screen, live RSS (Really Simple Syndication) feeds etc.
5. It provides support for messaging services (SMS and MMS), web browser, storage (SQLite), connectivity (GSM, CDMA, Blue Tooth, Wi-Fi etc.), media, handset layout etc.

Categories of Android applications:

- There are many android applications in the market. The top categories are:

1. Entertainment
2. Tools
3. Communication
4. Productivity
5. Personalization
6. Music and Audio
7. Social
8. Media and Video
9. Travel and Local

Windows Operation System:

- Microsoft Windows is an operating system that was developed by Microsoft Cooperation. It is one of the most well-known operating systems in the world. It employs a graphical user interface (GUI).
- It enables users to save data, watch videos, run applications, play games, and connect to the Internet.
- The first version of Microsoft Windows is version 1.0, which was released on November 10, 1983. Microsoft Windows is available in various flavors, including Windows XP, Vista, Windows 95, Windows 7, 8, 10, 11, and 12.
- The first business-oriented Windows operating system version was released in 1993, known as Windows NT 3.1.
- Windows launched the next versions, including Windows 3.5, 4/0, and Windows 2000. It developed several versions of Windows XP for home and the commercial environment when it was released in 2001. It was made with standard x86 hardware, including AMD and Intel processors. As a result, it could run on various hardware, including HP, Dell, Sony, and custom-built PCs.

Linux OS:

- Linux is a powerful and flexible family of operating systems that are free to use and share. It was created by a person named Linus Torvalds in 1991.
- What's cool is that anyone can see how the system works because its source code is open for everyone to explore and modify. This openness encourages people from all over the world to work together and make Linux better and better. Since its beginning, Linux has grown into a stable and safe system used in many different things, like computers, smartphones, and big supercomputers.
- It's known for being efficient, meaning it can do a lot of tasks quickly, and it's also cost-effective, which means it doesn't cost a lot to use. As technology keeps moving forward, Linux will keep evolving and staying important in the world of computers.

iOS Operating System:

- iOS is an abbreviation for the iPhone operating system. iOS is the operating system that runs on many of Apple's mobile devices, including the iPhone and iPod Touch.
- It is the world's second most popular mobile OS, trailing only Android.
- It is the basis for three other Apple operating systems: iPadOS, tvOS, and watchOS. It is a part of proprietary software. Some are open source under the Apple Public Source License and other licenses.
- The iOS OS was first released in 2007 for the first-generation iPhone and has since been updated to support more Apple devices, including the iPod Touch and iPad. Apple's App Store had over 2.1 million iOS apps as of March 2018, with 1 million unique to iPads.
- Apple releases a new major version of iOS every year. On September 20, 2021, the current stable version, iOS 15, was released to the public.

Comparison between various Operating System:

Aspect	**Android OS**	**Windows OS**	**Linux OS**	**iOS**
Development Company	Google	Microsoft	Various	Apple
Kernel	Linux	Windows NT	Linux	XNU (Hybrid)
User Interface	Material Design	Modern UI	Varied (Depends on Desktop Environment)	Flat Design
App Ecosystem	Google Play Store	Microsoft Store	Varied (Repositories, Software Center, etc.)	Apple App Store
Programming Language	Java, Kotlin	C#, C++, .Net	Various (C, C++, Python, Etc.)	Objective-C, Swift

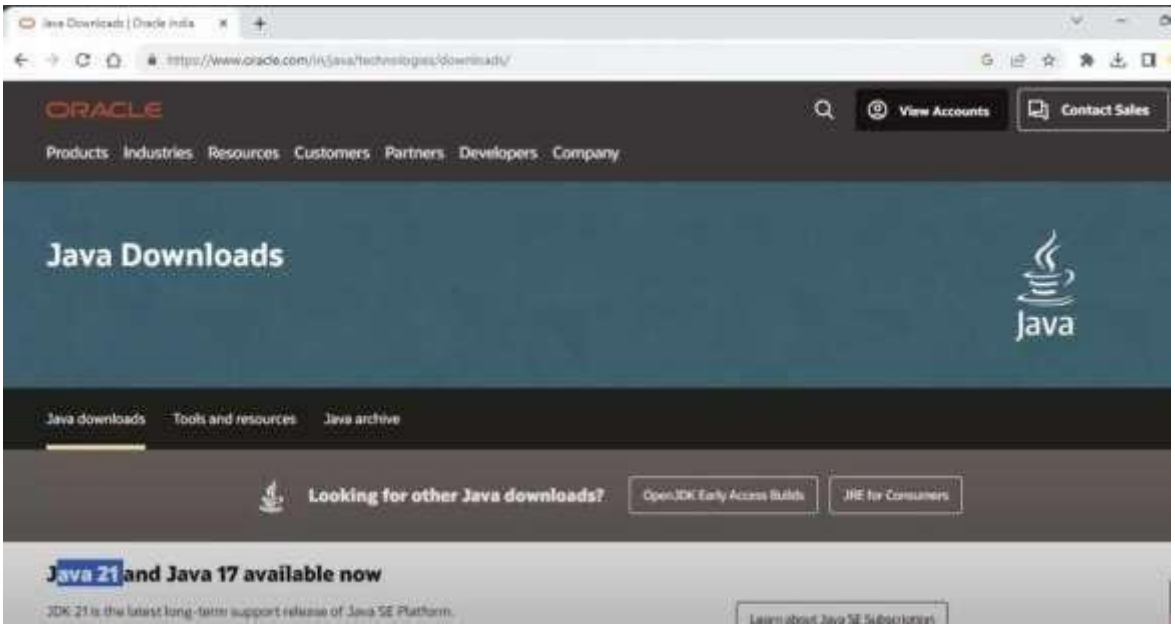
Security	Varied (Depends on OEM and updates)	High (with regular updates)	Varied (Depends on Distribution)	High (with regular updates)
Licensing Model	Open Source (AOSP)	Proprietary (Commercial)	Open Source (Most distributions)	Closed Source (Proprietary)
Development Tools	Android Studio, SDK	Visual Studio, .NET Framework	Various (GCC, Clang, etc.)	Xcode, Swift Playgrounds

PRACTICAL-2

AIM: Install and configure Java Development Kit (JDK), Android Studio and Android SDK.

JDK Installation:

1. Download the JDK from the official site of Oracle "Java Downloads | Oracle India".



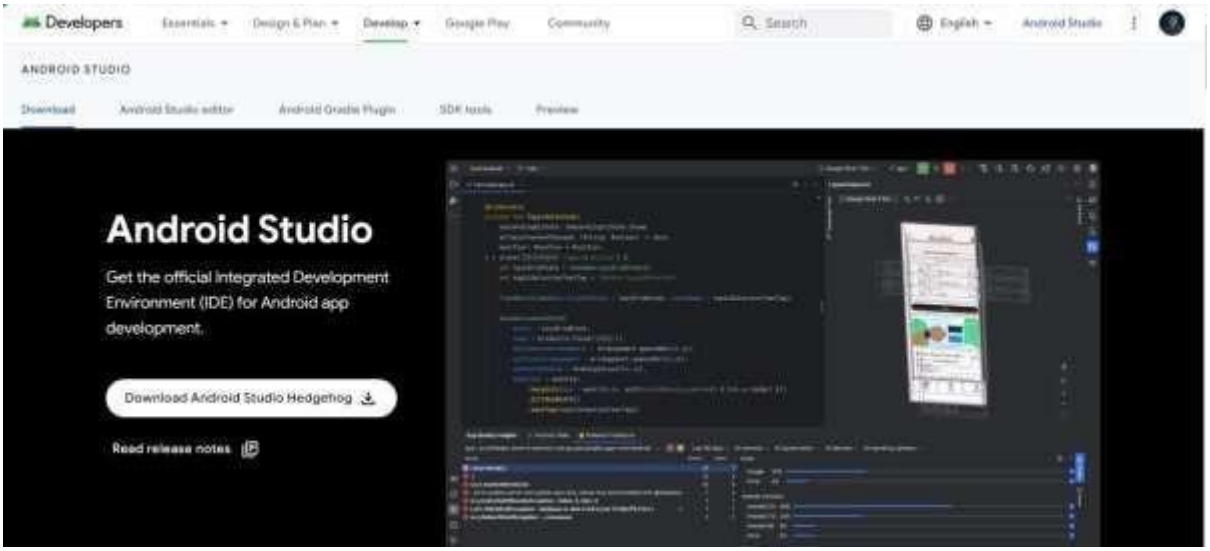
2. Once downloaded open the setup and follow the steps.

3. Choose the destination folder where you want to install the jdk. Click on next this will start the installation process.

4. Once done installing it will show the following pop-up.

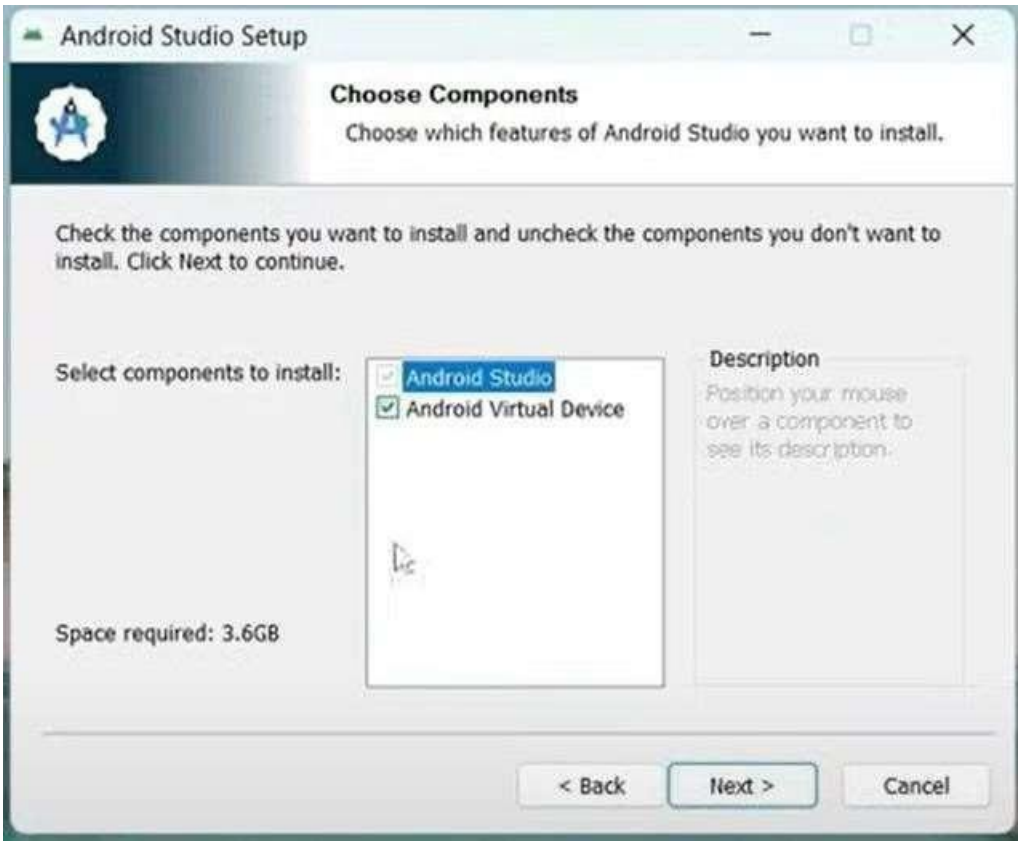
Android Studio Installation:

1. Open the site "Download Android Studio & App Tools - Android Developers" and click on the download now option to start the download for android studio.

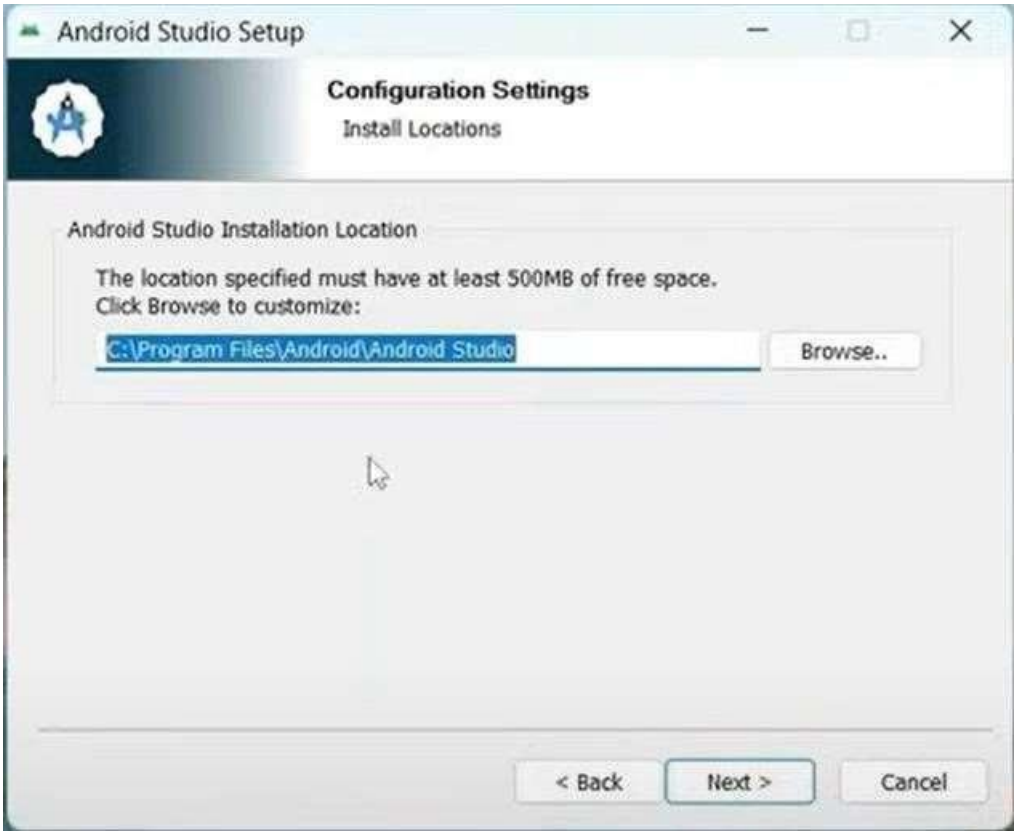


2. Once downloaded open the android studio setup and the following window will popup.

3. Choose the component you want to install in android studio and click on next.



4. Select the installation location and click on next to start the installation.



5. Once done installation you are all-set to open android studio and start developing your android apps.

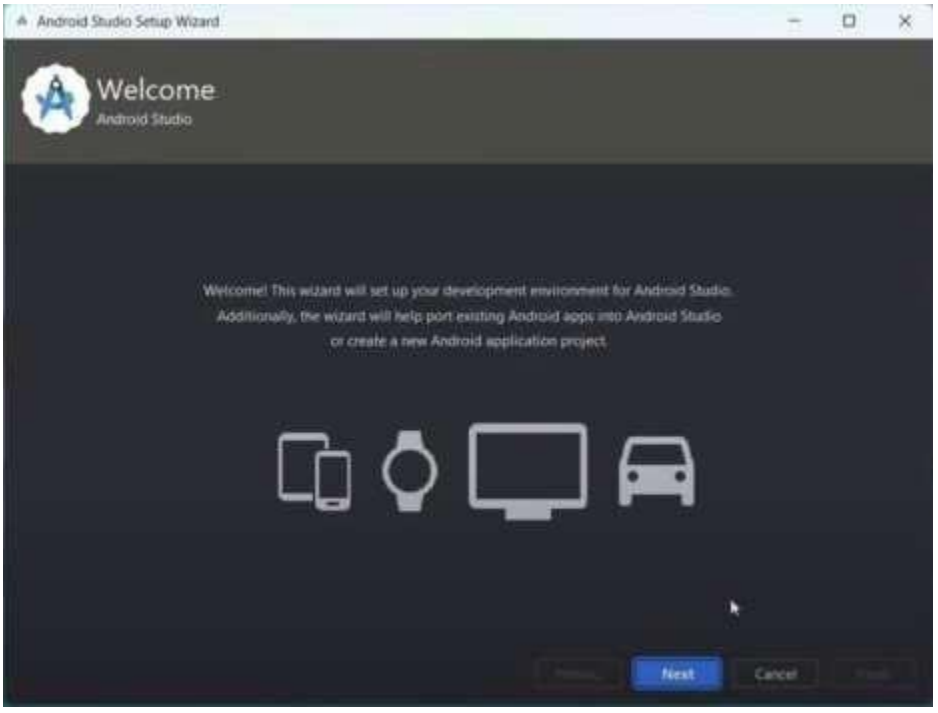
PRACTICAL-3

AIM: Configure android development tools (ADT) plug-in and create android virtual device.

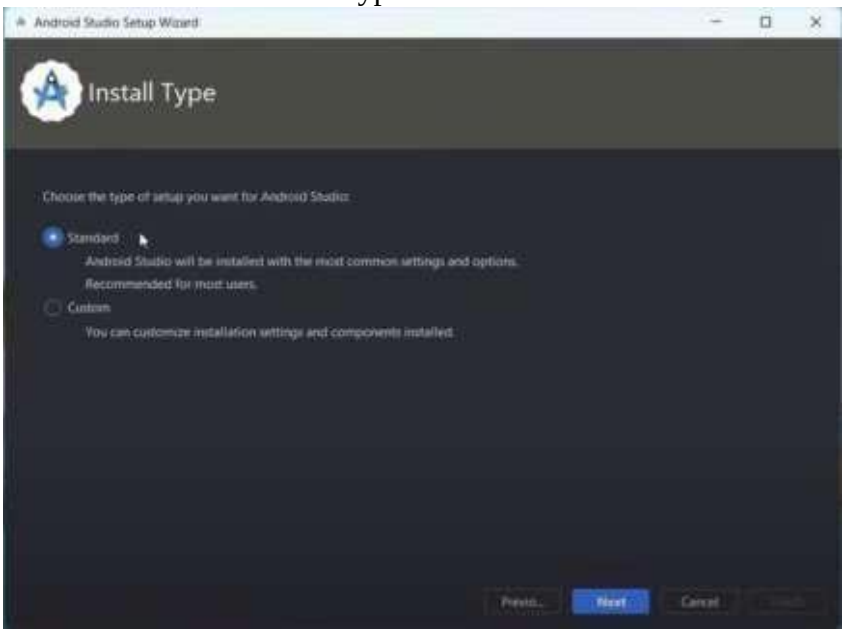
On starting android studio for first time the setup android development tools will open up.

Follow the steps to configure the ADT and create a virtual device:

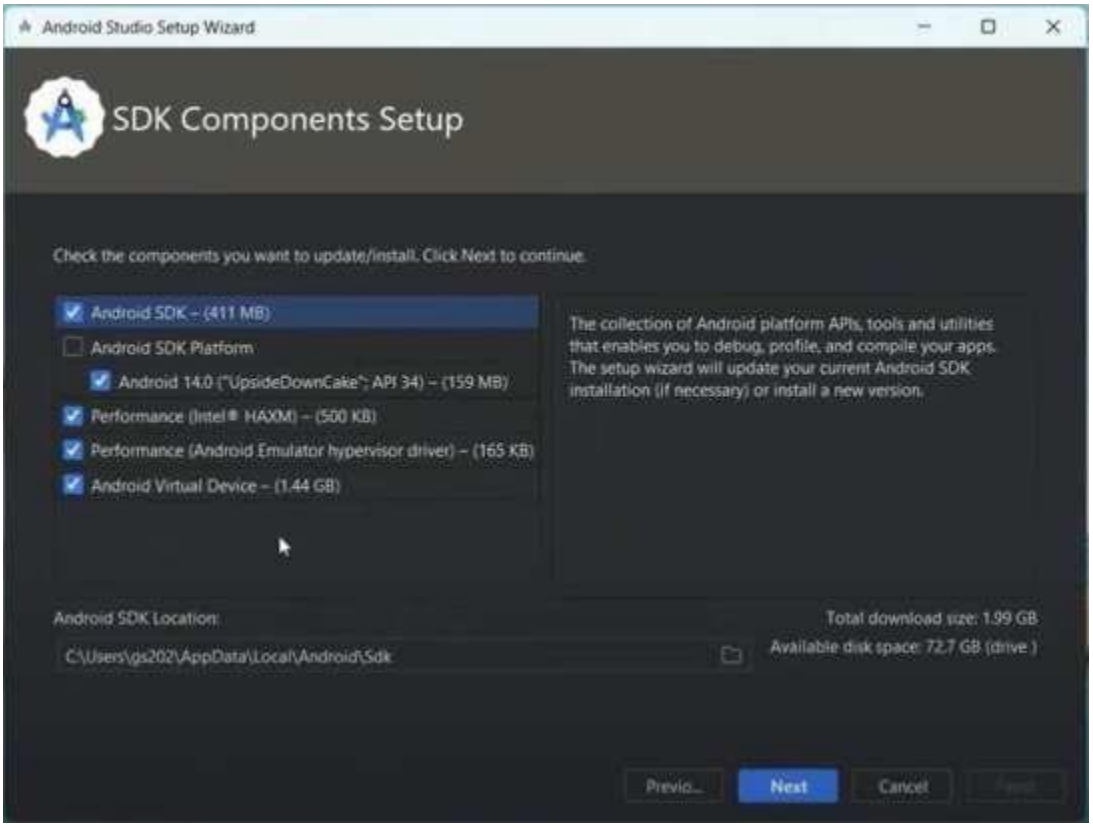
1. This is the first screen you will see when you open android studio for the first time.



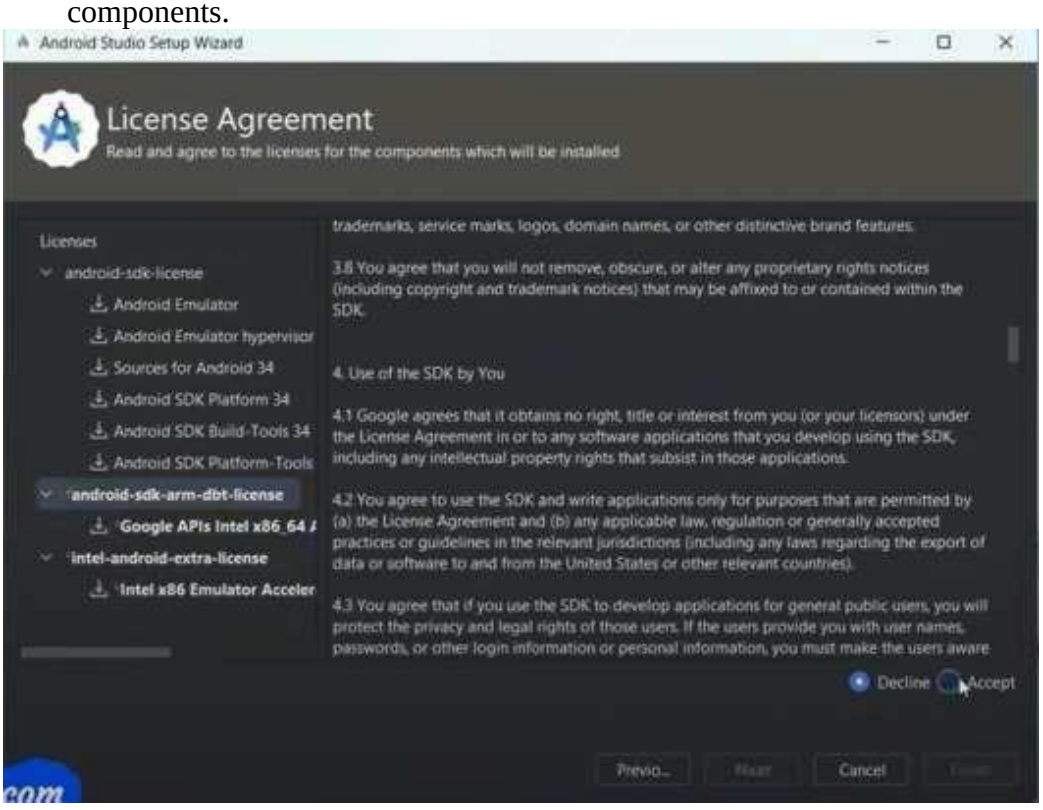
2. Select the installation type for android studio.



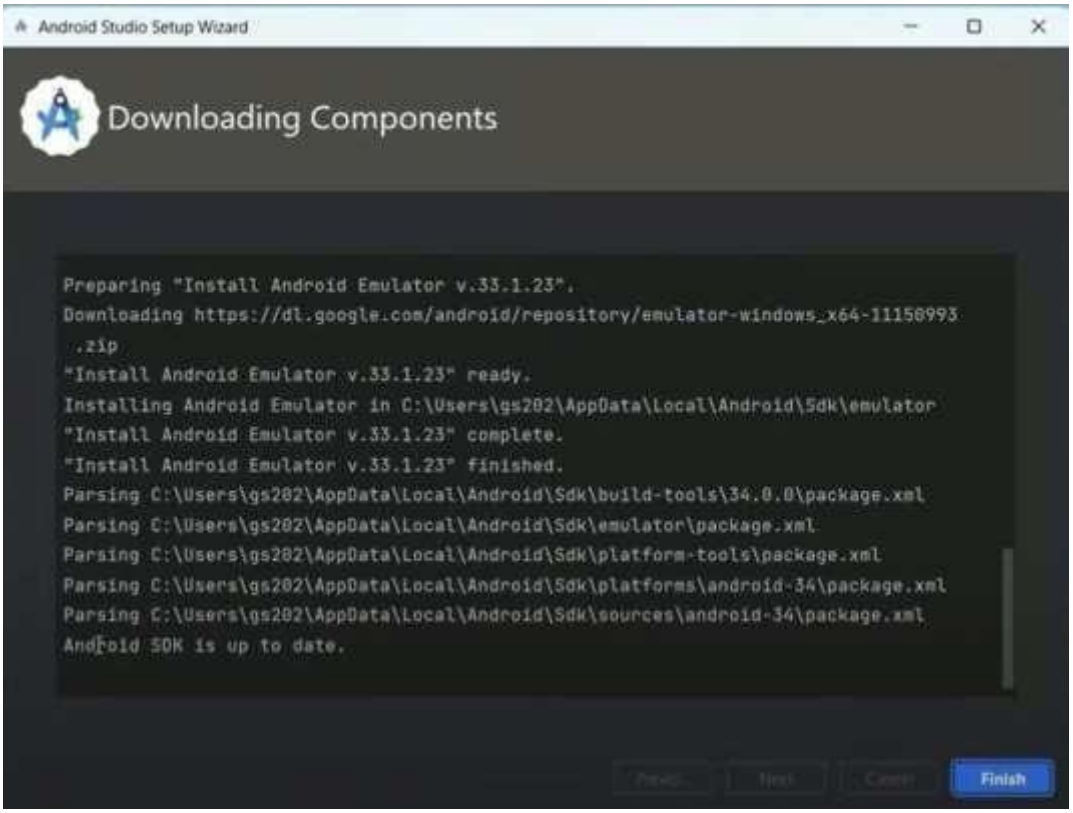
3. Select the components you want to install.



4. Click on next, agree the licenses and click on next this will start the installation for the components.

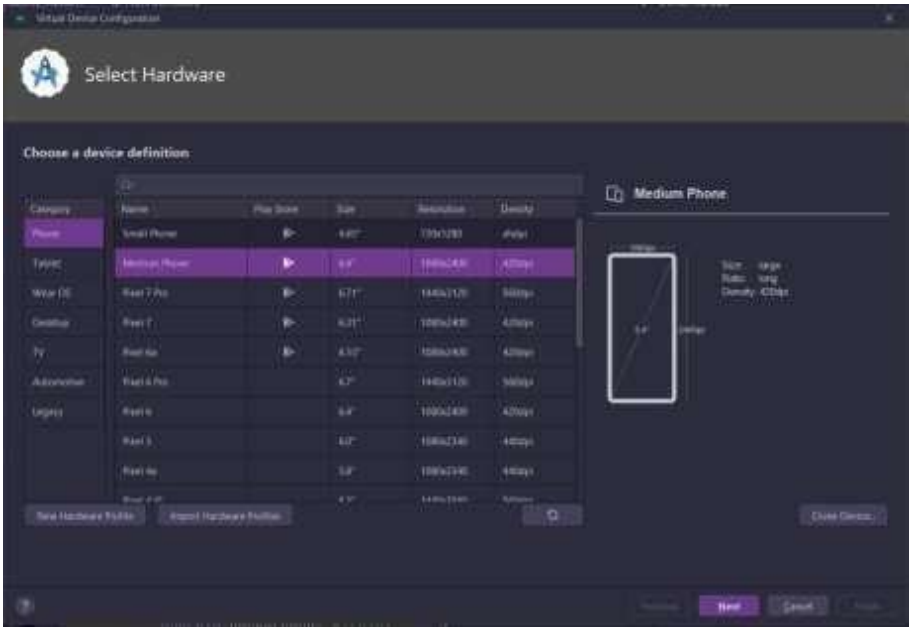


5. Click on finish and you are ready.

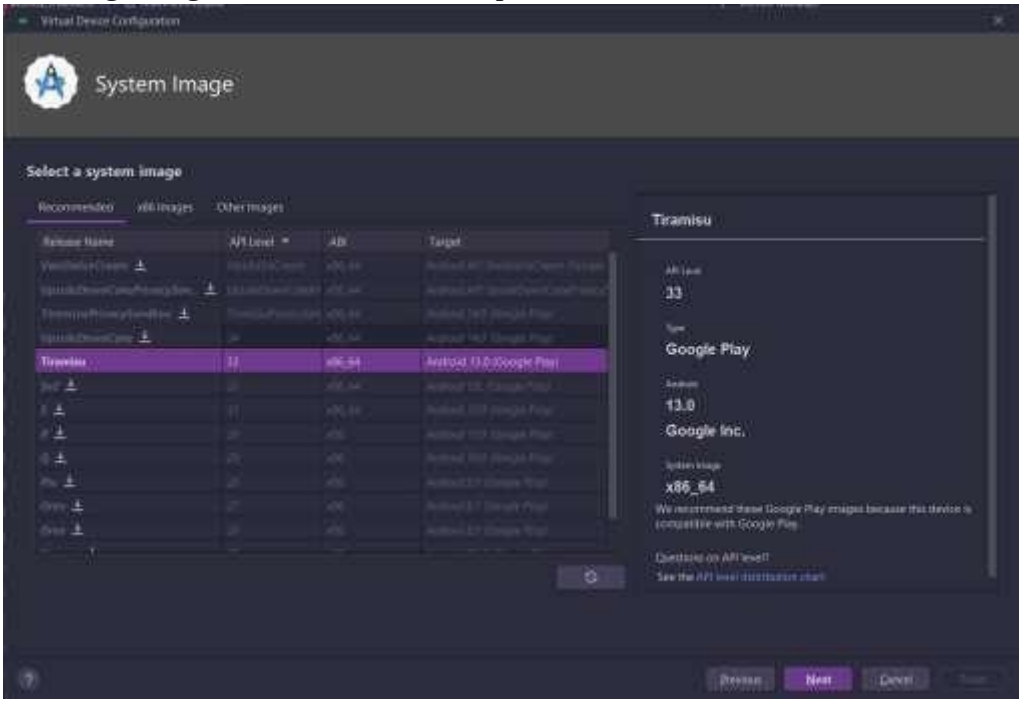


Steps to setup an AVD:

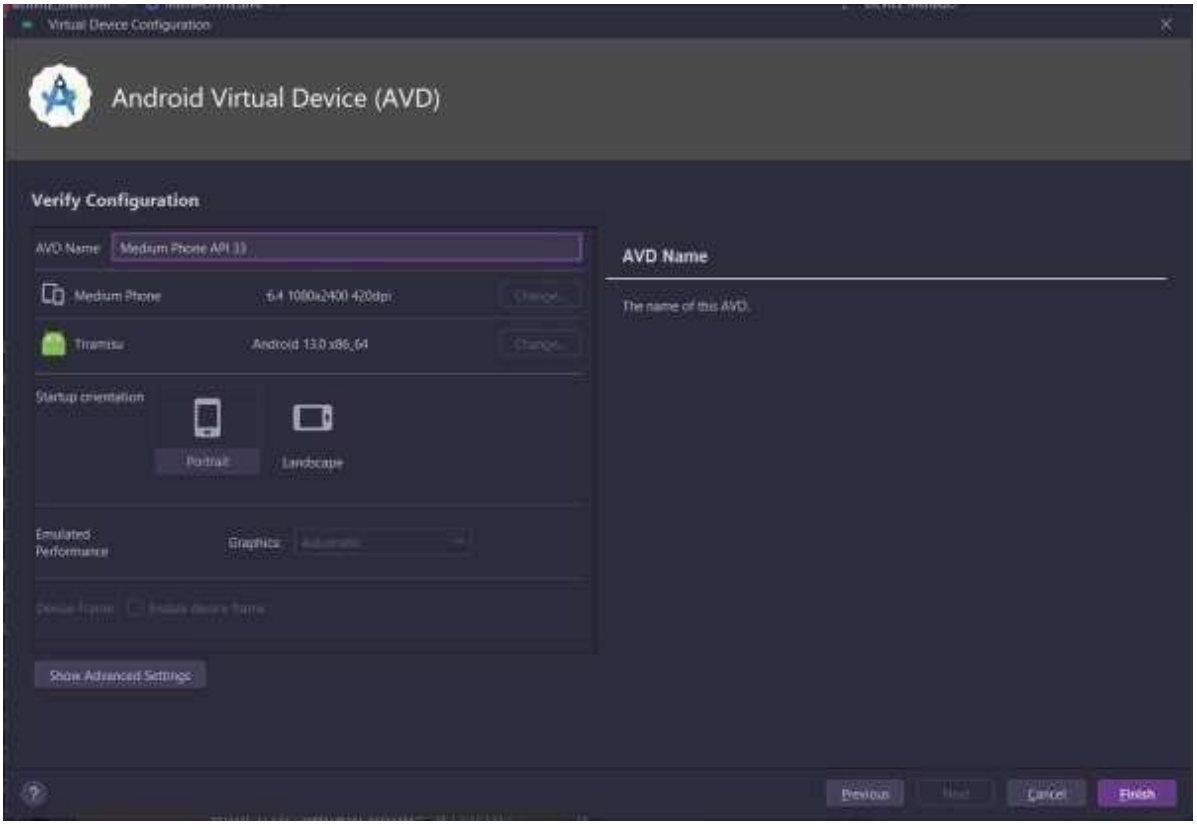
1. In Android Studio, launch the Android Virtual Device Manager by selecting **Tools**, then
   Android, and then **AVD Manager**.
2. In the Your Virtual Devices screen, click **Create Virtual Device**.
3. In the Select Hardware screen, select a phone device, such as Pixel, and then click **Next.**



4. In the System Image screen, click **Download** for one of the recommended system images. Agree to the terms to complete the download.



5. After the download completes, select the system image from the list and click **Next.**
6. On the next screen, leave all the configuration settings unchanged and click **Finish.**



7. In the Your Virtual Devices screen, select the device you just created and click **Launch this AVD in the emulator**.

PRACTICAL-4

AIM: Develop a program to display Hello World on screen.

Code:

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

    <TextView
        android:layout_width="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" />

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

OUTPUT:

PRACTICAL-5

AIM: Develop a program to implement linear layout.

Code:

chess_board.xml code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
        xmlns:android=”http://schemas.android.com/apk/res/android”
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:weightSum="8">

<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
       android:layout_height="match_parent"
       android:layout_weight="1"
       android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

</LinearLayout>
```

```
<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

</LinearLayout>

<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>
```

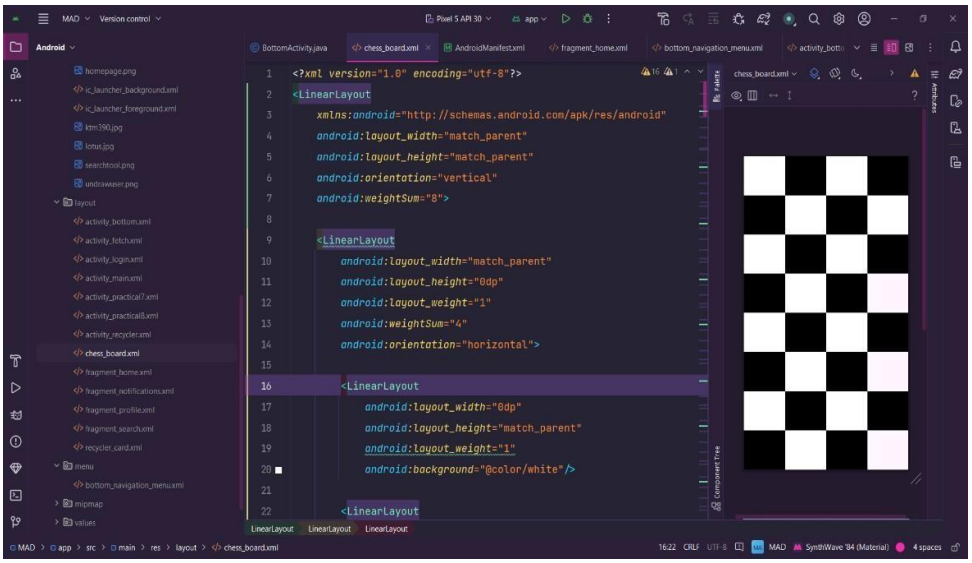
```
<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width=”0dp”
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

</LinearLayout>

<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

</LinearLayout>
```

```
<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1”
        android:background="@color/black"/>

</LinearLayout>

<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>
```

```
<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

</LinearLayout>

<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1”
        android:weightSum="4"
        android:orientation="horizontal">

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

</LinearLayout>
```

```
<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:weightSum="4"
        android:orientation="horizontal”>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/white"/>

<LinearLayout
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="@color/black"/>
</LinearLayout>


</LinearLayout>
```

OUTPUT:



PRACTICAL-6

AIM: Develop a program to implement frame layout, table layout and relative layout.

Code:

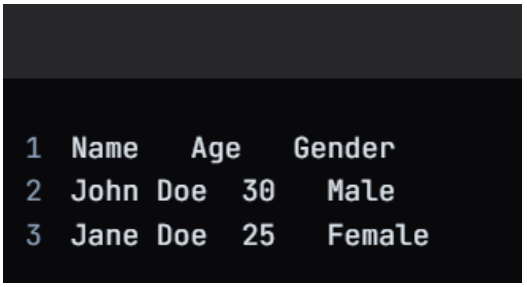
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:padding="16dp"
   tools:context=".MainActivity">

   <!-- FrameLayout -->
   <FrameLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content">

      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="This is a FrameLayout"
         android:layout_gravity="center"
         android:textColor="@android:color/white"
         android:textSize="20sp" />

   </FrameLayout>

   <!-- TableLayout -->
   <TableLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:background="@android:color/holo_blue_light"
      android:layout_marginBottom="16dp">

      <TableRow>

         <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name"
            android:textColor="@android:color/white"
```

```
        android:textSize="20sp"
        android:padding="8dp" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Age"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Gender"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

</TableRow>

<TableRow>

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="John Doe"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="30"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />
```

```
    </TableRow>

    <TableRow>

      <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Jane Doe"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

      <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="25"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

      <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"
        android:textColor="@android:color/white"
        android:textSize="20sp"
        android:padding="8dp" />

    </TableRow>

  </TableLayout>

  <!-- RelativeLayout -->
  <RelativeLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:background="@android:color/holo_green_light">

    <TextView
      android:id="@+id/text_view_relative"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="This is a RelativeLayout"
      android:textColor="@android:color/white"
      android:textSize="20sp"
      android:layout_centerInParent="true" />
```

```
    </RelativeLayout>

</LinearLayout>
```

OUTPUT:



PRACTICAL-7

AIM: Create an application that takes the name from a text box and shows hello message along with the name entered in text box, when the user clicks the OK button.

Code:

Activity.xml Code

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

<EditText
        android:id="@+id/nameEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your name"
        android:layout_margin="16dp" />

<Button
      android:id="@+id/okButton"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="OK"
      android:layout_below="@id/nameEditText"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="16dp" />
```

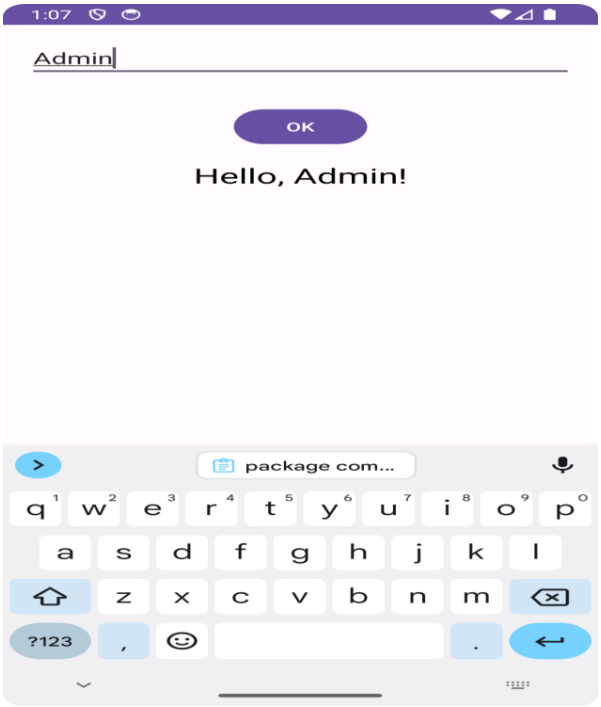
```
<TextView
        android:id="@+id/messageTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        android:textColor="@android:color/black"
        android:layout_below="@id/okButton"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"
        android:visibility="gone" />
</RelativeLayout>
```

Activity.java code:

```
package com.example.myapplication; import
android.os.Bundle;
import android.view.View; import
android.widget.Button; import
android.widget.EditText; import
android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity; public
class MainActivity extends AppCompatActivity {
   private EditText nameEditText;
    private Button okButton;
    private TextView messageTextView;
 @Override
    protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main); nameEditText =
findViewById(R.id.nameEditText); okButton =
findViewById(R.id.okButton);
```

```
 messageTextView = findViewById(R.id.messageTextView);
okButton.setOnClickListener(new View.OnClickListener() {
@Override
 public void onClick(View v) {
            String name = nameEditText.getText().toString().trim(); if
            (!name.isEmpty()) {
               String message = "Hello, " + name + "!";
               messageTextView.setText(message);
               messageTextView.setVisibility(View.VISIBLE);
            }
        }
});
    }
 }
```

OUTPUT:



PRACTICAL-8

AIM: Create a screen that has input boxes for User Name, Password, Address, Gender (radio buttons for male and female), Age (numeric), Date of Birth (Date Picket), State (Spinner) and a Submit button. On clicking the submit button, print all the data below the Submit Button (use any layout).

Code:

Xml code

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

<EditText
        android:id="@+id/editTextUserName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="User Name" />

<EditText
        android:id="@+id/editTextPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextUserName"
        android:layout_marginTop="16dp"
        android:hint="Password"
        android:inputType="textPassword" />

<EditText
       android:id="@+id/editTextAddress"
       android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextPassword"
        android:layout_marginTop="16dp"
        android:hint="Address" />

<RadioGroup
        android:id="@+id/radioGroupGender"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextAddress"
        android:layout_marginTop="16dp">

<RadioButton
         android:id="@+id/radioButtonMale"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="Male" />

<RadioButton
         android:id="@+id/radioButtonFemale"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="Female" />
         </RadioGroup>

<EditText
         android:id="@+id/editTextAge"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:layout_below="@id/radioGroupGender"
```

```
        android:layout_marginTop="16dp"
        android:hint="Age"
        android:inputType="number"/>

<DatePicker
        android:id="@+id/datePicker"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextAge"
        android:layout_marginTop="16dp" />

<Spinner
        android:id="@+id/spinnerState"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/datePicker"
        android:layout_marginTop="16dp" />

<Button
        android:id="@+id/btnSubmit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/spinnerState"
        android:layout_marginTop="16dp"
        android:text="Submit" />

<TextView
        android:id="@+id/textViewOutput"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
        android:layout_below="@id/btnSubmit"
        android:layout_marginTop="16dp"
        android:visibility="gone" />

</RelativeLayout>
```

Java code

```
package com.example.myapplication;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {


private EditText editTextUserName, editTextPassword, editTextAddress, editTextAge;
private RadioGroup radioGroupGender;
private RadioButton radioButtonMale, radioButtonFemale;

private DatePicker datePicker;
private Spinner spinnerState;
private Button btnSubmit;
private TextView textViewOutput;

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

```
editTextUserName = findViewById(R.id.editTextUserName);
editTextPassword = findViewById(R.id.editTextPassword);
editTextAddress = findViewById(R.id.editTextAddress);
editTextAge = findViewById(R.id.editTextAge);
radioGroupGender = findViewById(R.id.radioGroupGender);
radioButtonMale = findViewById(R.id.radioButtonMale);
radioButtonFemale = findViewById(R.id.radioButtonFemale);
datePicker = findViewById(R.id.datePicker);
spinnerState = findViewById(R.id.spinnerState);
btnSubmit = findViewById(R.id.btnSubmit);
textViewOutput = findViewById(R.id.textViewOutput);
btnSubmit.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
        submitForm();
        }
  });
}
private void submitForm() {
        String userName = editTextUserName.getText().toString();
        String password = editTextPassword.getText().toString();
        String address = editTextAddress.getText().toString();
        String gender = radioButtonMale.isChecked() ? "Male" : "Female";
        String age = editTextAge.getText().toString();
        String dateOfBirth = getDateOfBirth();
        String state = spinnerState.getSelectedItem().toString();
        String output = "User Name: " + userName + "\nPassword: " + password +
      "\nAddress: " + address + "\nGender: " + gender + "\nAge: " + age + "\nDate of Birth:
      " + dateOfBirth + "\nState: " + state;
```

```
        textViewOutput.setText(output);
        textViewOutput.setVisibility(View.VISIBLE);

}
private String getDateOfBirth() {
int day = datePicker.getDayOfMonth();
int month = datePicker.getMonth() + 1; // Month is 0-indexed

int year = datePicker.getYear();
return day + "/" + month + "/" + year;
         }
}
```

DateFragmentClass:

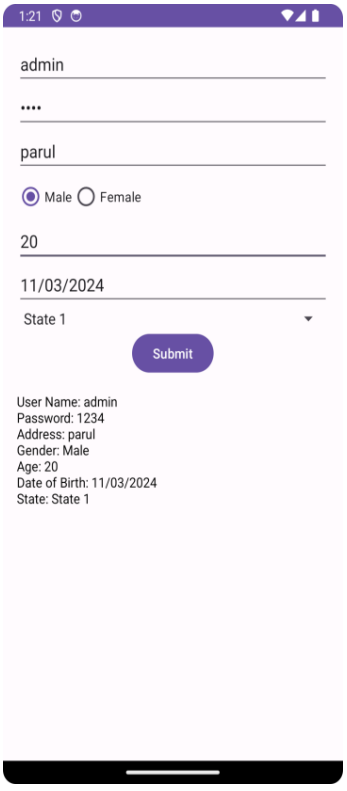
```
package com.example.userdetailsform; import
android.app.DatePickerDialog; import
android.app.Dialog;
import android.os.Bundle;
import android.widget.DatePicker;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.DialogFragment;
import java.util.Calendar;
public class DatePickerFragment extends DialogFragment implements
DatePickerDialog.OnDateSetListener {

    @NonNull
    @Override
    public Dialog onCreateDialog(@Nullable Bundle savedInstanceState) { final
        Calendar c = Calendar.getInstance();
        int year = c.get(Calendar.YEAR);
        int month = c.get(Calendar.MONTH);
        int day = c.get(Calendar.DAY_OF_MONTH);
```

```
        return new DatePickerDialog(getActivity(), this, year, month, day);
    }
@Override
public void onDateSet(DatePicker view, int year, int month, int dayOfMonth)
{
    MainActivity activity = (MainActivity) getActivity(); activity.setDate(year,
    month, dayOfMonth);
    }
}
```

Strings.xml:

```
<string-array name="states_array">
    <item>State 1</item>
    <item>State 2</item>
    <item>State 3</item>
</string-array>
```

OUTPUT:



PRACTICAL-9

AIM: Design an android application to create page using Intent and one Button and pass the Values from one Activity to second Activity.

Code:

Xml code:

```
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout

        xmlns:android="http://schemas.android.com/apk/res/android"

        xmlns:tools="http://schemas.android.com/tools"
        android:layout_width="match_parent"
        android:layout_height="match_parent"

        tools:context=".MainActivity">


<Button

        android:id="@+id/button"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Go to Second Activity"

        android:layout_centerInParent="true" />

</RelativeLayout>
```

Java Code:

```
package com.example.intentexample;
import android.content.Intent;

import android.os.Bundle;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {
    @Override

    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        Intent intent = getIntent();
        String message = intent.getStringExtra("message");

        TextView textView = findViewById(R.id.textView);
        textView.setText(message);
    }
}
```

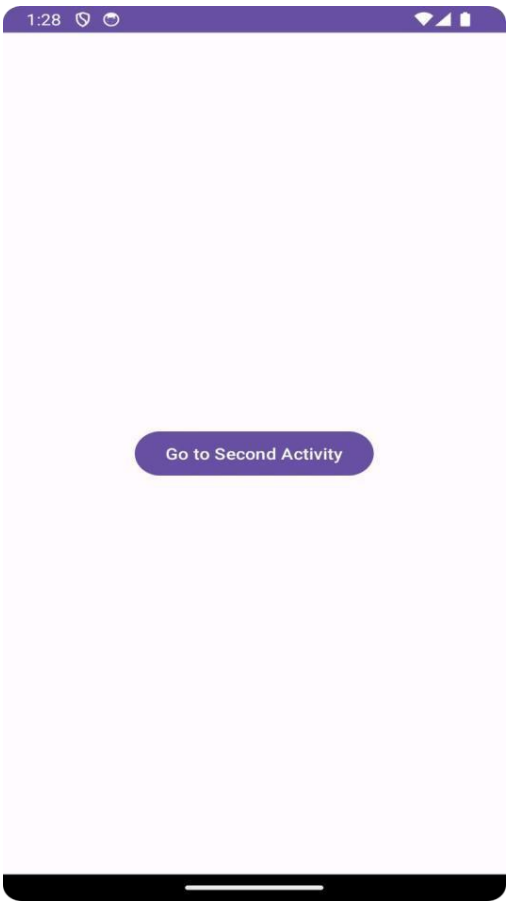
Second XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        xmlns:tools="http://schemas.android.com/tools"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".SecondActivity">

<TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        android:textColor="@android:color/black"
        android:layout_centerInParent="true" />
</RelativeLayout>
```

Java Code:

```
package com.example.intentexample;

import android.content.Intent;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import   androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
@Override
   protected void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout.activity_main);
   Button button = findViewById(R.id.button);
   button.setOnClickListener(new View.OnClickListener() {
   @Override
         public void onClick(View v) {
         String message = "Hello from MainActivity!";
         Intent intent = new Intent(MainActivity.this, SecondActivity.class);
         intent.putExtra("message", message);
         startActivity(intent);
         }
});
}
}
```

OUTPUT:



PRACTICAL-10

AIM: Design an android application Send SMS using Intent.

Code:

Activity.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:orientation="vertical" android:layout_width="match_parent"
   android:layout_height="match_parent">
   <TextView
      android:id="@+id/fstTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="100dp"
      android:layout_marginTop="150dp"
      android:text="Mobile No" />
   <EditText
      android:id="@+id/mblTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="100dp"
      android:ems="10"/>

   <TextView
      android:id="@+id/secTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Message"
      android:layout_marginLeft="100dp" />
   <EditText
      android:id="@+id/msgTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="100dp"
      android:ems="10" />
   <Button
      android:id="@+id/btnSend"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="100dp"
      android:text="Send SMS" />
</LinearLayout>
```

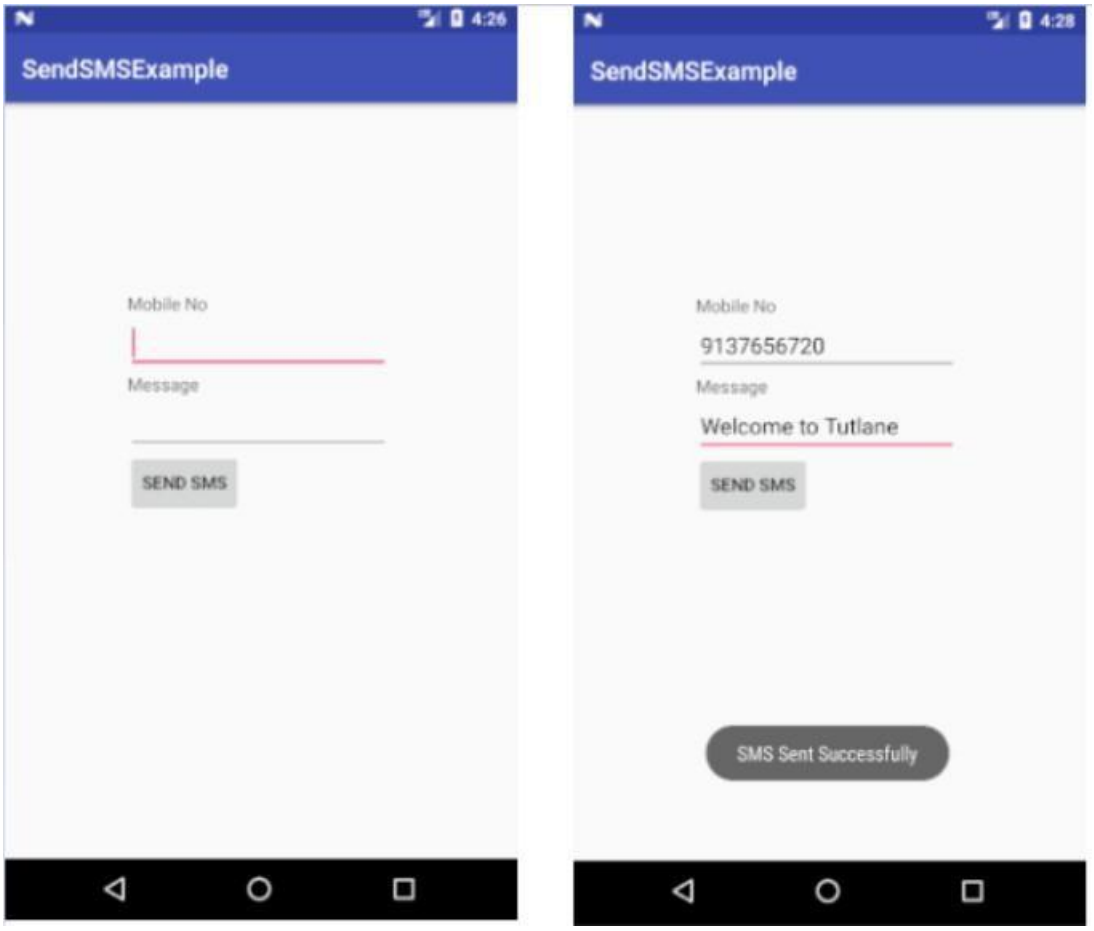
Mainactivity.java:

```
package com.tutlane.sendsmsexample;
import android.content.Intent;
import android.net.Uri;
import android.provider.Telephony;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

   private EditText txtMobile;
   private EditText txtMessage;
   private Button btnSms;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      txtMobile = (EditText)findViewById(R.id.mblTxt);
      txtMessage = (EditText)findViewById(R.id.msgTxt);
      btnSms = (Button)findViewById(R.id.btnSend);
      btnSms.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            try{
               SmsManager smgr = SmsManager.getDefault();

smgr.sendTextMessage(txtMobile.getText().toString(),null,txtMessage.getText().toString(),n
ull,null);
               Toast.makeText(MainActivity.this, "SMS Sent Successfully",
Toast.LENGTH_SHORT).show();
            }
            catch (Exception e){
               Toast.makeText(MainActivity.this, "SMS Failed to Send, Please try again",
Toast.LENGTH_SHORT).show();
            }
         }
      });
   }
}
```

Androidmanifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.tutlane.sendsmsexample">
   <uses-permission android:name="android.permission.SEND_SMS"/>
   <application
      android:allowBackup="true"
      android:icon="@mipmap/ic_launcher"
      android:label="@string/app_name"
      android:roundIcon="@mipmap/ic_launcher_round"
      android:supportsRtl="true"
      android:theme="@style/AppTheme">
      <activity android:name=".MainActivity">
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
   </application>
</manifest>
```

OUTPUT:



PRACTICAL-11

AIM: Create an android application using Fragments.

Code:

Activity_main.xml

```
<?xml version = "1.0" encoding = "utf-8"?>
<LinearLayout xmlns:android = "http://schemas.android.com/apk/res/android"
  xmlns:app = "http://schemas.android.com/apk/res-auto"
  xmlns:tools = "http://schemas.android.com/tools"
  android:layout_width = "match_parent"
  android:layout_height = "match_parent"
  tools:context = ".MainActivity"
  android:orientation = "vertical">
  <Button
    android:id = "@+id/fragment1"
    android:layout_width = "wrap_content"
    android:layout_height = "wrap_content"
    android:layout_alignParentTop = "true"
    android:layout_centerHorizontal = "true"
    android:layout_marginTop = "27dp"
    android:text = "fragment1"/>
  <Button
    android:id = "@+id/fragment2"
    android:layout_width = "wrap_content"
    android:layout_height = "wrap_content"
    android:layout_alignParentTop = "true"
    android:layout_centerHorizontal = "true"
    android:layout_marginTop = "27dp"
    android:text = "fragment2"/>
  <LinearLayout
    android:id = "@+id/layout"
    android:layout_width = "wrap_content"
    android:layout_height = "wrap_content"
    android:orientation = "vertical">
  </LinearLayout>
</LinearLayout>
```

Mainactivity.java

```
package com.example.myapplication;
import android.os.Build;
import android.os.Bundle;
import android.support.annotation.RequiresApi;
import android.support.v4.app.FragmentManager;
import android.support.v4.app.FragmentTransaction;
```

```
import android.support.v7.app.AppCompatActivity;
import android.view.View;

public class MainActivity extends AppCompatActivity {
  @RequiresApi(api = Build.VERSION_CODES.LOLLIPOP)
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    final android.support.v4.app.Fragment first = new FirstFragment();
    final android.support.v4.app.Fragment second = new SecondFragment();
    findViewById(R.id.fragment1).setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        android.support.v4.app.FragmentManager fm = getSupportFragmentManager();
        android.support.v4.app.FragmentTransaction fragmentTransaction =
fm.beginTransaction();
        fragmentTransaction.replace(R.id.layout, first);
        fragmentTransaction.commit();
      }
    });
    findViewById(R.id.fragment2).setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        FragmentManager fm = getSupportFragmentManager();
        FragmentTransaction fragmentTransaction = fm.beginTransaction();
        fragmentTransaction.replace(R.id.layout, second);
        fragmentTransaction.commit();
      }
    });
  }
}
```

FirstFragment.java

```
package com.example.myapplication;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.support.annotation.NonNull;
import android.support.annotation.Nullable;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;

@SuppressLint("ValidFragment")
public class FirstFragment extends Fragment {
```

```
  TextView textView;
  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
container, @Nullable Bundle savedInstanceState) {
    View view = inflater.inflate(R.layout.fragment, container, false);
    textView = view.findViewById(R.id.text);
    textView.setText("first");
    return view;
  }
}
```

SecondFragment.java

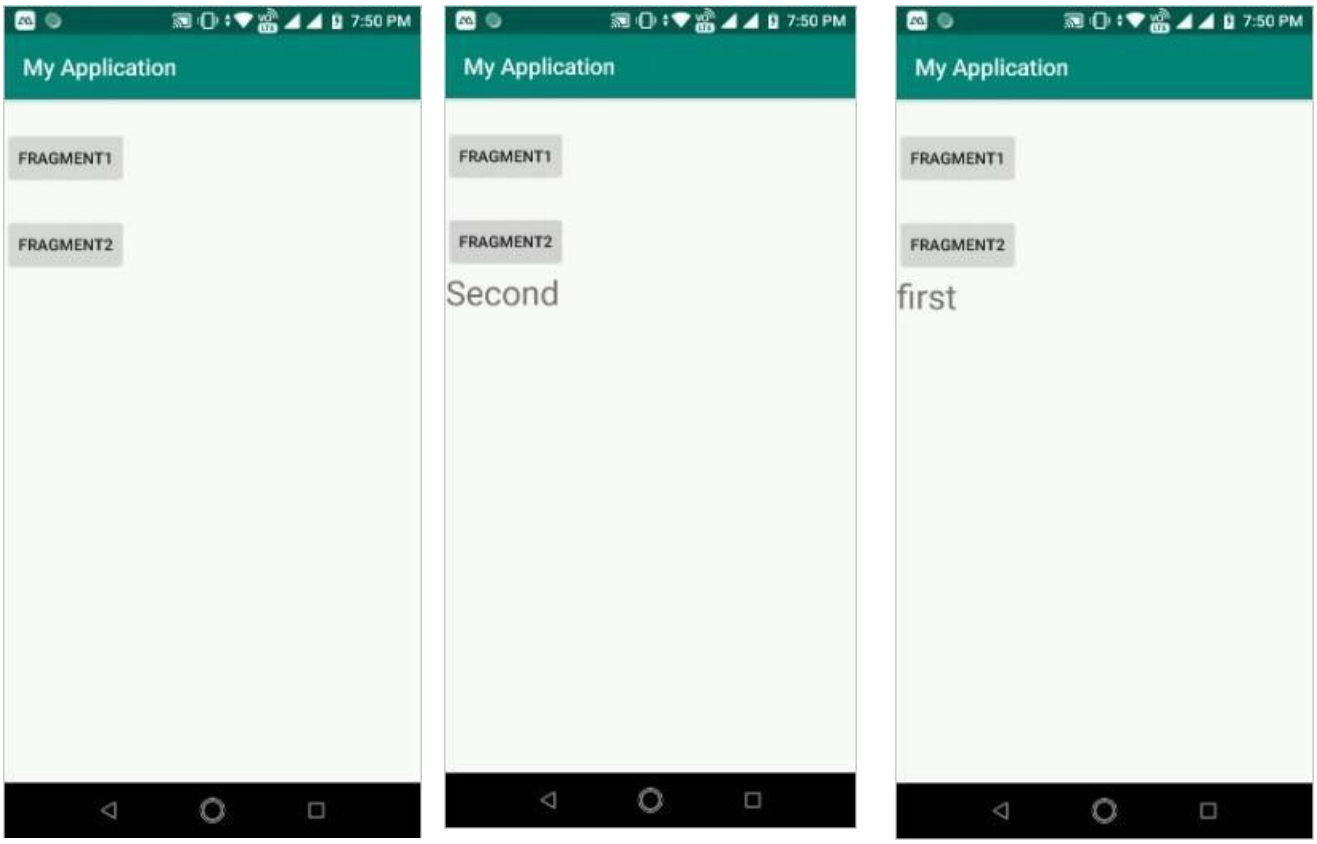
```
package com.example.myapplication;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.support.annotation.NonNull;
import android.support.annotation.Nullable;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;

public class SecondFragment extends Fragment {
  TextView textView;
  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
container, @Nullable Bundle savedInstanceState) {
    View view = inflater.inflate(R.layout.fragment, container, false);
    textView = view.findViewById(R.id.text);
    textView.setText("Second");
    return view;
  }
}
```

Fragment.xml

```
<?xml version = "1.0" encoding = "utf-8"?>
<LinearLayout
  xmlns:android = "http://schemas.android.com/apk/res/android"
  android:layout_width = "match_parent"
  android:gravity = "center"
  android:layout_height = "match_parent">
  <TextView
    android:id = "@+id/text"
    android:textSize = "30sp"
```

```
    android:layout_width = "match_parent"
    android:layout_height = "match_parent" />
</LinearLayout>
```

OUTPUT:



PRACTICAL-12

AIM: Design an android application Using Radio button.

Code:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">
  <RadioGroup
    android:id="@+id/radioGender"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true">
  <RadioButton
    android:id="@+id/radioMale"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/radioMale"
    android:checked="true" />
  <RadioButton
    android:id="@+id/radioFemale"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/radioFemale" />
  </RadioGroup>
  <Button
    android:layout_below="@id/radioGender"
    android:id="@+id/btnDisplay"
    android:layout_centerInParent="true"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/btnDisplay" />
</RelativeLayout>
```

Mainactivity.java

```
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```
import android.widget.RadioButton;
import  android.widget.RadioGroup;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  RadioGroup radioGroup;
  RadioButton radioButton;
  Button button;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    addListenerButton();
  }
  private void addListenerButton() {
    radioGroup = findViewById(R.id.radioGender);
    button = findViewById(R.id.btnDisplay);
    button.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        int selectedID = radioGroup.getCheckedRadioButtonId();
        radioButton = findViewById(selectedID);
        Toast.makeText(MainActivity.this,
radioButton.getText(),Toast.LENGTH_SHORT).show();
      }
    });
  }
}
```

Strings.xml

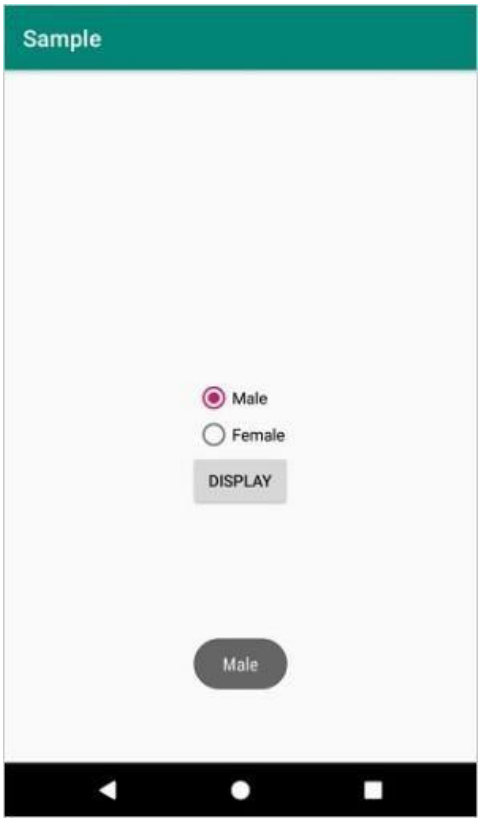
```
<resources>
  <string name="app_name">ample</string>
  <string name="radioMale">Male</string>
  <string name="radioFemale">Female</string>
  <string name="btnDisplay">Display</string>
</resources>
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="app.com.sample">
  <application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
```

```
    android:supportsRtl="true"
    android:theme="@style/AppTheme">
    <activity android:name=".MainActivity">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>
</manifest>
```

OUTPUT:



PRACTICAL-13

AIM: Design an android application for menu.

Code:

Xml code:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
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">

<FrameLayout
        android:id="@+id/frame_layout"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />


<com.google.android.material.bottomnavigation.BottomNavigationView
android:id="@+id/bottomNavigationView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:background="@android:color/transparent"
app:labelVisibilityMode="labeled"
android:layout_gravity="bottom"
app:menu="@menu/bottom_menu" />

</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

Java code:

```
package com.example.madp3;
import android.os.Bundle;

import android.view.MenuItem;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;
import com.google.android.material.bottomnavigation.BottomNavigationView;
```

```
public class MainActivity extends AppCompatActivity implements
BottomNavigationView.OnNavigationItemSelectedListener BottomNavigationView
bottomNavigationView;
  @Override
  protected void onCreate(Bundle savedInstanceState)
    {
  super.onCreate(savedInstanceState);
  setContentView(R.layout.activity_main);
   bottomNavigationView  =findViewById(R.id.bottomNavigationView);
   bottomNavigationView.setOnNavigationItemSelectedListener(this);
   bottomNavigationView.setSelectedItemId(R.id.home);
    }
   @Override
   public boolean
    onNavigationItemSelected(@NonNull MenuItem item)
    {
        if (item.getItemId() == R.id.home) { replaceFragment(new
            HomeFragment());
        } else if (item.getItemId() == R.id.categories) { replaceFragment(new
            CategoriesFragment());
        } else if (item.getItemId() == R.id.subscription) { replaceFragment(new
            SubscriptionFragment());
        } else if (item.getItemId() == R.id.account) { replaceFragment(new
            AccountFragment());
        }
        return true;
    }
    private  void replaceFragment(Fragment fragment) {
        FragmentManager fragmentManager = getSupportFragmentManager();
        FragmentTransaction fragmentTransaction =
fragmentManager.beginTransaction();
        fragmentTransaction.replace(R.id.frame_layout, fragment);
        fragmentTransaction.commit();
    }
}
```

Button_Menu.xml Code:

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">

    <item
        android:id="@+id/home"
        android:title="Home"
        android:icon="@drawable/ic_home"/>
```

```
    <item
        android:id="@+id/categories" android:title="Categories"
        android:icon="@drawable/baseline_category_24"
        />
    <item
        android:id="@+id/subscription" android:title="Subscription"
        android:icon="@drawable/ic_baseline_subscriptions_24"  />
    <item
        android:id="@+id/account" android:title="Account"
        android:icon="@drawable/baseline_person_24" />

 </menu>
```

FRAGMENT_HOME.XML CODE:

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent" android:layout_height="match_parent"

tools:context=".HomeFragment">
    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Home"
        android:gravity="center"
        android:textSize="30sp" />

</FrameLayout>
```

FRAGMENT_CATEGORIES.XML CODE:

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" android:paddingBottom="60dp">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Categories"
```

```
        android:gravity="center"
        android:textSize="30sp" />

</FrameLayout>
```

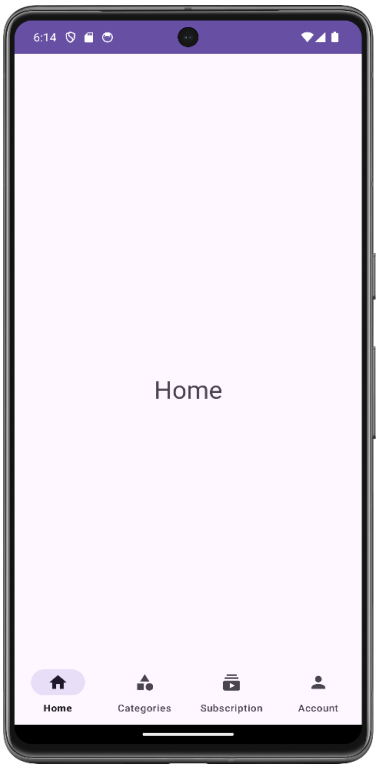
FRAGMENT_SUBSCRIPTION.XML:

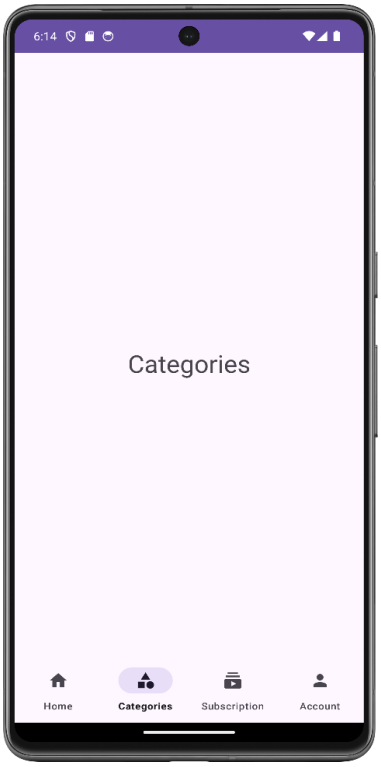
```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent" android:layout_height="match_parent"
tools:context=".HomeFragment">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Subscription"
        android:gravity="center"
        android:layout_gravity="center"
        android:textSize="40sp"/>

</FrameLayout>
```

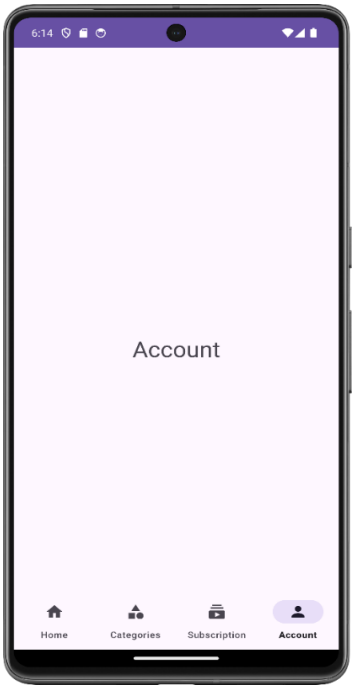
FRAGMENT_ACCOUNT.XML CODE:

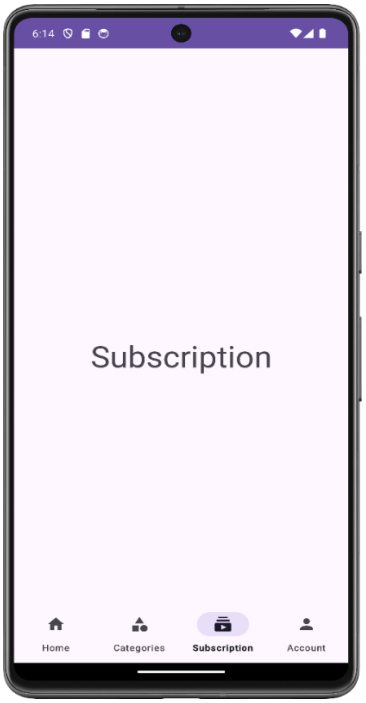
```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Account"
        android:gravity="center"
        android:textSize="30sp" />

</FrameLayout>
```

OUTPUT:


6:14
Home
Home
Categories
Subscription
Account


6:14
Categories
Home
Categories
Subscription
Account


6:14
Account
Home
Categories
Subscription
Account


6:14
Subscription
Home
Categories
Subscription
Account

PRACTICAL-14

AIM: Create a user registration application that stores the user details in a database table.

Code:

activity_sign_up.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
        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:orientation="vertical"
        android:layout_height="match_parent"
        tools:context=".SingUpActivity">

<TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="New User, SignUp!!"
        android:textSize="22sp"
        android:layout_gravity="center"
        android:layout_marginTop="40dp"
        android:textStyle="bold|italic"
        android:textColor="@color/black"/>

<EditText
        android:id="@+id/editTextEmail"
        android:layout_margin="8dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Email" />

<EditText
        android:id="@+id/editTextPassword"
        android:layout_margin="8dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Password"
        android:inputType="textPassword" />

<EditText
        android:id="@+id/editTextPhone"
```

```
        android:layout_margin="8dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Phone Number"
        android:inputType="phone" />

<EditText
        android:id="@+id/editTextAddress"
        android:layout_margin="8dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Address" />

<Button
        android:id="@+id/buttonCreateAccount"
        android:layout_gravity="center"
        android:layout_marginTop="20dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Create Account" />

</LinearLayout>
```

SignUpActivity.java

```
package com.nehatripz.myandroid262;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import com.google.android.gms.tasks.OnCompleteListener;
import com.google.android.gms.tasks.Task;
import com.google.firebase.auth.FirebaseAuth;
import com.google.firebase.auth.FirebaseUser;
import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.FirebaseDatabase;

public class SingUpActivity extends AppCompatActivity {

EditText editTextEmail, editTextPassword, editTextPhone, editTextAddress;
Button buttonCreateAccount;
```

```
FirebaseAuth firebaseAuth; DatabaseReference databaseReference;

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

        firebaseAuth = FirebaseAuth.getInstance();
        databaseReference = FirebaseDatabase.getInstance().getReference("Users");

        editTextEmail = findViewById(R.id.editTextEmail);
        editTextPassword = findViewById(R.id.editTextPassword);
        editTextPhone = findViewById(R.id.editTextPhone);
        editTextAddress = findViewById(R.id.editTextAddress);
        buttonCreateAccount = findViewById(R.id.buttonCreateAccount);

        buttonCreateAccount.setOnClickListener(new View.OnClickListener() {
                @Override
                        public void onClick(View view) {
                        createAccount();
                        }
                });
        }

public void createAccount() {
        String email = editTextEmail.getText().toString().trim();
        String password = editTextPassword.getText().toString().trim();
        String phone = editTextPhone.getText().toString().trim();
        String address = editTextAddress.getText().toString().trim();

firebaseAuth.createUserWithEmailAndPassword(email,  password)
        .addOnCompleteListener(this, new OnCompleteListener() {
        @Override
        public void onComplete(@NonNull Task task) {
        if (task.isSuccessful()) {
                FirebaseUser user = firebaseAuth.getCurrentUser();
        if (user != null) {
                String userId = user.getUid();
                User newUser = new User(userId, email, phone, address);
                databaseReference.child(userId).setValue(newUser);

        Toast.makeText(SingUpActivity.this, "Account created successfully",
        Toast.LENGTH_SHORT).show();
        startActivity(new Intent(SingUpActivity.this, MainActivity.class));
        finish();
        }
```

```
            } else {
                    Toast.makeText(SingUpActivity.this, "Failed", Toast.LENGTH_SHORT).show();
                  }
            }
          });
}
public static class User {
String userId;
String email;
String phone;
String address;

public User(String userId, String email, String phone, String address) {
          this.userId = userId;
          this.email = email; this.phone = phone; this.address = address;
          }
          public String getUserId() {
                    return userId;
          }
          public String getEmail() {
                    return email;
          }
          public String getPhone() {
                    return phone;
          }
          public String getAddress() {
                    return address;
          }
        }
}
```

OUTPUT: