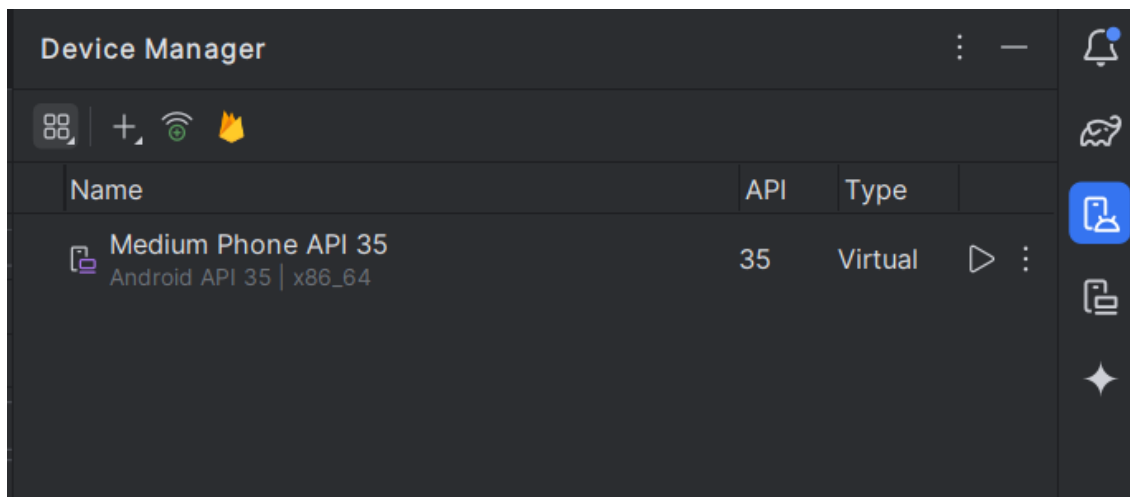# Question 1

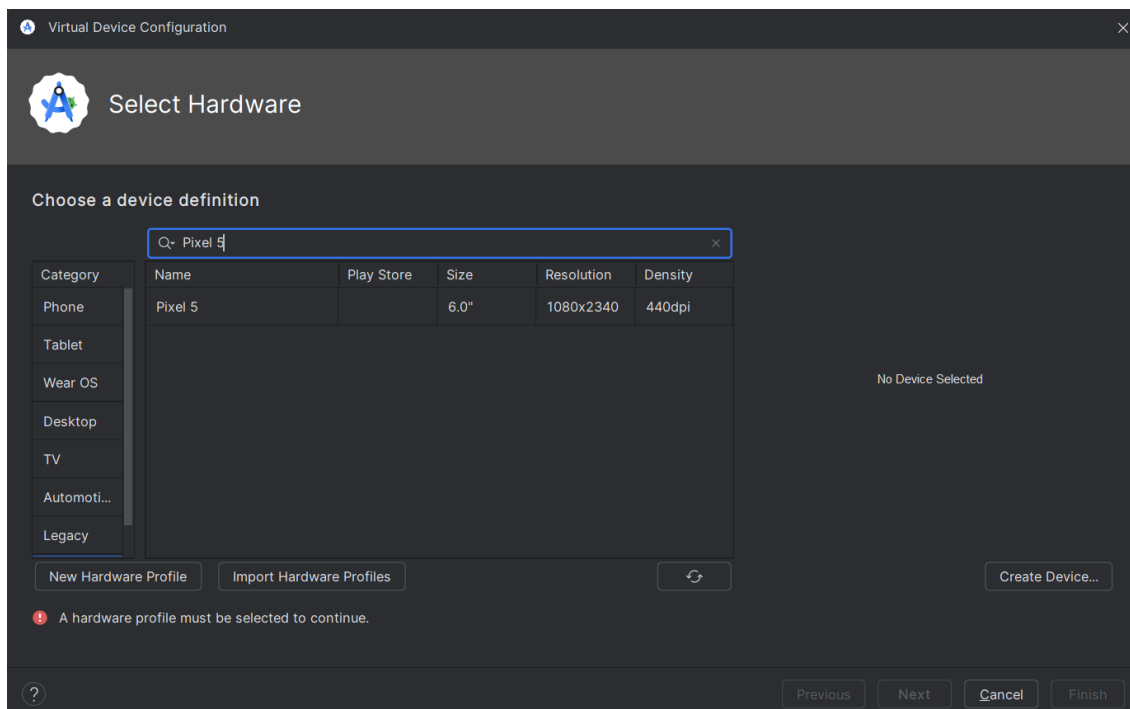Create an Android Virtual Device for Pixel 5 device.
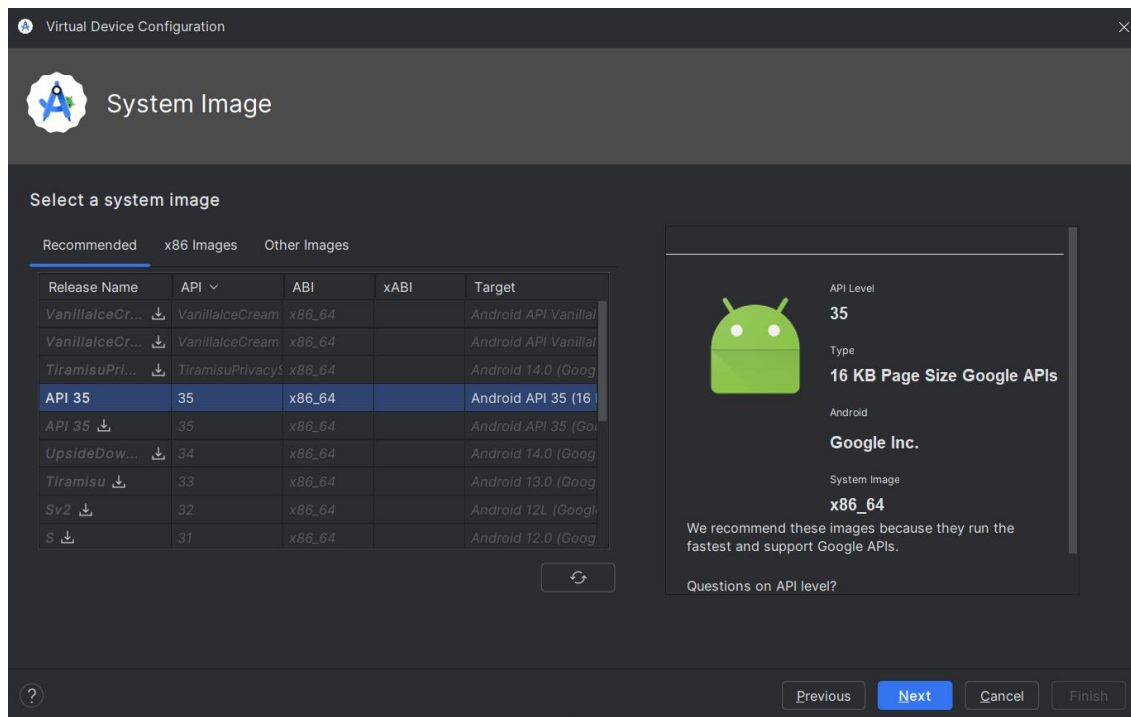
Answer

- Steps :

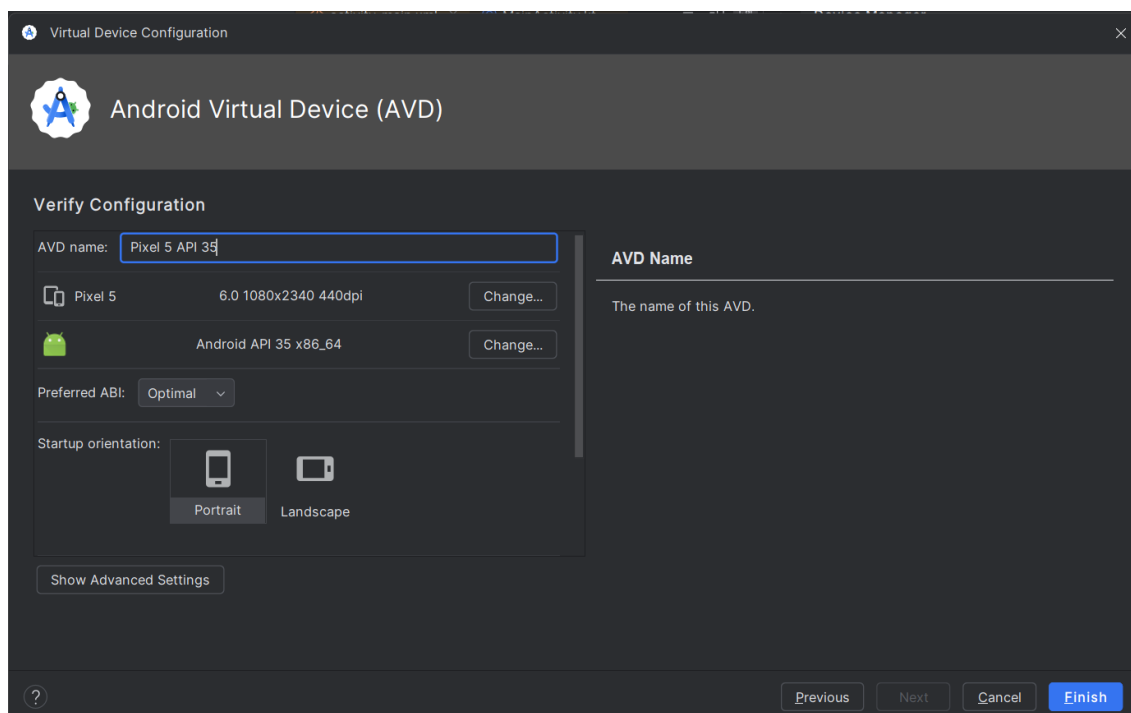Go to Device Manager (Tools -> Device Manager)

Click + Icon -> Create Virtual Device

Search Pixel 5 And Select That And Hit Next

Select API And Hit Next

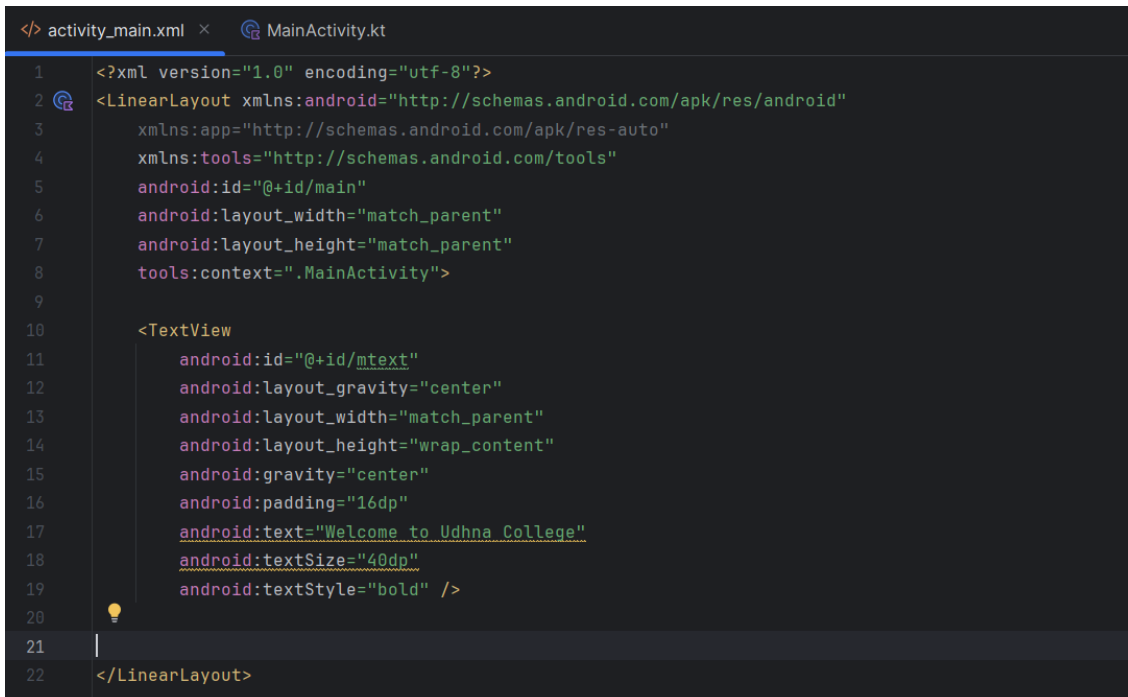Give AVD Name And Other Configuration And Hit Finish

Question 2

Create an Android project with an empty activity using Linear Layout and display message "Welcome to Udhna College".

Answer

- Code Preview :

```xml
activity_main.xml ×    MainActivity.kt
<?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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/mtext"
        android:layout_gravity="center"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:padding="16dp"
        android:text="Welcome to Udhna College"
        android:textSize="40dp"
        android:textStyle="bold" />


</LinearLayout>
```
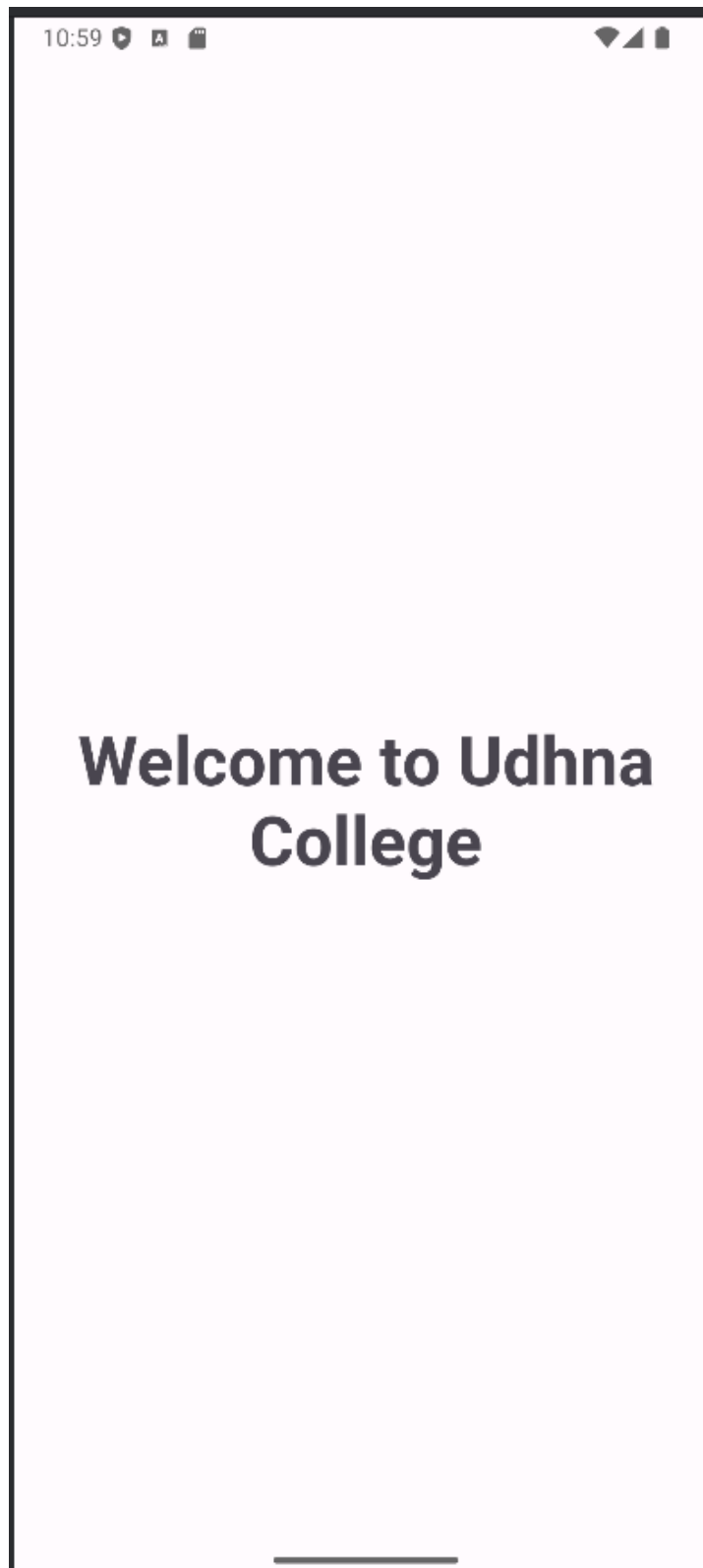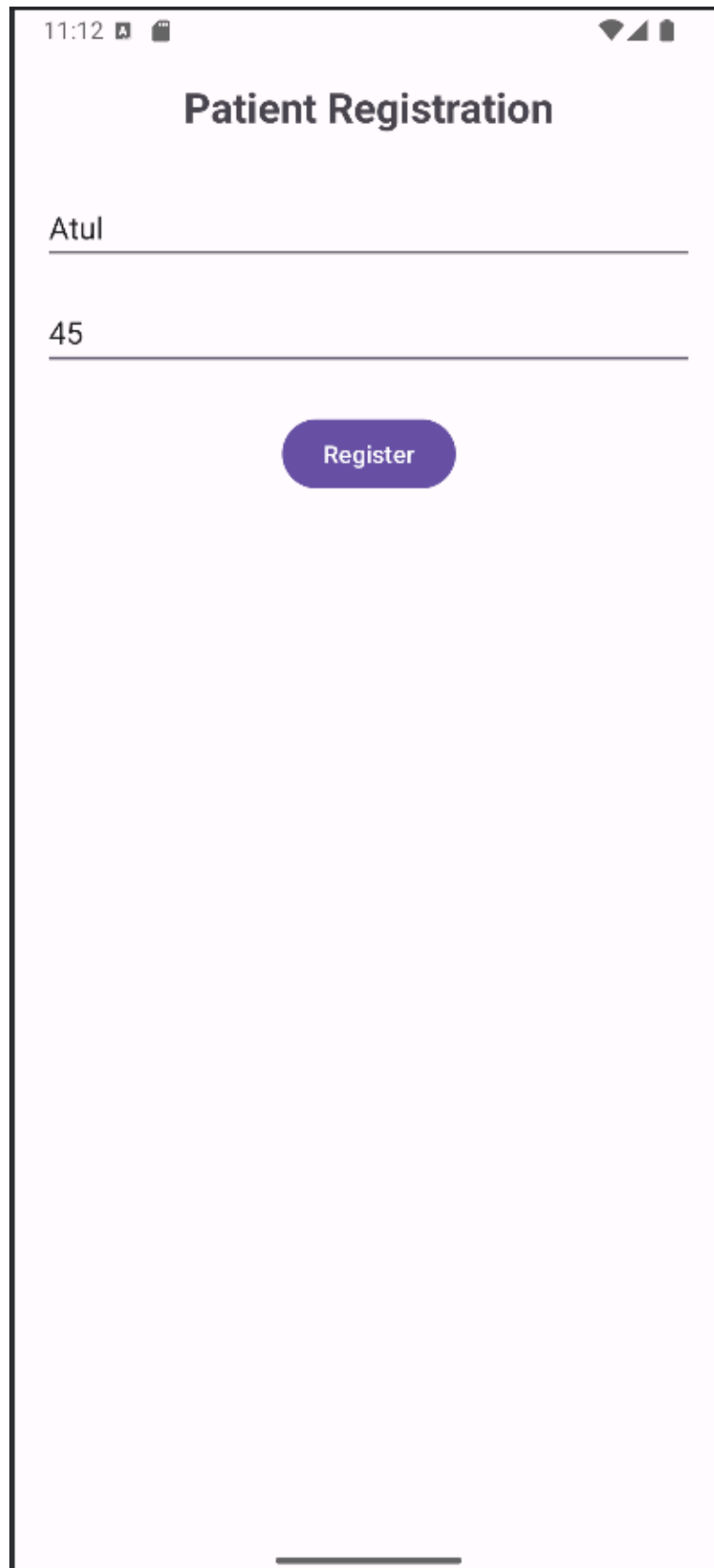
- Output :

Question 3

Create an Android project with empty activity and design a Patient Registration view.

Answer

- Code Preview :

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

    <TextView
        android:id="@+id/Heading"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Patient Registration"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:padding="16dp"/>
    <EditText
        android:id="@+id/edtPatientName"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Patient Name"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@id/Heading"
        android:layout_margin="16dp"/>

    <EditText
        android:id="@+id/edtPatientAge"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Patient Age"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@id/edtPatientName"
        android:layout_margin="16dp"/>

    <!-- Add more UI components as needed (e.g., gender, address, etc.) -->

    <Button
        android:id="@+id/btnRegister"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Register"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@id/edtPatientAge"
        android:layout_marginTop="24dp"/>

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

- Output :

Question 4

Create an Android project with empty activity using relative layout and design a Student Login Page.

Answer

- Code Preview :

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/tvTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Student Login"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="32dp"/>

    <EditText
        android:id="@+id/etUsername"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Username"
        android:layout_below="@id/tvTitle"
        android:layout_marginTop="24dp"/>

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

    <Button
        android:id="@+id/btnLogin"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login"
        android:layout_below="@id/etPassword"
        android:layout_marginTop="24dp"/>

</RelativeLayout>
```

- Output :

Question 5

Create an Android project with an empty activity using table layout and Design a Student Mark Entry view.(At least 5 subjects)
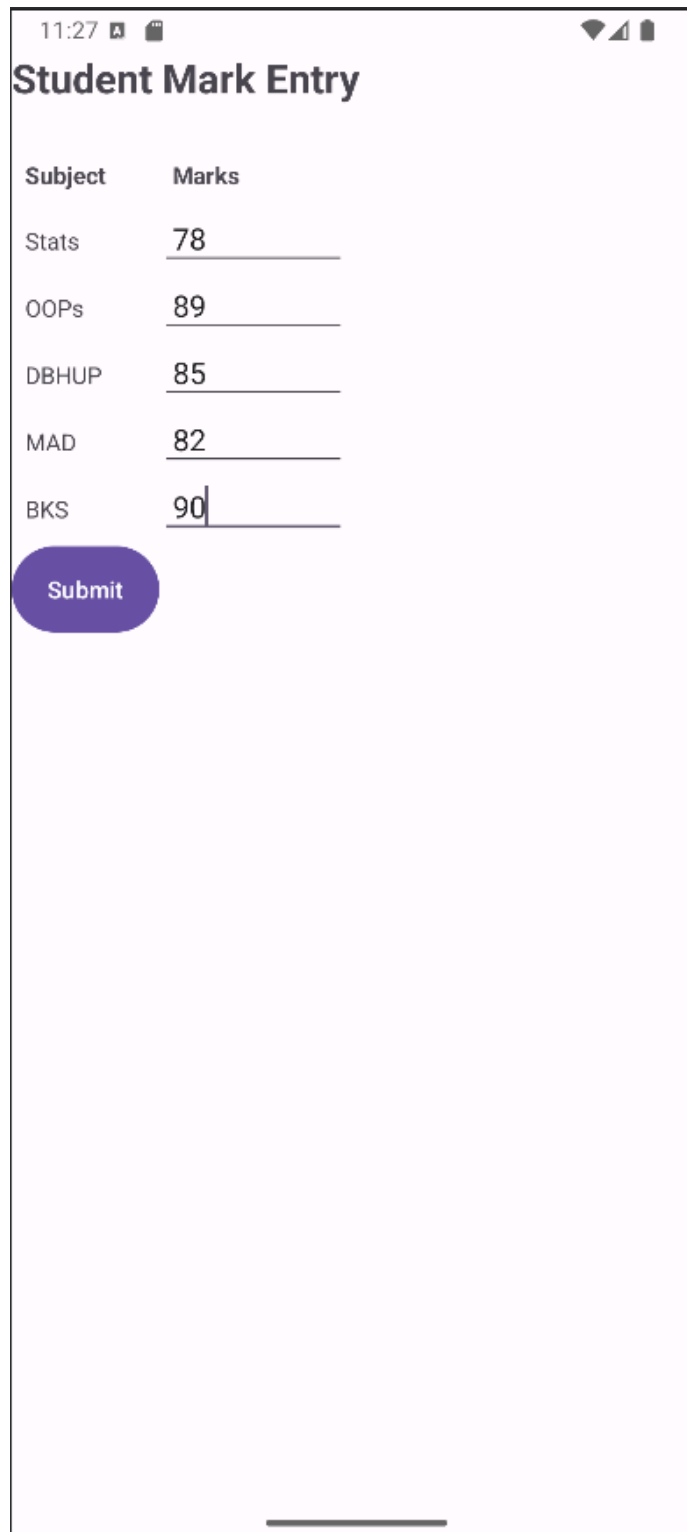
Answer

- Code Preview :

```xml
<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/tvTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Student Mark Entry"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_gravity="center"
        android:layout_marginBottom="24dp"/>

    <TableRow>
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Subject"
            android:textStyle="bold"
            android:padding="8dp"/>
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Marks"
            android:textStyle="bold"
            android:padding="8dp"/>
    </TableRow>

    <!-- Subject Rows -->
    <TableRow>
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Stats"
            android:padding="8dp"/>
        <EditText
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:inputType="number"
            android:hint="Enter marks"
            android:padding="8dp"/>
    </TableRow>
```

```xml
48          </TableRow>
49
50          <TableRow>
51              <TextView
52                  android:layout_width="wrap_content"
53                  android:layout_height="wrap_content"
54                  android:text="OOPs"
55                  android:padding="8dp"/>
56              <EditText
57                  android:layout_width="wrap_content"
58                  android:layout_height="wrap_content"
59                  android:inputType="number"
60                  android:hint="Enter marks"
61                  android:padding="8dp"/>
62          </TableRow>
63
64          <TableRow>
65              <TextView
66                  android:layout_width="wrap_content"
67                  android:layout_height="wrap_content"
68                  android:text="DBHUP"
69                  android:padding="8dp"/>
70              <EditText
71                  android:layout_width="wrap_content"
72                  android:layout_height="wrap_content"
73                  android:inputType="number"
74                  android:hint="Enter marks"
75                  android:padding="8dp"/>
76          </TableRow>
77
78          <TableRow>
79              <TextView
80                  android:layout_width="wrap_content"
81                  android:layout_height="wrap_content"
82                  android:text="MAD"
83                  android:padding="8dp"/>
84              <EditText
85                  android:layout_width="wrap_content"
86                  android:layout_height="wrap_content"
87                  android:inputType="number"
88                  android:hint="Enter marks"
89                  android:padding="8dp"/>
90          </TableRow>
91
92          <TableRow>
93              <TextView
94                  android:layout_width="wrap_content"
95                  android:layout_height="wrap_content"
96                  android:text="BKS"
97                  android:padding="8dp"/>
98              <EditText
99                  android:layout_width="wrap_content"
100                 android:layout_height="wrap_content"
101                 android:inputType="number"
102                 android:hint="Enter marks"
103                 android:padding="8dp"/>
104         </TableRow>
```

```
105
106        <TableRow>
107            <Button
108                android:id="@+id/btnSubmit"
109                android:layout_width="wrap_content"
110                android:layout_height="wrap_content"
111                android:text="Submit"
112                android:layout_gravity="center"
113                android:padding="16dp"/>
114        </TableRow>
115
116    </TableLayout>
```

- Output :

Question 6

Create an Android project with empty activity using and design a Bank transaction Entry view (A/C No, Name , Date , Debit, Credit, Balance)
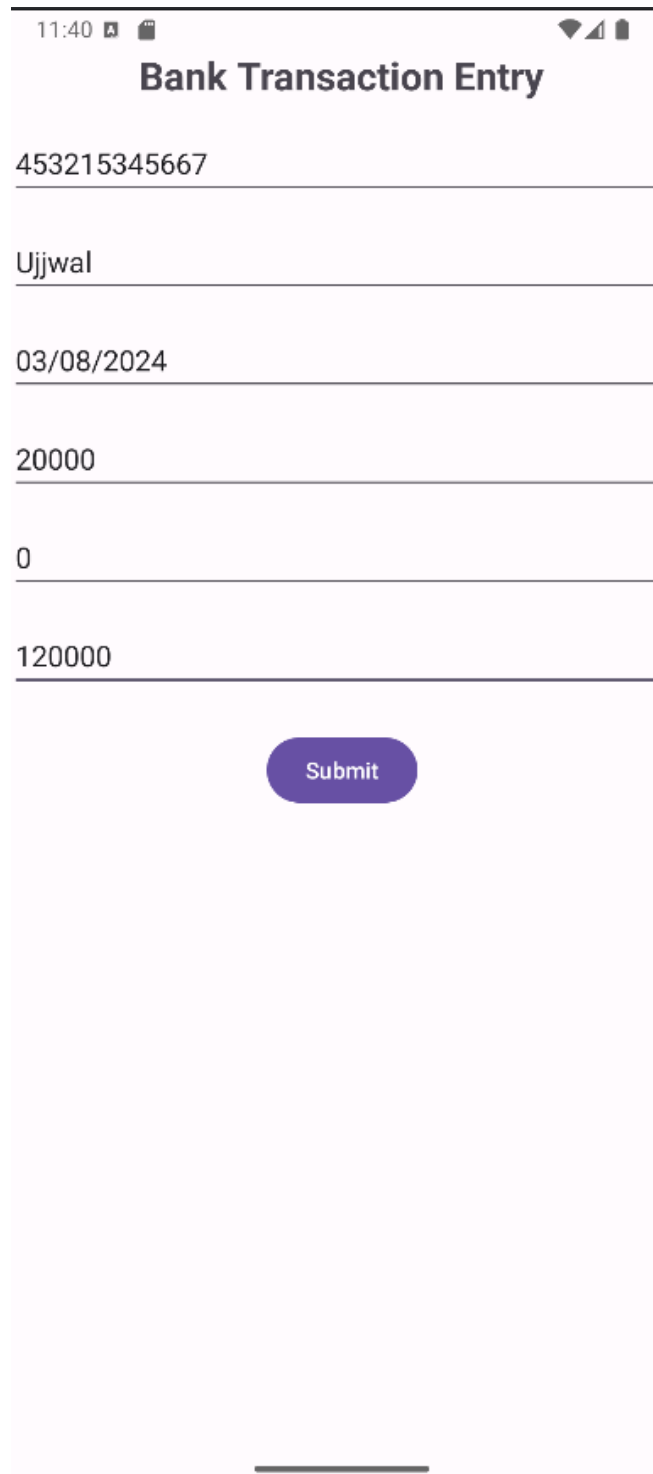
Answer

- Code Preview :

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

    <TextView
        android:id="@+id/tvTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Bank Transaction Entry"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginBottom="24dp"/>

    <EditText
        android:id="@+id/etAccountNo"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter A/C No"
        app:layout_constraintTop_toBottomOf="@id/tvTitle"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <EditText
        android:id="@+id/etName"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Name"
        app:layout_constraintTop_toBottomOf="@id/etAccountNo"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <EditText
        android:id="@+id/etDate"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Date"
        android:inputType="date"
        app:layout_constraintTop_toBottomOf="@id/etName"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>
```

```xml
    <EditText
        android:id="@+id/etDebit"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Debit Amount"
        android:inputType="numberDecimal"
        app:layout_constraintTop_toBottomOf="@id/etDate"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <EditText
        android:id="@+id/etCredit"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Credit Amount"
        android:inputType="numberDecimal"
        app:layout_constraintTop_toBottomOf="@id/etDebit"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <EditText
        android:id="@+id/etBalance"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:hint="Enter Balance"
        android:inputType="numberDecimal"
        app:layout_constraintTop_toBottomOf="@id/etCredit"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id/btnSubmit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintTop_toBottomOf="@id/etBalance"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="24dp"/>

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

- Output :

Question 7

Create an Android project with empty activity using linear layout and design a Library Books Entry view (Book Title , Authors Name, Publication ,Date, Price)
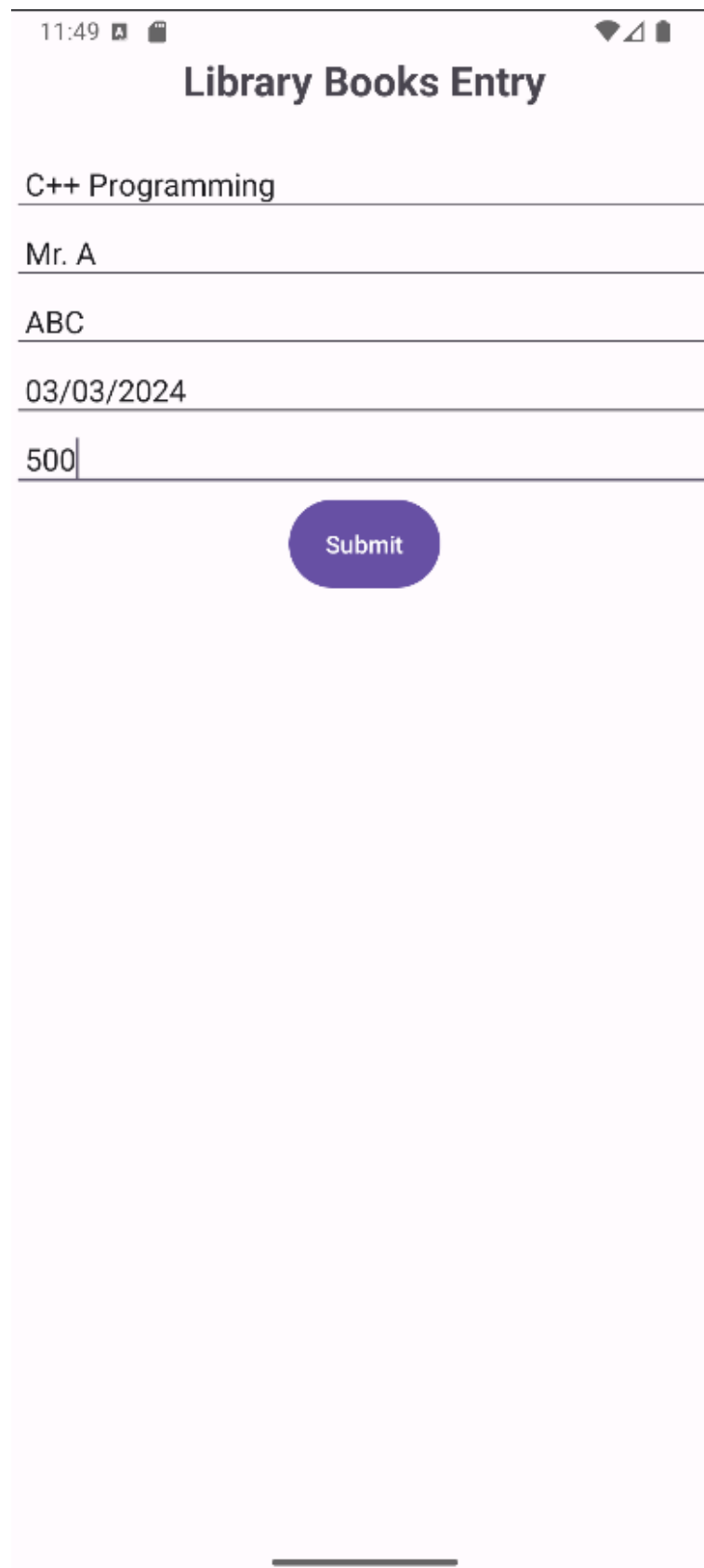
Answer

- Code Preview :

```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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/tvTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Library Books Entry"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_gravity="center"
        android:layout_marginBottom="24dp"/>

    <EditText
        android:id="@+id/etBookTitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Book Title"
        android:padding="8dp"/>

    <EditText
        android:id="@+id/etAuthorName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Author's Name"
        android:padding="8dp"/>

    <EditText
        android:id="@+id/etPublication"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Publication"
        android:padding="8dp"/>

    <EditText
        android:id="@+id/etDate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Date"
        android:inputType="date"
        android:padding="8dp"/>
```

```xml
48              android:padding="8dp"/>
49
50      <EditText
51              android:id="@+id/etPrice"
52              android:layout_width="match_parent"
53              android:layout_height="wrap_content"
54              android:hint="Enter Price"
55              android:inputType="numberDecimal"
56              android:padding="8dp"/>
57
58      <Button
59              android:id="@+id/btnSubmit"
60              android:layout_width="wrap_content"
61              android:layout_height="wrap_content"
62              android:text="Submit"
63              android:layout_gravity="center"
64              android:padding="16dp"/>
65
66  </LinearLayout>
```

- Output :

Question 8

Create an Android project with empty activity and design Student Registration View and handle button click event and display message "Registration Successfully".

Answer

- Code Preview : (XML)

```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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/etName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Name"
        android:padding="8dp"/>

    <EditText
        android:id="@+id/etEmail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Email"
        android:inputType="textEmailAddress"
        android:padding="8dp"/>

    <EditText
        android:id="@+id/etPhone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Phone Number"
        android:inputType="phone"
        android:padding="8dp"/>

    <Button
        android:id="@+id/btnRegister"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Register"
        android:layout_gravity="center"
        android:padding="16dp"/>

</LinearLayout>
```

(Java File)

```java
package com.example.q7;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText etName, etEmail, etPhone;  2 usages
    private Button btnRegister;  2 usages

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

        etName = findViewById(R.id.etName);
        etEmail = findViewById(R.id.etEmail);
        etPhone = findViewById(R.id.etPhone);
        btnRegister = findViewById(R.id.btnRegister);

        btnRegister.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = etName.getText().toString();
                String email = etEmail.getText().toString();
                String phone = etPhone.getText().toString();

                if (!name.isEmpty() && !email.isEmpty() && !phone.isEmpty()) {
                    Toast.makeText( context: MainActivity.this,  text: "Registration Successfully", Toast.LENGTH_SHORT).show(
                } else {
                    Toast.makeText( context: MainActivity.this,  text: "Please fill all fields", Toast.LENGTH_SHORT).show();
                }
            }
        });
```

- Ouptut :

Question 9

Create an Android project with empty activity in which take two radio button and get text from that which is selected by user and display text using toast.

Answer

- Code Preview : (XML)

```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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <RadioButton
            android:id="@+id/radioButton1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Option 1"/>


        <RadioButton
            android:id="@+id/radioButton2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Option 2"/>
    </RadioGroup>

    <Button
        android:id="@+id/btnShowToast"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result"
        android:layout_gravity="center"
        android:layout_marginTop="24dp"/>

</LinearLayout>
```

(Java File)

```java
package com.example.q9;

> import ...

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroup;  2 usages
    private Button btnShowToast;  2 usages

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

        radioGroup = findViewById(R.id.radioGroup);
        btnShowToast = findViewById(R.id.btnShowToast);

        btnShowToast.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int selectedId = radioGroup.getCheckedRadioButtonId();
                RadioButton selectedRadioButton = findViewById(selectedId);

                if (selectedRadioButton != null) {
                    String selectedText = selectedRadioButton.getText().toString();
                    Toast.makeText( context: MainActivity.this, selectedText, Toast.LENGTH_SHORT).show();
                } else {
                    Toast.makeText( context: MainActivity.this, text: "No option selected", Toast.LENGTH_SHORT).show();
                }
            }
        });
```

- Output :