NAME:RUSHIKESH MHASKE
ROLL NO: 9142

PRACTICAL 1

(A)

AIM: Write an android program to print Welcome Message

Steps:

1.Create new project
2.Select language as java rest everything will be as it is
3.all libraries/resources will be imported
4.modify activity_main.xml
5.modify MainActivity.java
5.Select emulator(her pixel 4 used)
6.run the program

CODE:

activity_main.xml

```
<?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:padding="16dp">
   <!-- Welcome Message -->
   <TextView
      android:id="@+id/welcomeMessage"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Welcome to the App!"
      android:textSize="20sp"
      android:textColor="#000000"
      android:gravity="center"
      android:layout_marginBottom="20dp" />
   <!-- EditText for user input -->
   <EditText
      android:id="@+id/userInput"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter your name"
      android:inputType="textPersonName"
      android:minHeight="48dp"
      android:padding="10dp" />
   <!-- Button to update the message -->
   <Button
      android:id="@+id/updateButton"
      android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:text="Show Welcome"
    android:layout_gravity="center"/>
</LinearLayout>
```

MainActivity.java

```
package com.example.pract1a;
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 TextView welcomeMessage;
   private EditText userInput;
   private Button updateButton;

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

      welcomeMessage = findViewById(R.id.welcomeMessage);
      userInput = findViewById(R.id.userInput);
      updateButton = findViewById(R.id.updateButton);
      updateButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            String userName = userInput.getText().toString().trim();
            if (!userName.isEmpty()) {
               welcomeMessage.setText("Welcome, " + userName + "!");
            } else {
               welcomeMessage.setText("Welcome to the App!");
            }
         }
      });
   }
}
```

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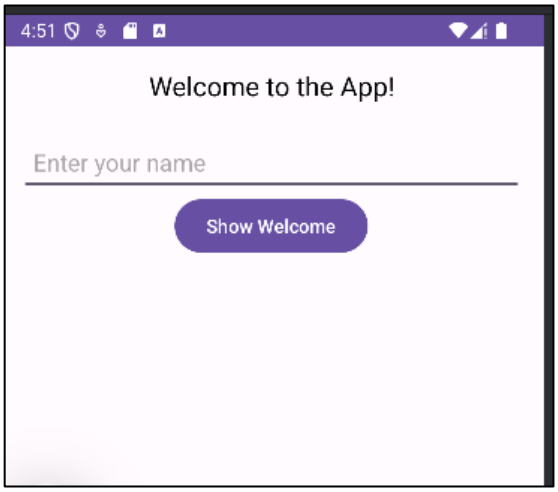
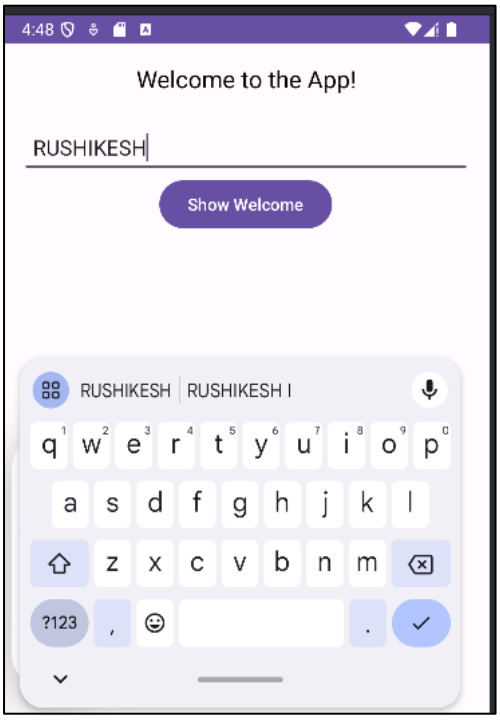
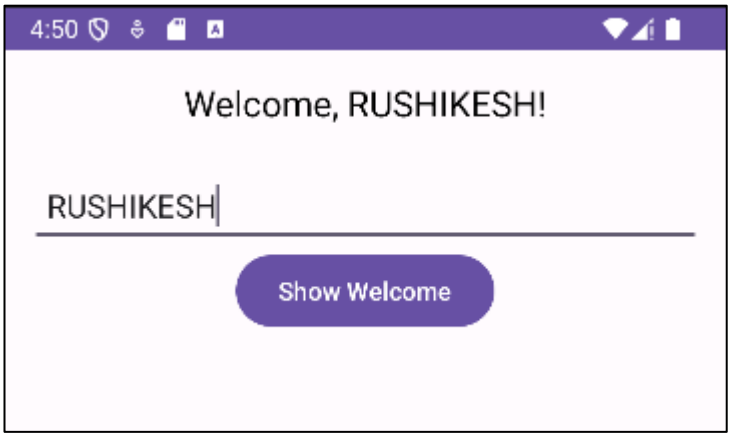
OUTPUT:







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(B)

AIM: Write an android program to perform addditon of 2 numbers.

CODE:

activity_main.xml

```
<?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:padding="16dp"
   android:gravity="center">

   <!-- TextView for First Number -->
   <TextView
      android:id="@+id/txtN1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Enter first number"
      android:textSize="18sp"
      android:layout_marginTop="50dp"
      android:paddingBottom="8dp" />

   <!-- EditText for First Number -->
   <EditText
      android:id="@+id/n1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:inputType="number"
      android:layout_marginBottom="16dp"
      android:padding="10dp" />

   <!-- TextView for Second Number -->
   <TextView
      android:id="@+id/txtN2"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Enter second number"
      android:textSize="18sp"
      android:layout_marginBottom="8dp" />

   <!-- EditText for Second Number -->
   <EditText
      android:id="@+id/n2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:ems="10"
      android:inputType="number"
```

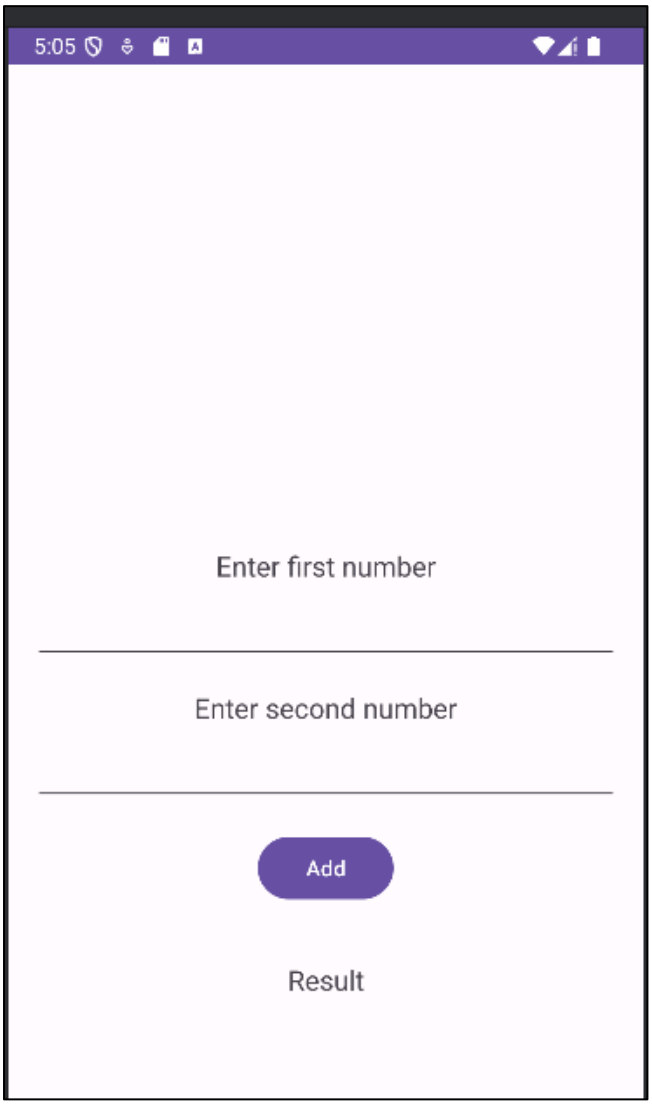
```
        android:layout_marginBottom="16dp"
        android:padding="10dp" />

    <!-- Button to Calculate -->
    <Button
        android:id="@+id/add"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add"
        android:layout_marginBottom="20dp"
        android:layout_gravity="center" />
    <!-- TextView to Display Result -->
    <TextView
        android:id="@+id/result"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result"
        android:textSize="18sp"
        android:layout_gravity="center"
        android:layout_marginTop="16dp" />
</LinearLayout>
```

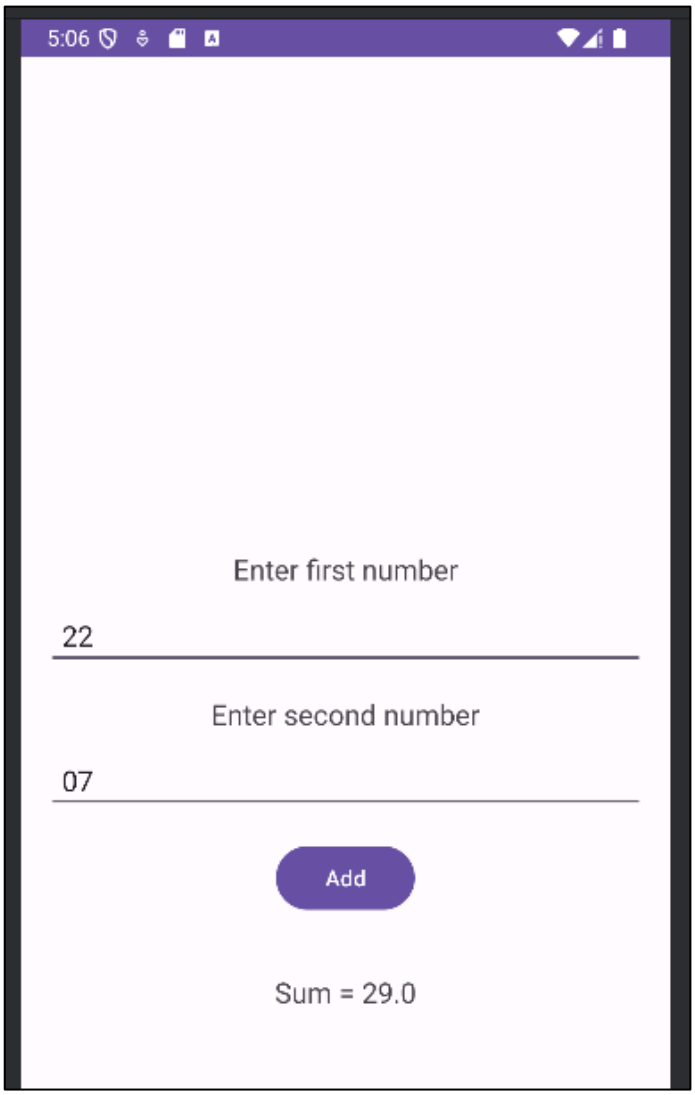
MainActivity.java

```
package com.example.practical1b;

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;
import com.example.practical1b.R;
public class MainActivity extends AppCompatActivity {
    EditText n1, n2;
    Button btn;
    TextView r;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        n1 = findViewById(R.id.n1);
        n2 = findViewById(R.id.n2);
        btn = findViewById(R.id.add);
        r = findViewById(R.id.result);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                // Check if inputs are not empty
```

```
            if (!n1.getText().toString().isEmpty() && !n2.getText().toString().isEmpty()) {
                // Get values from the EditText fields
                double a = Double.parseDouble(n1.getText().toString());
                double b = Double.parseDouble(n2.getText().toString());
                // Calculate the sum
                double c = a + b;
                // Set the result text
                r.setText("Sum = " + c);
            } else {
                // Show error message if any field is empty
                r.setText("Please enter valid numbers");
            }
        }
    });
  }
}
```

OUTPUT





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(C)

AIM: Write an android program to create a calculator (addition, subtraction, multiplication, division)

CODE:

activity_main.xml

```
<?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:padding="16dp"
   android:background="#F9F9F9">
   <TextView
      android:id="@+id/title"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Calculator"
      android:textColor="#FFFFFF"
      android:textSize="24sp"
      android:background="#800080"
      android:gravity="center"
      android:padding="16dp"
      android:layout_marginBottom="16dp" />
      <TextView
      android:id="@+id/txtN1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Enter 1st No.:"
      android:textSize="18sp"
      android:layout_marginBottom="8dp" />
   <EditText
      android:id="@+id/n1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:inputType="numberDecimal"
      android:background="@android:drawable/edit_text"
      android:padding="8dp"
      android:layout_marginBottom="16dp" />
   <TextView
      android:id="@+id/txtN2"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Enter 2nd No.:"
      android:textSize="18sp"
      android:layout_marginBottom="8dp" />
   <EditText
      android:id="@+id/n2"
      android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:inputType="numberDecimal"
    android:background="@android:drawable/edit_text"
    android:padding="8dp"
    android:layout_marginBottom="16dp" />
   <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:gravity="center"
    android:layout_marginBottom="16dp">
    <Button
       android:id="@+id/add"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_marginEnd="8dp"
       android:background="#800080"
       android:text="Add"
       android:textColor="#FFFFFF"
       android:padding="10dp" />
    <Button
       android:id="@+id/subtract"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_marginEnd="8dp"
       android:background="#800080"
       android:text="Subtract"
       android:textColor="#FFFFFF"
       android:padding="10dp" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:gravity="center"
    android:layout_marginBottom="16dp">
    <Button
       android:id="@+id/multiply"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:layout_marginEnd="8dp"
       android:background="#800080"
       android:text="Multiply"
       android:textColor="#FFFFFF"
       android:padding="10dp" />
    <Button
       android:id="@+id/divide"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:background="#800080"
```

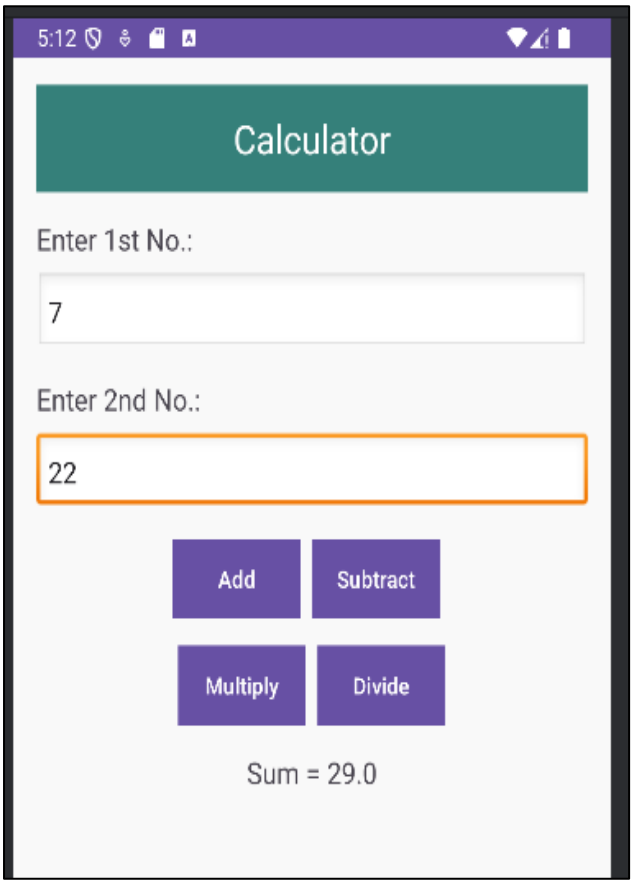
```
        android:text="Divide"
        android:textColor="#FFFFFF"
        android:padding="10dp" />
    </LinearLayout>
    <TextView
        android:id="@+id/result"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add = 17.0"
        android:textSize="18sp"
        android:layout_gravity="center" />
</LinearLayout>
```

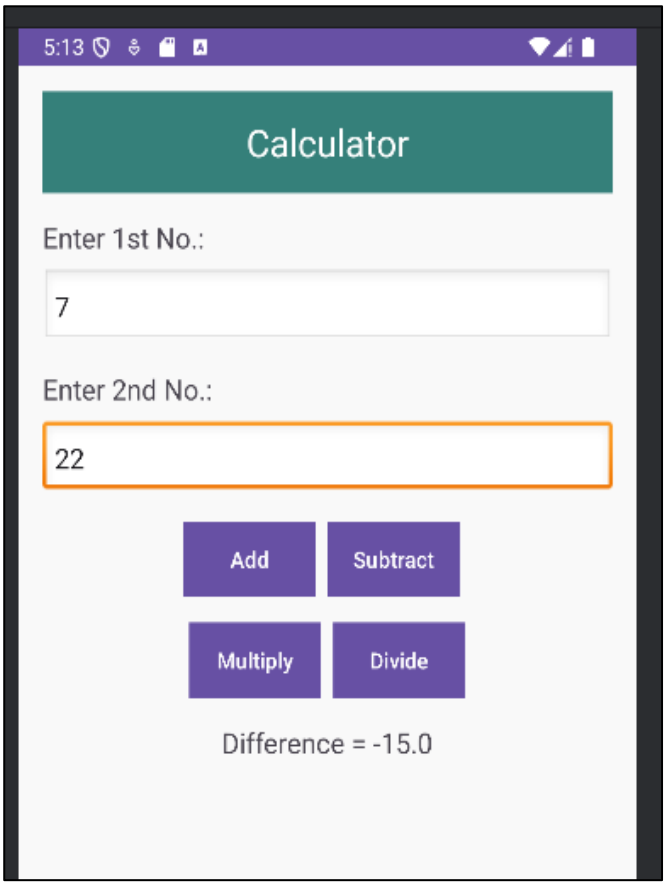
MainActivity.java

```
package com.example.p1c;
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 {
    EditText n1, n2;
    Button btnAdd, btnSubtract, btnMultiply, btnDivide;
    TextView r;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main); // Ensure this is correctly pointing to your XML layout
        n1 = findViewById(R.id.n1);
        n2 = findViewById(R.id.n2);
        btnAdd = findViewById(R.id.add);
        btnSubtract = findViewById(R.id.subtract);
        btnMultiply = findViewById(R.id.multiply);
        btnDivide = findViewById(R.id.divide);
        r = findViewById(R.id.result);
        btnAdd.setOnClickListener(v -> performOperation("add"));
        btnSubtract.setOnClickListener(v -> performOperation("subtract"));
        btnMultiply.setOnClickListener(v -> performOperation("multiply"));
        btnDivide.setOnClickListener(v -> performOperation("divide"));
    }
    private void performOperation(String operation) {
        if (!n1.getText().toString().isEmpty() && !n2.getText().toString().isEmpty()) {
            double a = Double.parseDouble(n1.getText().toString());
            double b = Double.parseDouble(n2.getText().toString());
            double result = 0;
            String operationResult = "";
            switch (operation) {
                case "add":
                    result = a + b;
```

```
                operationResult = "Sum = " + result;
                break;
            case "subtract":
                result = a - b;
                operationResult = "Difference = " + result;
                break;
            case "multiply":
                result = a * b;
                operationResult = "Product = " + result;
                break;
            case "divide":
                if (b != 0) {
                    result = a / b;
                    operationResult = "Quotient = " + result;
                } else {
                    operationResult = "Cannot divide by zero";
                }
                break;
        }
        r.setText(operationResult);
    } else {
        r.setText("Please enter valid numbers");
    }
  }
}
```

OUTPUT:





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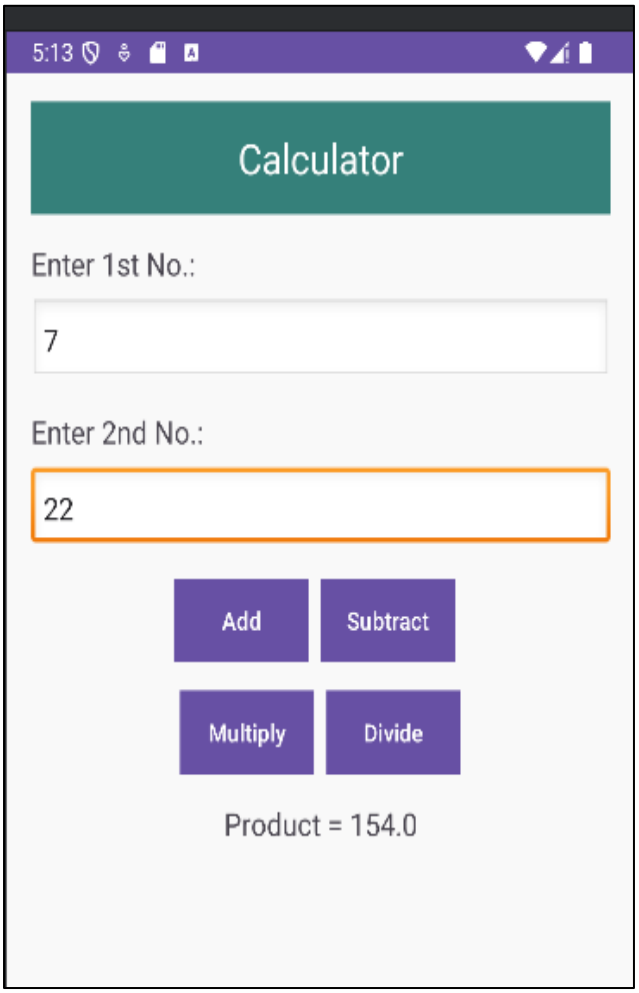

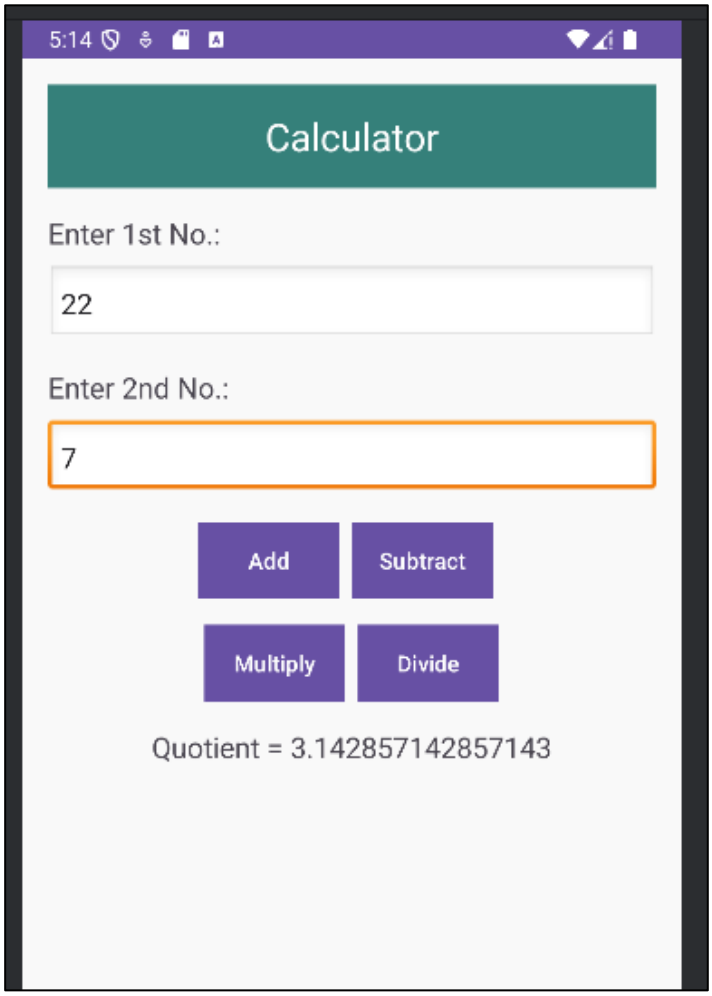

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ROLL NO: 9142

PRACTICAL 2

(A)

AIM: Write a program to create a email layout with the help of LinearLayout

activity_main.xml

```
<?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:padding="16dp">
   <!-- Recipient Section -->
   <EditText
      android:id="@+id/toField"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="To"
      android:padding="10dp"
      android:textSize="16sp"
      android:layout_marginBottom="10dp"
      android:importantForAccessibility="yes"
      android:contentDescription="Recipient's email address"/>
   <!-- CC Section -->
   <EditText
      android:id="@+id/ccField"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="CC (optional)"
      android:padding="10dp"
      android:textSize="16sp"
      android:layout_marginBottom="10dp"
      android:importantForAccessibility="yes"
      android:contentDescription="Carbon copy (optional)"/>
   <!-- BCC Section -->
   <EditText
      android:id="@+id/bccField"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="BCC (optional)"
      android:padding="10dp"
      android:textSize="16sp"
      android:layout_marginBottom="10dp"
      android:importantForAccessibility="yes"
      android:contentDescription="Blind carbon copy (optional)"/>
   <!-- Subject Field -->
   <EditText
      android:id="@+id/subjectField"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Subject"
```

```
        android:padding="10dp"
        android:textSize="16sp"
        android:layout_marginBottom="10dp"
        android:importantForAccessibility="yes"
        android:contentDescription="Email subject"/>
    <!-- Email Body Section (ScrollView) -->
    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1">
        <EditText
            android:id="@+id/emailBodyField"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Write your email here"
            android:inputType="textMultiLine"
            android:gravity="top|start"
            android:padding="10dp"
            android:textSize="16sp"
            android:importantForAccessibility="yes"
            android:contentDescription="Main email body"/>
    </ScrollView>
    <!-- Send Button -->
    <Button
        android:id="@+id/sendButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Send"
        android:textSize="18sp"
        android:layout_marginTop="20dp"
        android:importantForAccessibility="yes"
        android:contentDescription="Send email button"/>
</LinearLayout>
```

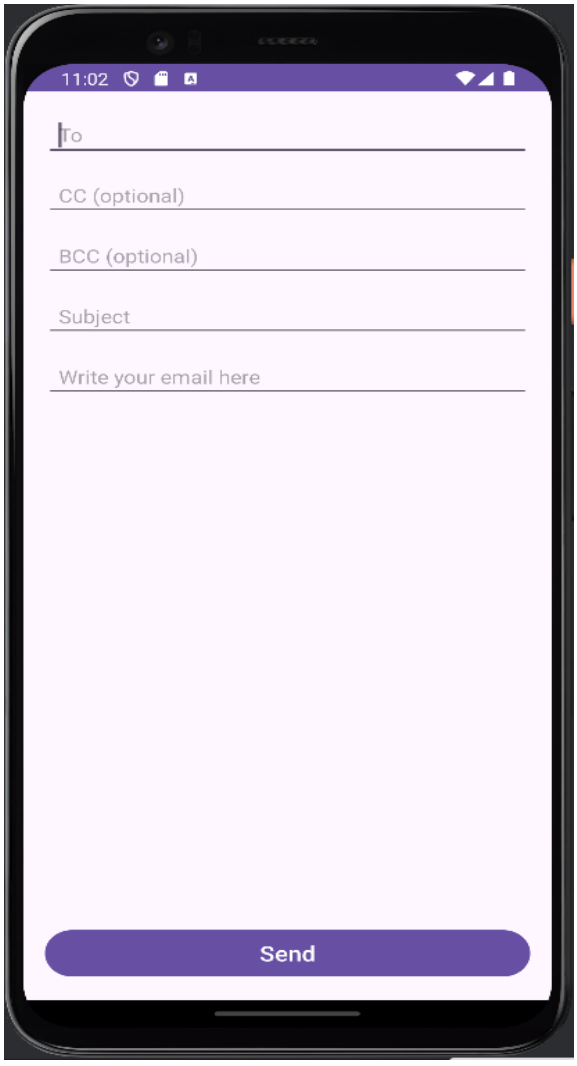
MainActivity.java

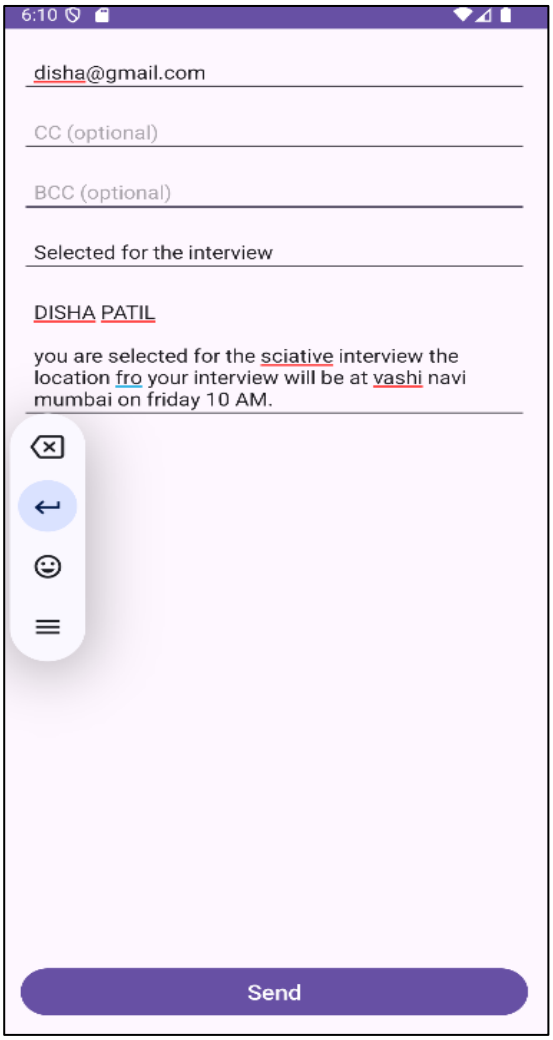
```
package com.example.9142;
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
import com.example.9142..R;

public class MainActivity extends AppCompatActivity {
    EditText toField, ccField, bccField, subjectField, emailBodyField;
    Button sendButton;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // Initialize views
        toField = findViewById(R.id.toField);
```

```
        ccField = findViewById(R.id.ccField);
        bccField = findViewById(R.id.bccField);
        subjectField = findViewById(R.id.subjectField);
        emailBodyField = findViewById(R.id.emailBodyField);
        sendButton = findViewById(R.id.sendButton);
        // Add functionality to the Send button (for demonstration, we'll just log the input)
        sendButton.setOnClickListener(v -> {
            String recipient = toField.getText().toString();
            String cc = ccField.getText().toString();
            String bcc = bccField.getText().toString();
            String subject = subjectField.getText().toString();
            String body = emailBodyField.getText().toString();
            // Here you would send the email or perform some other action
            // For demonstration, we just print the input values.
            System.out.println("To: " + recipient);
            System.out.println("CC: " + cc);
            System.out.println("BCC: " + bcc);
            System.out.println("Subject: " + subject);
            System.out.println("Body: " + body);
        });
    }
}
```

OUTPUT:





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(B)

AIM: Write a program to add the below details using TableLayout 1) UserId 2) Name 3) Location

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:layout_marginTop="100dp"
   android:paddingLeft="10dp"
   android:paddingRight="10dp"
   >
   <TableRow android:background="#0079D6" android:padding="5dp">
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="UserId" />
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="User Name" />
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="Location" />
   </TableRow>
   <TableRow android:background="#DAE8FC" android:padding="5dp">
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="1" />
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="Manasvi Patil" />
      <TextView
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_weight="1"
         android:text="Navi Mumbai" />
   </TableRow>
   <TableRow android:background="#DAE8FC" android:padding="5dp">
      <TextView
         android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="2" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Dipti Joshi" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Goregaon" />
  </TableRow>
  <TableRow android:background="#DAE8FC" android:padding="5dp">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="3" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Rahul Joshi" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Pune" />
  </TableRow>
</TableLayout>
```

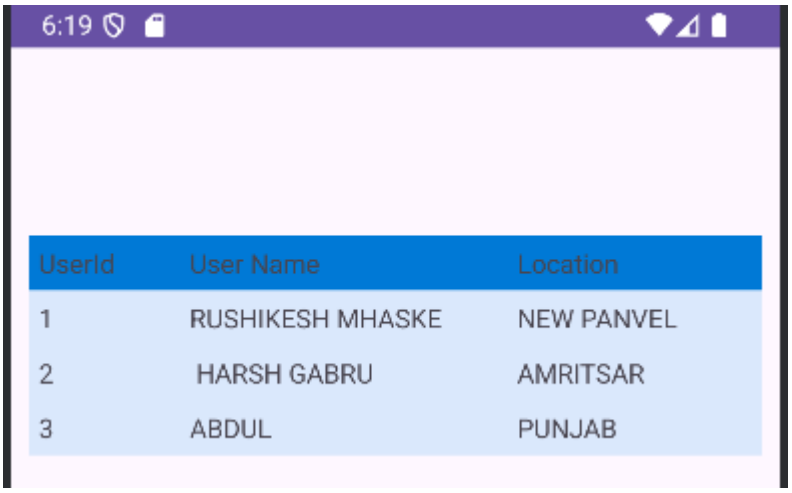
MainActivity.java

```
package com.example.9142

import android.os.Bundle;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {

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

OUTPUT:



(C)

AIM: Write a program to create FrameLayout

activity_main.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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    >
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:scaleType="centerCrop"
        app:srcCompat="@drawable/prac2cimage" />
    <TextView
        android:id="@+id/txtvw1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="bottom"
        android:background="#B6D0E2"
        android:padding="10dp"
        android:text="Eiffel Tower, Paris"
        android:textColor="#FFFFFF"
        android:textSize="20sp" />
    <TextView
        android:id="@+id/txtvw2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="right|bottom"
        android:background="#AA000000"
        android:padding="10dp"
        android:text="02/Jan/2025"
        android:textColor="#FFFFFF"
```

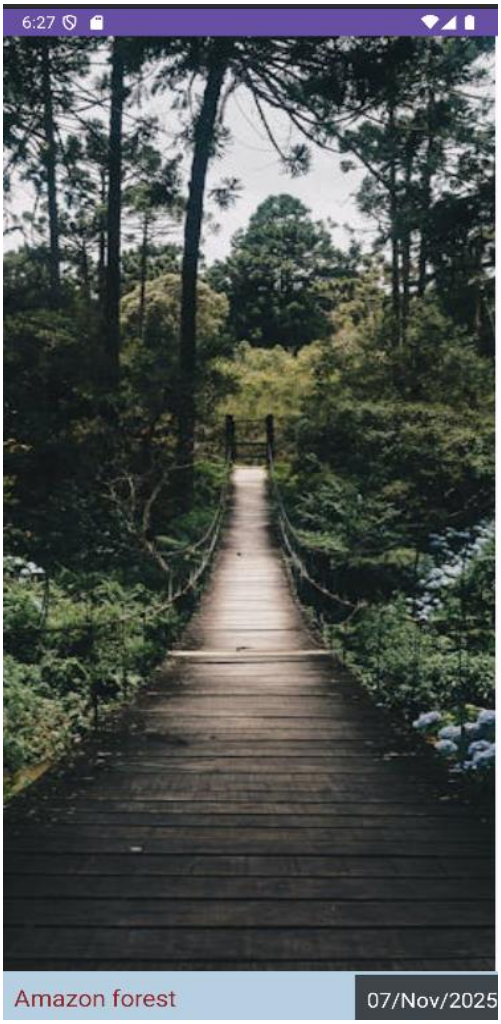
```
        android:textSize="18sp" />
</FrameLayout>
```

MainActivity.java

```
package com.example.9142;

import android.os.Bundle;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

OUTPUT:



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PRACTICAL 3

(A)

AIM: Write an android program to demonstrate the use of TextView

STEPS:

1.Create new project
2.Go to design>Palette >drag 5 textview
3.Write the activity_main.xml code
4.Write java code
5.Run the project

activity_main.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"
    android:background="#ECCBF2"
    android:padding="16dp">

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

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="ALEGRIA"
        android:textSize="40sp"
        android:textColor="#673AB7"
        android:textStyle="bold"
        android:gravity="center"
        android:layout_marginTop="10dp”/>

    <TextView
        android:id="@+id/textView3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="tech events"
        android:textSize="28sp"
        android:textAllCaps="true"
        android:gravity="center"
        android:layout_marginTop="10dp"/>
```

```
  <TextView
      android:id="@+id/textView4"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="BUG HUNTER"
      android:gravity="center"
      android:layout_marginTop="10dp"
      android:textSize="25sp"
      android:background="#E7A7BD"/>

    <TextView
      android:id="@+id/textView5"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginTop="10dp"
      android:autoLink="email|web"
      android:textSize="20sp"
      android:text="For more details visit https://www.google.com and send mail to support@alegria.com " />
</LinearLayout>
```

MainActivity.java

```
package com.example.a3a;

import android.os.Bundle;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    TextView txt;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        txt=findViewById(R.id.textView);
        txt.setText("WELCOME TO PILLAI COLLEGE");
    }
}
```

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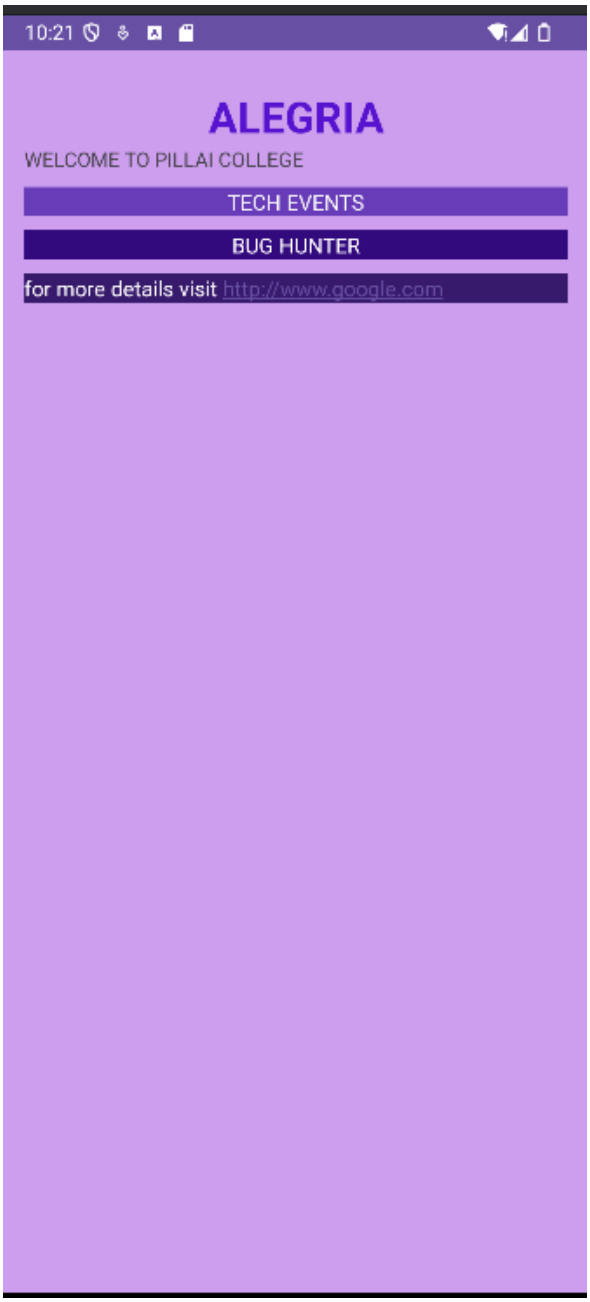
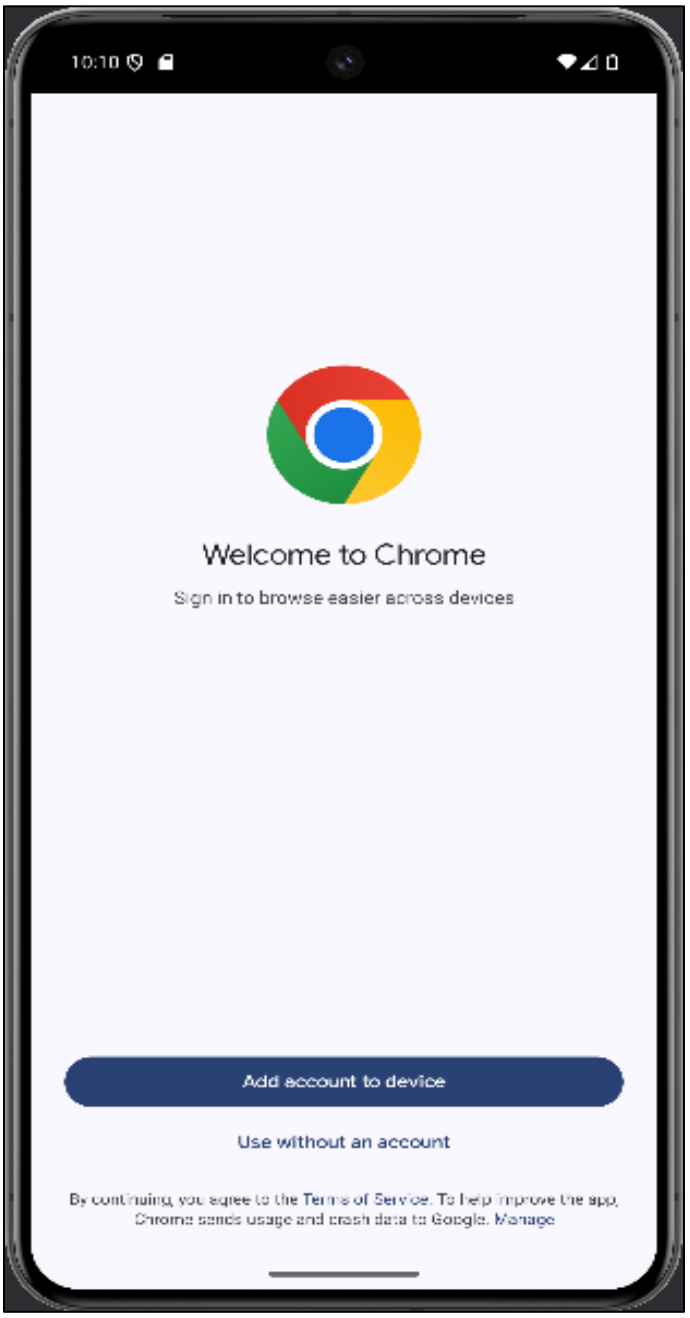
OUTPUT:





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(B)

AIM: Write an android program to demonstrate the functionality of EditText and Button

CODE:

activity_main.xml

```
<LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:padding="16dp"
   android:background="#f5f5f5">

   <!-- Name Field -->
   <EditText
      android:id="@+id/etName"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Name"
      android:inputType="textPersonName"
      android:padding="10dp"
      android:textSize="16sp"
      android:background="@android:drawable/edit_text"
      android:layout_marginBottom="8dp"/>

   <!-- Password Field -->
   <EditText
      android:id="@+id/etPassword"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Password"
      android:inputType="textPassword"
      android:padding="10dp"
      android:textSize="16sp"
      android:layout_marginBottom="8dp"/>

   <!-- Email Field -->
   <EditText
      android:id="@+id/etEmail"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Email"
      android:inputType="textEmailAddress"
      android:padding="10dp"
      android:textSize="16sp"
      android:layout_marginBottom="8dp"/>

   <!-- Date of Birth Field -->
   <EditText
      android:id="@+id/etDOB"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Date of Birth"
        android:inputType="date"
        android:padding="10dp"
        android:textSize="16sp"
        android:layout_marginBottom="8dp"/>

    <!-- Contact Field -->
    <EditText
        android:id="@+id/etContact"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Contact"
        android:inputType="phone"
        android:padding="10dp"
        android:textSize="16sp"
        android:layout_marginBottom="8dp"/>

    <!-- Submit Button -->
    <Button
        android:id="@+id/btnSubmit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:textSize="16sp"
        android:padding="10dp"
        android:backgroundTint="#6200EE"
        android:textColor="#FFFFFF"
        android:layout_marginBottom="16dp"/>

    <!-- Display Section -->
    <TextView
        android:id="@+id/tvDisplay"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:paddingTop="20dp"
        android:textColor="#000000"
        android:textSize="16sp"
        android:text=""/>
</LinearLayout>
```

MainActivity.java

```
package com.example.a3ap;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
```

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```
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    // Declare the EditText and Button objects
    private EditText etName, etPassword, etEmail, etDOB, etContact;
    private Button btnSubmit;
    private TextView tvDisplay;

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

        // Initialize the views
        etName = findViewById(R.id.etName);
        etPassword = findViewById(R.id.etPassword);
        etEmail = findViewById(R.id.etEmail);
        etDOB = findViewById(R.id.etDOB);
        etContact = findViewById(R.id.etContact);
        btnSubmit = findViewById(R.id.btnSubmit);
        tvDisplay = findViewById(R.id.tvDisplay);

        // Set the OnClickListener for the button
        btnSubmit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get the text from EditText fields
                String name = etName.getText().toString();
                String password = etPassword.getText().toString();
                String email = etEmail.getText().toString();
                String dob = etDOB.getText().toString();
                String contact = etContact.getText().toString();

                // Check if any field is empty
                if (name.isEmpty() || password.isEmpty() || email.isEmpty() || dob.isEmpty() || contact.isEmpty())
{
                    // Display a toast message if any field is empty
                    Toast.makeText(MainActivity.this, "Please fill all fields", Toast.LENGTH_SHORT).show();
                } else {
                    // Display the entered details in the TextView
                    String displayText = "Name: " + name + "\nPassword: " + password + "\nEmail: " + email +
                            "\nDate of Birth: " + dob + "\nContact: " + contact;
                    tvDisplay.setText(displayText);
                }
            }
        });
    }
}
```

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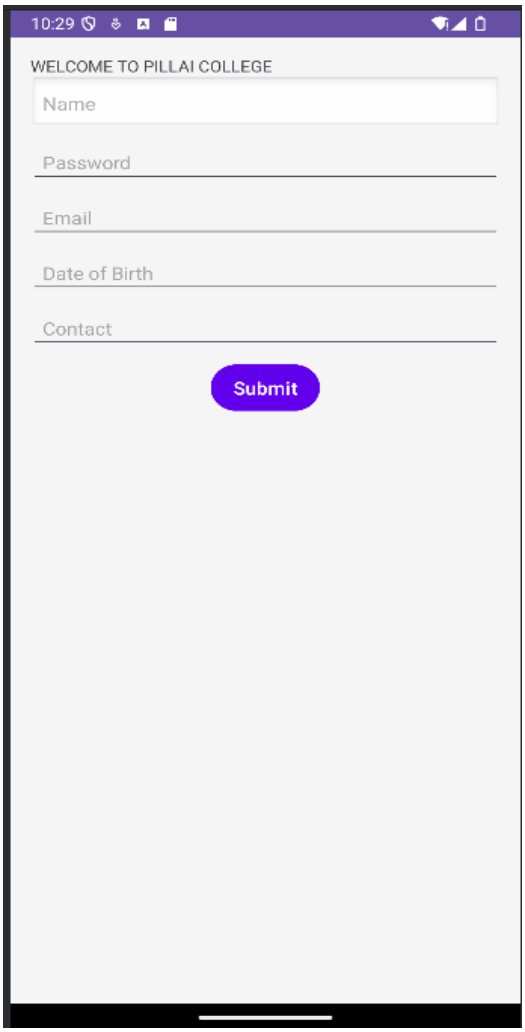
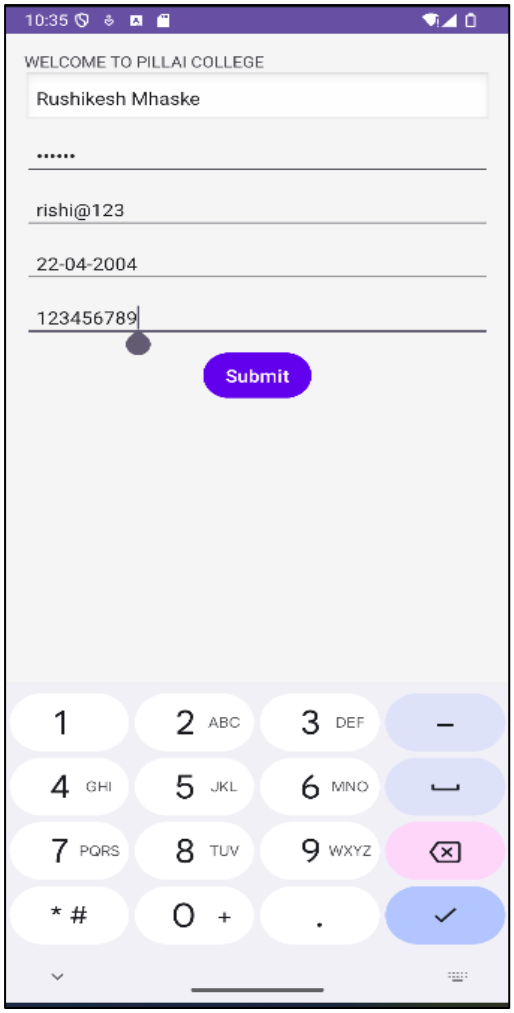
OUTPUT:





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(C)

AIM: Develop an Android application using Java that demonstrates the implementation of basic UI components such as ToggleButton, ImageButton, Spinner, and ProgressBar, showcasing their functionalities in an interactive user interface

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="30dp"
    android:orientation="vertical">

    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="360dp"
        android:layout_height="wrap_content"
        android:layout_marginBottom="16dp"
        android:gravity="center"
        android:text="ToggleButton"
        android:textOff="Show Progress"
        android:textOn="Hide Progress"
        tools:layout_editor_absoluteY="104dp" />

    <ProgressBar
        android:id="@+id/progressBar"
        style="?android:attr/progressBarStyle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:visibility="gone"
        />

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="363dp"
        android:layout_height="47dp"
        android:entries="@array/sample_items"
        tools:layout_editor_absoluteY="331dp" />

    <ImageButton
        android:id="@+id/imageButton"
```

```
        android:layout_width="44dp"
        android:layout_height="wrap_content"
        android:background="?attr/selectableItemBackgroundBorderless"
        app:srcCompat="@android:drawable/ic_menu_send" />
</LinearLayout>
```

strings.xml

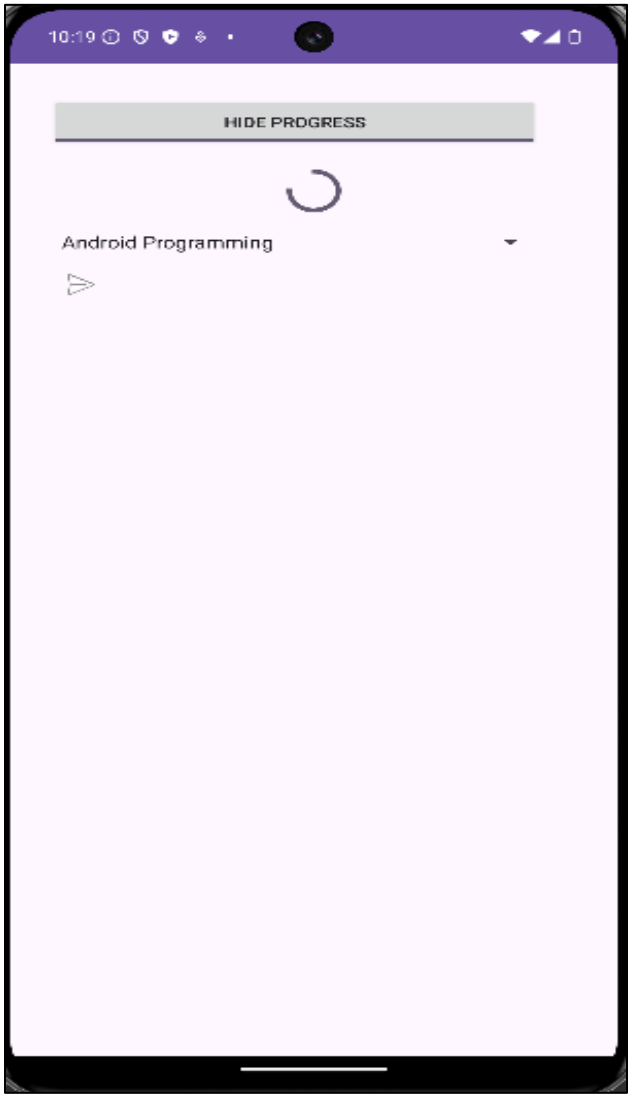
```
<resources>
   <string name="app_name">p3c_9142</string>
   <string-array name="sample_items">
   <item>Android Programming</item>
      <item>Java</item>
      <item>Kotlin</item>
   </string-array>
</resources>
```

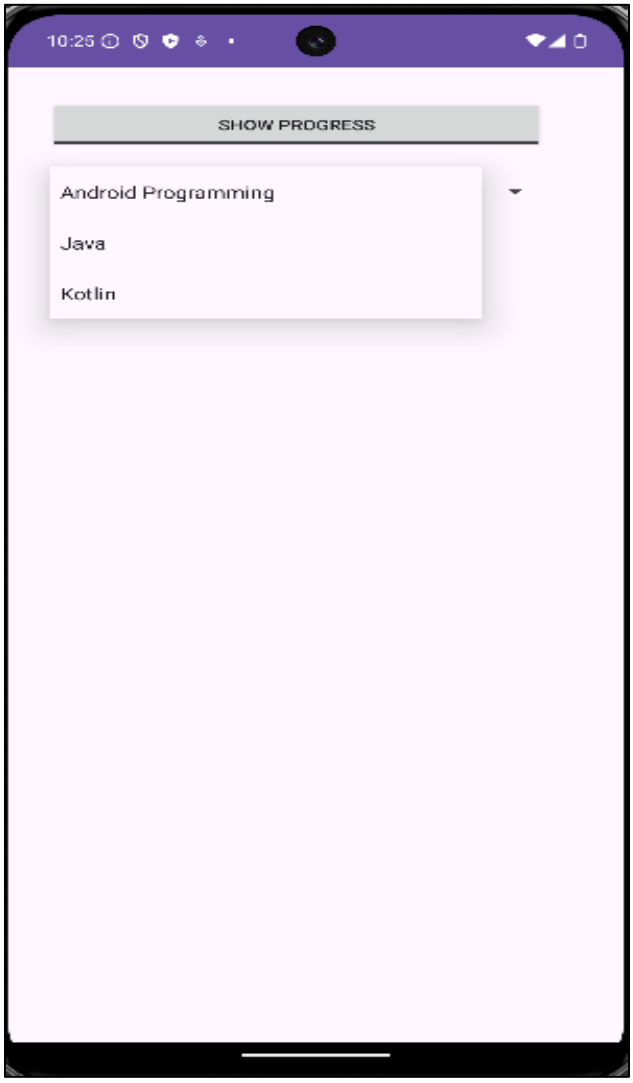
mainActivity.java

```
package com.example.p3c_9142;

import android.os.Bundle;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.view.View;
import android.widget.ImageButton;
import android.widget.ProgressBar;
import android.widget.Spinner;
import android.widget.Toast;
import android.widget.ToggleButton;

public class MainActivity extends AppCompatActivity {
   ToggleButton toggleButton;
   ProgressBar progressBar;
   Spinner spinner;
   ImageButton imageButton;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
     toggleButton=findViewById(R.id.toggleButton);
     progressBar=findViewById(R.id.progressBar);
     spinner=findViewById(R.id.spinner);
     imageButton=findViewById(R.id.imageButton);
```

```
    toggleButton.setOnCheckedChangeListener((compoundButton, isChecked) ->{
            if(isChecked)
            {
            progressBar.setVisibility(View.VISIBLE);
            }
            else{
               progressBar.setVisibility(View.GONE);
            } } );
    imageButton.setOnClickListener(new View.OnClickListener(){
       @Override
       public void onClick(View view){
          String selectedItem=spinner.getSelectedItem().toString();
          Toast.makeText(getApplicationContext(), "Selected Item:" + selectedItem,
                Toast.LENGTH_SHORT).show();
       }
    });
  }
}
```

OUTPUT:





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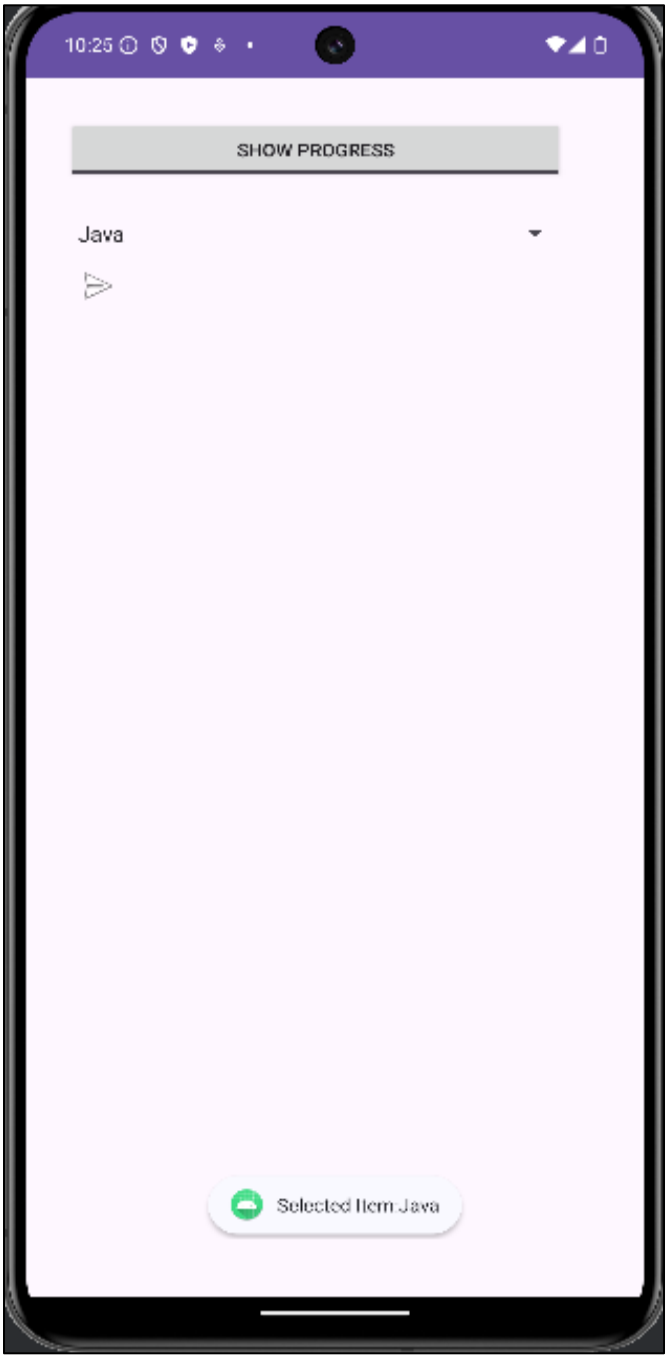

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PRACTICAL 4

AIM: Write an Android program where MainActivity contains a RadioGroup with four RadioButtons (Excellent, Good, Okay, Poor) for lesson rating, four CheckBoxes for feedback, and a Submit button that ensures a rating is selected (showing a Toast if not) and displays the selected rating along with checkbox states in a TextView.

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:background="@color/material_dynamic_neutral95">
   <TextView
      android:id="@+id/textView2"
      android:layout_width="match_parent"
      android:layout_height="50dp"
      android:layout_marginTop="30dp"
      android:background="@color/material_dynamic_tertiary70"
      android:paddingTop="8dp"
      android:text="RadioCheckBox"
      android:textAlignment="center"
      android:textColor="@color/white"
      android:textSize="25dp"
      android:textStyle="bold|italic" />
   <TextView
      android:id="@+id/textView3"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginTop="100dp"
      android:text="Rate This Lesson"
      android:textAlignment="center"
      android:textSize="16dp" />
   <RadioGroup
      android:id="@+id/rg"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginTop="150dp"
      android:orientation="horizontal"
      android:paddingLeft="30dp">
      <RadioButton
         android:id="@+id/r1"
         android:layout_width="110dp"
         android:layout_height="wrap_content"
         android:text="Excellent" />
      <RadioButton
         android:id="@+id/r2"
         android:layout_width="85dp"
         android:layout_height="wrap_content"
         android:text="Good" />
      <RadioButton
```

```
        android:id="@+id/r3"
        android:layout_width="90dp"
        android:layout_height="wrap_content"
        android:text="Okay" />
    <RadioButton
        android:id="@+id/r4"
        android:layout_width="92dp"
        android:layout_height="wrap_content"
        android:text="Poor" />
</RadioGroup>
<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="224dp"
    android:paddingTop="8dp"
    android:text="Give Your Suggestions Here"
    android:textAlignment="center"
    android:textSize="20dp" />
<CheckBox
    android:id="@+id/c1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="260dp"
    android:text="I Really Enjoyed This Lesson"
    android:textSize="15dp" />
<CheckBox
    android:id="@+id/c2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="300dp"
    android:text="I Somewhat Liked This Lesson"
    android:textSize="15dp" />
<CheckBox
    android:id="@+id/c3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="340dp"
    android:text="The Lesson Was Okay"
    android:textSize="15dp" />
<CheckBox
    android:id="@+id/c4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="380dp"
    android:text="I Didn't Like This Lesson"
    android:textSize="15dp" />
<Button
    android:id="@+id/btn"
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="450dp"
    android:text="Send" />
</RelativeLayout>
```

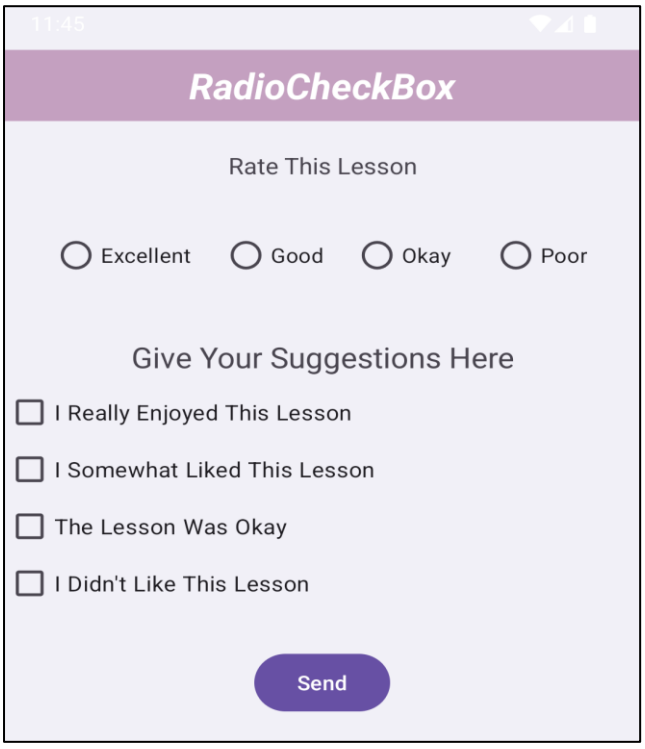
MainActivity.java

```
package com.meallistlogger.practical4;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   private TextView txtTitle, txtRate;
   private RadioGroup radioGroup;
   private RadioButton radioExcellent, radioGood, radioOkay, radioPoor;
   private CheckBox checkBox1, checkBox2, checkBox3, checkBox4;
   private Button btnSend;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      txtTitle = findViewById(R.id.textView2);
      txtRate = findViewById(R.id.textView3);
      radioGroup = findViewById(R.id.rg);
      radioExcellent = findViewById(R.id.r1);
      radioGood = findViewById(R.id.r2);
      radioOkay = findViewById(R.id.r3);
      radioPoor = findViewById(R.id.r4);
      checkBox1 = findViewById(R.id.c1);
      checkBox2 = findViewById(R.id.c2);
      checkBox3 = findViewById(R.id.c3);
      checkBox4 = findViewById(R.id.c4);
      btnSend = findViewById(R.id.btn);
      radioGroup.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
         @Override
         public void onCheckedChanged(RadioGroup group, int checkedId) {
            if (checkedId == R.id.r1) {
               Toast.makeText(MainActivity.this, "Excellent selected", Toast.LENGTH_SHORT).show();
            } else if (checkedId == R.id.r2) {
               Toast.makeText(MainActivity.this, "Good selected", Toast.LENGTH_SHORT).show();
            } else if (checkedId == R.id.r3) {
               Toast.makeText(MainActivity.this, "Okay selected", Toast.LENGTH_SHORT).show();
            } else if (checkedId == R.id.r4) {
               Toast.makeText(MainActivity.this, "Poor selected", Toast.LENGTH_SHORT).show();
```

```
        }
      }
    });
    View.OnClickListener checkBoxListener = new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        CheckBox checkBox = (CheckBox) v;
        String message = "";
        if (checkBox.getId() == R.id.c1 && checkBox.isChecked()) {
          message = "You really enjoyed the lesson";
        } else if (checkBox.getId() == R.id.c2 && checkBox.isChecked()) {
          message = "You somewhat liked this lesson";
        } else if (checkBox.getId() == R.id.c3 && checkBox.isChecked()) {
          message = "The lesson was okay";
        } else if (checkBox.getId() == R.id.c4 && checkBox.isChecked()) {
          message = "You didn't like this lesson";
        }
        if (!message.isEmpty()) {
          Toast.makeText(MainActivity.this, message, Toast.LENGTH_SHORT).show();
        } }
    };
    checkBox1.setOnClickListener(checkBoxListener);
    checkBox2.setOnClickListener(checkBoxListener);
    checkBox3.setOnClickListener(checkBoxListener);
    checkBox4.setOnClickListener(checkBoxListener);
    btnSend.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        Toast.makeText(MainActivity.this, "Feedback Sent!", Toast.LENGTH_SHORT).show();
      }});
  }}
```

OUTPUT



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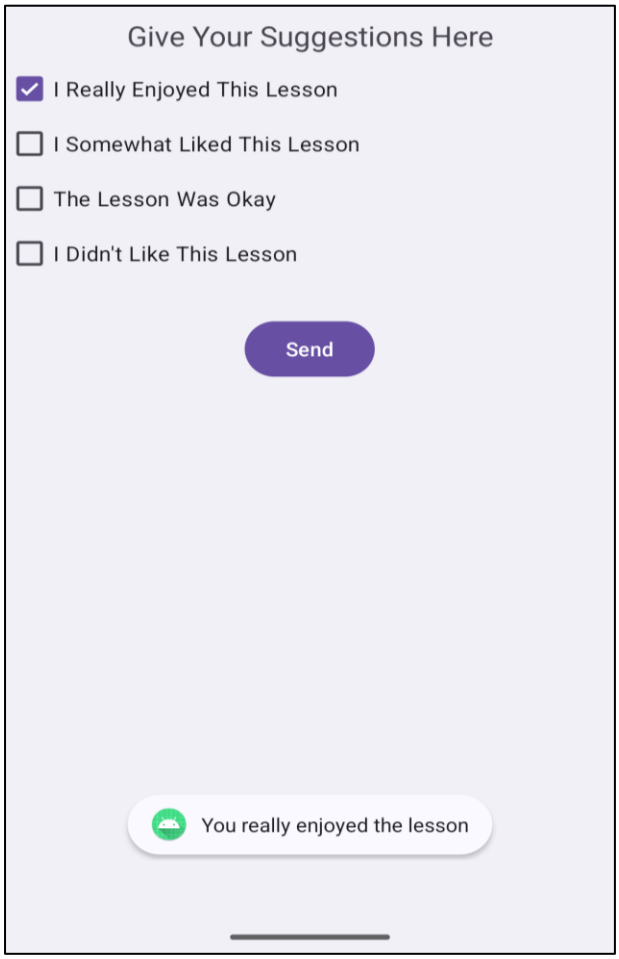

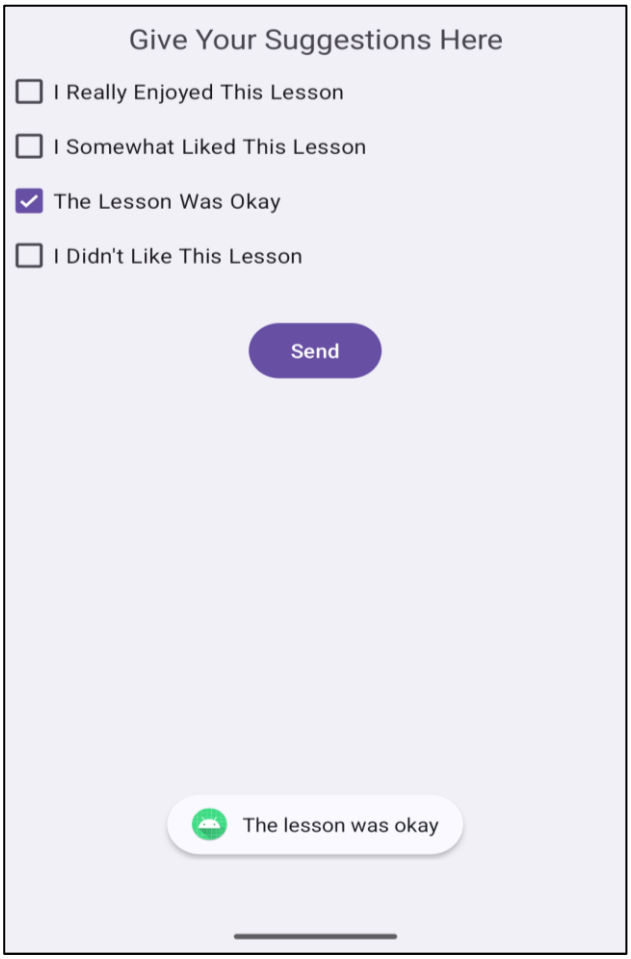

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PRACTICAL 5

(A)

AIM:Write an android program to demonstrate the navigation from one screen to another.

Steps:

1.Create new project
2.Java language and gardle build configuration
3.RC on activity_main.xml>Refactor>SafeDelete
4.RC on layout>New>Layout Resource file
5.create new activity_main.xml>LinearLayout
6.write activity_main.xml code
7.write code on MainActivity.java
8. RC on layout folder>New>Activity>Empty views activity>change Layout name
9.Paste code of activity_main.xml and do changes
10.Modify code of NavigateActivity.java

CODE:

activity_main.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"
   android:gravity="center">
   <TextView
      android:id="@+id/txtMsg1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Welcome to first screen"
      android:textColor="#9C27B0"
      android:textSize="24sp" />
<Button
   android:id="@+id/btnNext"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="NEXT"
   android:layout_marginTop="8dp"/>
</LinearLayout>
```

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MainActivity.java

```
package com.example.practical5a_9142;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
    Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        //EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
        btn=findViewById(R.id.btnNext);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent it=new Intent(MainActivity.this,NavigateActivity.class);
                startActivity(it);
            }
        });
    }
}
```

navigate_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"
    android:gravity="center">
    <TextView
        android:id="@+id/txtMsg2"
        android:layout_width="wrap_content"
```

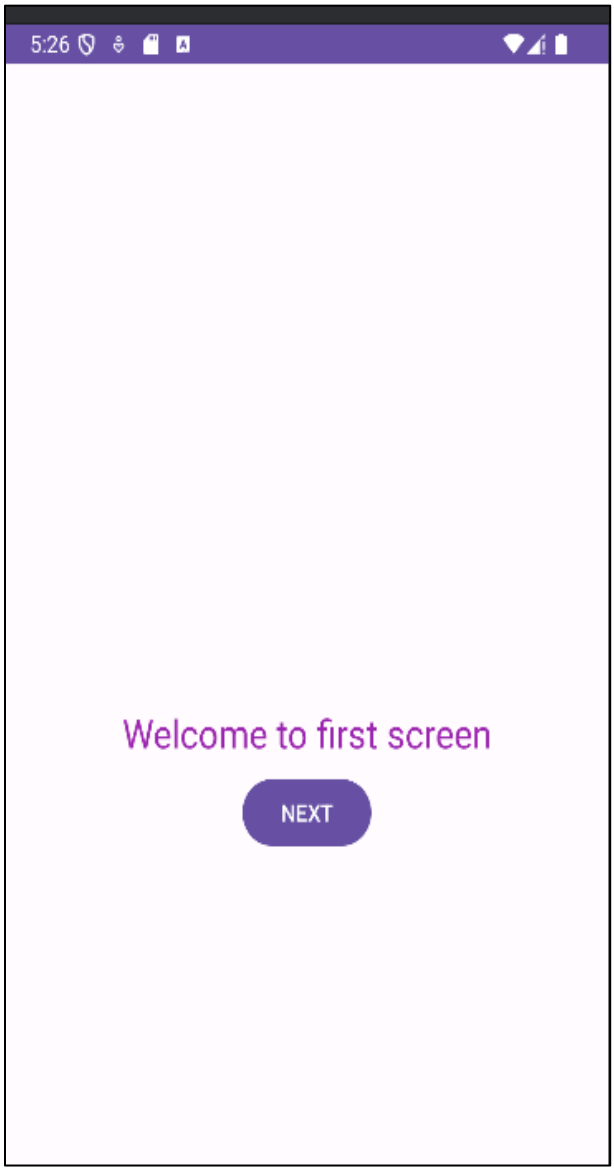
```
        android:layout_height="wrap_content"
        android:text="Welcome to Second screen"
        android:textColor="#9C27B0"
        android:textSize="24sp"/>
    <Button
        android:id="@+id/btnBack"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="GO BACK "
        android:layout_marginTop="8dp"
        />
</LinearLayout>
```

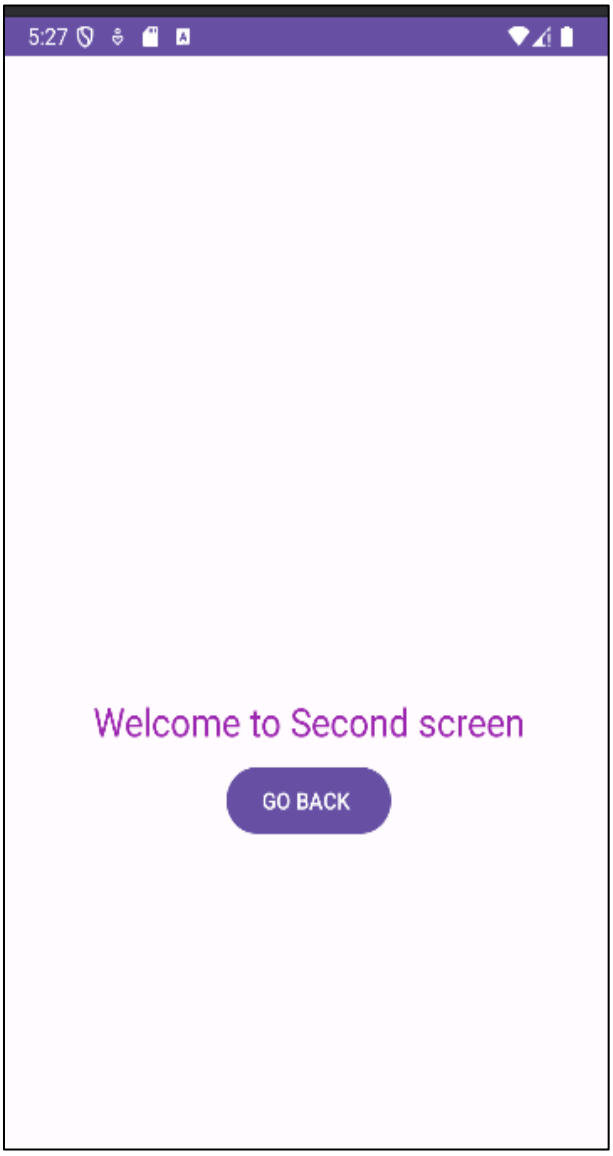
NavigateActivity.java

```
package com.example.practical5a_9142;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.content.Intent;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class NavigateActivity extends AppCompatActivity {

   Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        //EdgeToEdge.enable(this);
        setContentView(R.layout.activity_navigate);
         btn=findViewById(R.id.btnBack);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent it=new Intent(NavigateActivity.this,MainActivity.class);
```

```
            startActivity(it);
        }
    });
  }
}
```

OUTPUT:





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(B)

AIM - Write an Android program to demonstrate the Options Menu

Note - remove NoActionBar from (in both theme files) -
<style name="Base.Theme.Prac5B" parent="Theme.Material3.DayNight">
themes.xml

activity_main.xml

```
<?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:padding="16dp">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="This is a TextView"
        android:textSize="18sp" />
</LinearLayout>
```

options.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:tools="http://schemas.android.com/tools"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/search"
        android:title="Search"
        tools:ignore="ExtraText" />
    <item android:id="@+id/upload"
        android:title="Upload" />
    <item android:id="@+id/copy"
        android:title="Copy" />
    <item android:id="@+id/print"
        android:title="Print" />
    <item android:id="@+id/share"
        android:title="Share" />
    <item android:id="@+id/bookmark"
        android:title="BookMark" />
</menu>
```

Activity_Main.java

```
package com.example.practical5b;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
```

```
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.options, menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        Toast.makeText(this, "Selected Item: " + item.getTitle(),
                Toast.LENGTH_LONG).show();
        int num = item.getItemId();
        if (num == R.id.search){
            Toast.makeText(this, "Selected Item: " + item.getTitle(),
                    Toast.LENGTH_LONG).show();
            return true;
        }
        else if (num == R.id.upload){
            Toast.makeText(this, "Selected Item: " + item.getTitle(),
                    Toast.LENGTH_LONG).show();
            return true;
        }
        else if (num == R.id.copy){
            Toast.makeText(this, "Selected Item: " + item.getTitle(),
                    Toast.LENGTH_LONG).show();
            return true;
        }
        else if (num == R.id.print){
            Toast.makeText(this, "Selected Item: " + item.getTitle(),
                    Toast.LENGTH_LONG).show();
            return true;
        }
        else if (num == R.id.share){
            Toast.makeText(this, "Selected Item: " + item.getTitle(),
                    Toast.LENGTH_LONG).show();
            return true;
        }
        else if (num == R.id.bookmark){
            Toast.makeText(this, "Selected Item: " + item.getTitle(),
                    Toast.LENGTH_LONG).show();
            return true;
        }
        else{
            return super.onOptionsItemSelected(item);
        }}
}
```

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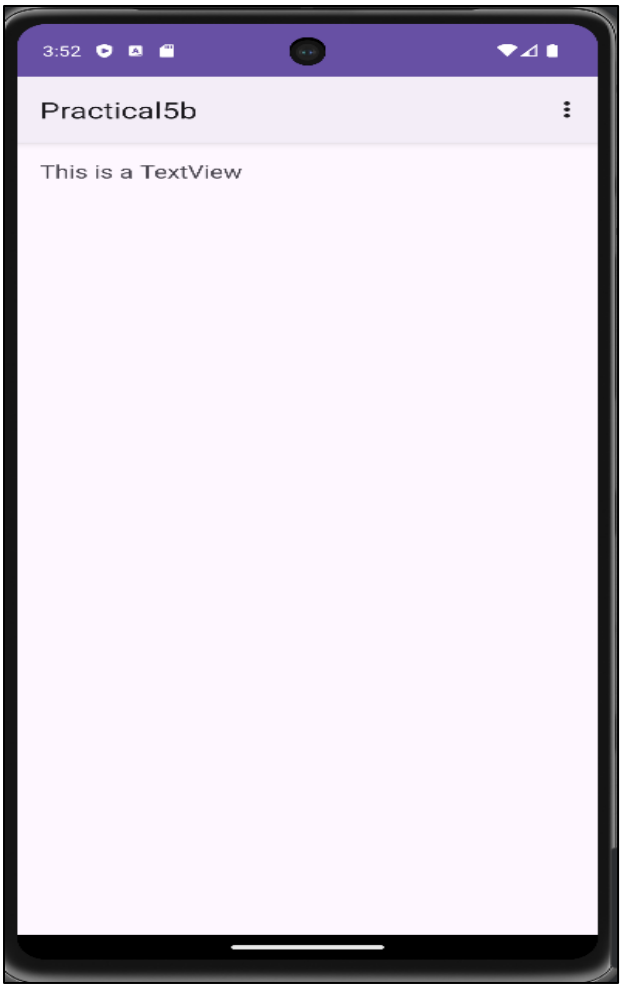
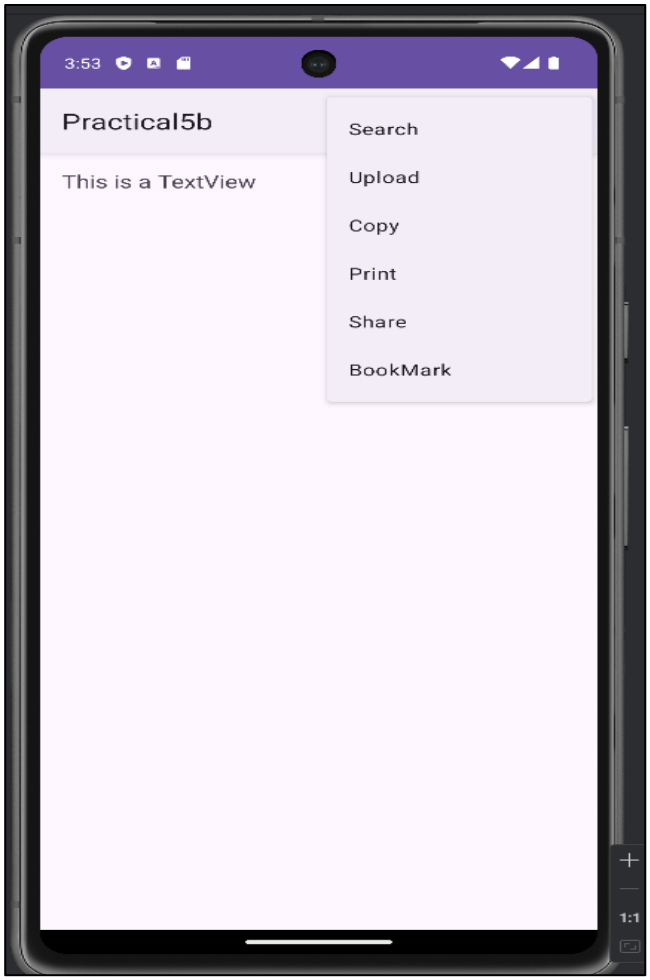
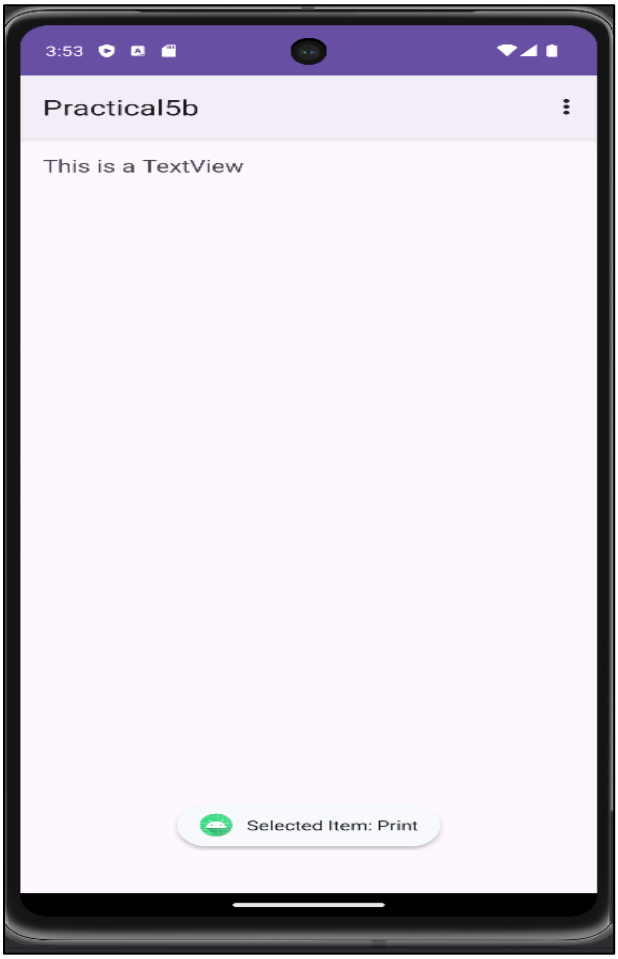
OUTPUT:







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PRACTICAL 6

AIM: Write a program to create RecyclerView in android

activity_main.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">
    <androidx.recyclerview.widget.RecyclerView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/recyclerView"/>
</LinearLayout>
```

items_layout.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="wrap_content">
    <TextView
        xmlns:android="http://schemas.android.com/apk/res/android"
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="16dp"
        android:textSize="18sp" />
</LinearLayout>
```

MainActivity.java

```
package com.example.practical6;

import android.os.Bundle;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;
import com.example.practical6.MyAdapter;
import com.example.practical6.R;
import java.util.Arrays;
import java.util.List;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        RecyclerView recyclerView = findViewById(R.id.recyclerView);
```

```
        List<String> names = Arrays.asList
                ( "Rushikesh", "Manasvi", "Vivaan", "Ishita", "Vihaan",
                        "Myra", "Aditya", "Aanya", "Aryan", "Diya",
                        "Dhruv", "Saanvi", "Kabir", "Riya", "Arjun",
                        "Sahana", "Rohan", "Kavya", "Karthik", "Tanvi",
                        "Om", "Nisha", "Sai", "Pooja", "Dev",
                        "Meera", "Manav", "Priya", "Raj", "Sneha",
                        "Nikhil", "Tanya", "Harsh", "Lakshmi", "Rishi",
                        "Aditi", "Samarth", "Shanaya", "Krishna", "Anjali",
                        "Ishan", "Rekha", "Arnav", "Neha", "Varun",
                        "Sita", "Kunal", "Bhavna", "Yash", "Gayatri");
        recyclerView.setLayoutManager(new LinearLayoutManager(this));
        recyclerView.setAdapter(new MyAdapter(names));
    }
}
```

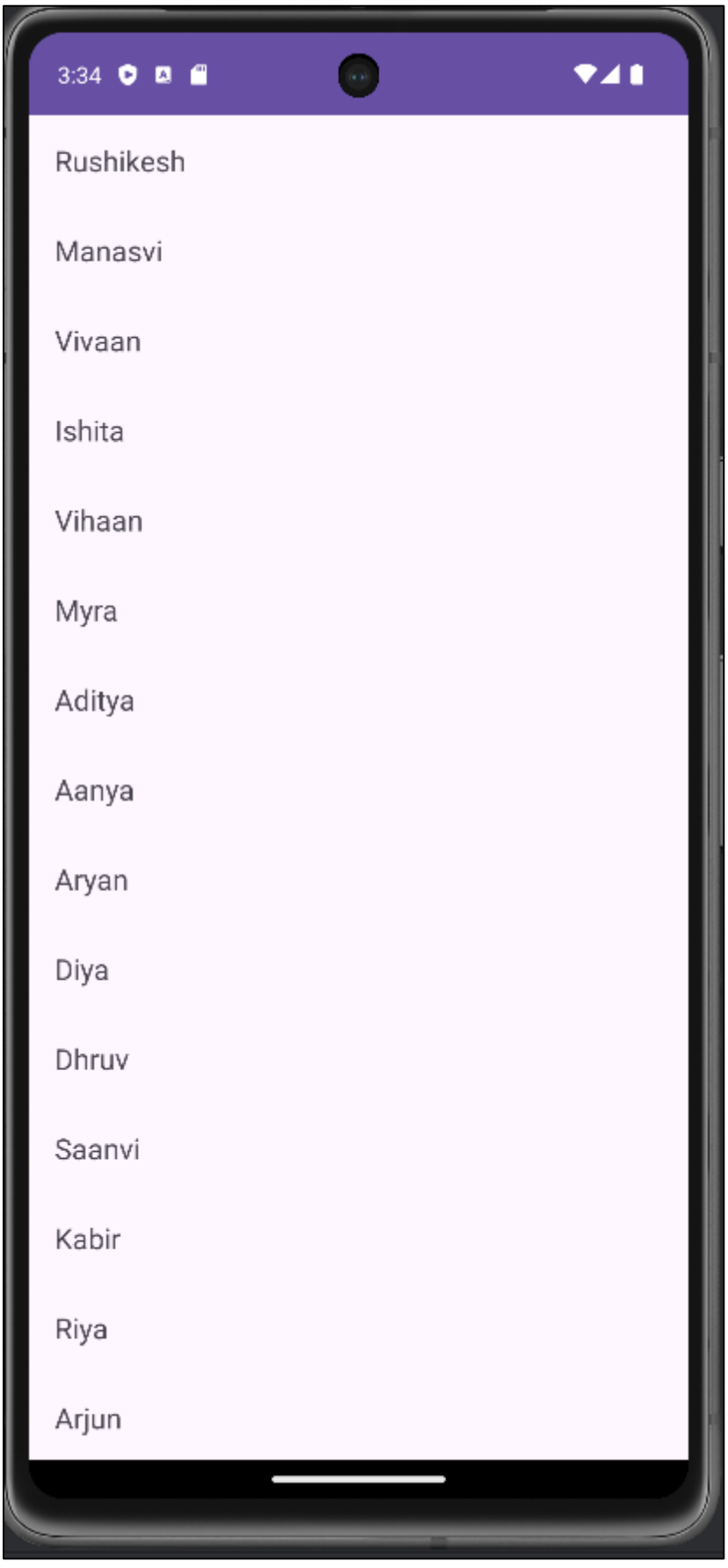
MyAdapter.java

```
package com.example.practical6;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;
public class MyAdapter extends RecyclerView.Adapter<MyAdapter.MyViewHolder> {
    private List<String> dataList;
    public MyAdapter(List<String> dataList) {
        this.dataList = dataList;
    }
    @NonNull
    @Override
    public MyViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View view = LayoutInflater.from(parent.getContext())
                .inflate(R.layout.items_layout, parent, false);
        return new MyViewHolder(view);
    }
    @Override
    public void onBindViewHolder(@NonNull MyViewHolder holder, int position) {
        String data = dataList.get(position);
        holder.textView.setText(data);
    }
    @Override
    public int getItemCount() {
        return dataList.size();
    }
    static class MyViewHolder extends RecyclerView.ViewHolder {
        TextView textView;
        public MyViewHolder(@NonNull View itemView) {
            super(itemView);
```

```
            textView = itemView.findViewById(R.id.textView);
        }
    }
}
```

OUTPUT:



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PRACTICAL 7

AIM: Demonstrate loading a list of books in the background using AsyncTaskLoader, displaying the results with a progress bar, and managing UI elements using LinearLayout.

CODE:

Book.java

```
package com.example.practical7_9142;
public class Book {
    private String title, author;
    public Book(String title, String author) {
        this.title = title;
        this.author = author;
    }
    public String getTitle() {
        return title;
    }
    public String getAuthor() {
        return author;
    }
}
```

BookTaskLoader.java

```
package com.example.practical7_9142;
import android.content.Context;
import android.os.SystemClock;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.loader.content.AsyncTaskLoader;
import java.util.ArrayList;
import java.util.List;

public class BookTaskLoader extends AsyncTaskLoader<List<Book>> {
    private String param1, param2;
    public BookTaskLoader(@NonNull Context context, String param1, String param2) {
        super(context);
        this.param1 = param1;
        this.param2 = param2;
    }
    @Nullable
    @Override
    public List<Book> loadInBackground() {
        List<Book> list = new ArrayList<>();
        list.add(new Book("Designing Destiny", "Daaji Patel"));
        list.add(new Book("To Kill a Mockingbird", "Harper Lee"));
        list.add(new Book("The Catcher in the Rye", "J.D. Salinger"));
        SystemClock.sleep(2000); // Simulating delay
        return list;
    }
}
```

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MainActivity.java

```
package com.example.practical7_9142;

import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.ProgressBar;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
import androidx.loader.app.LoaderManager;
import androidx.loader.content.Loader;
import java.util.List;
public class MainActivity extends AppCompatActivity
        implements LoaderManager.LoaderCallbacks<List<Book>>,
Loader.OnLoadCanceledListener<List<Book>> {
    private static final String LOG_TAG = "BookLoaderExample";
    private static final int LOADER_ID_BOOK = 30000;
    Button load, cancel;
    ProgressBar progress;
    TextView text;
    private static final String KEY_PARAM1 = "Key1", KEY_PARAM2 = "Key2";
    private LoaderManager lm;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        load = findViewById(R.id.load);
        cancel = findViewById(R.id.cancel);
        progress = findViewById(R.id.progressBar);
        text = findViewById(R.id.textView);
        progress.setVisibility(View.GONE);
        cancel.setEnabled(false);
        load.setOnClickListener(v -> clickButtonLoad());
        cancel.setOnClickListener(v -> clickButtonCancel());
        lm = LoaderManager.getInstance(this);
    }
    private void clickButtonLoad() {
        text.setText("");
        Log.i(LOG_TAG, "Loading Books");
        LoaderManager.LoaderCallbacks<List<Book>> loaderCallbacks = this;
        Bundle args = new Bundle();
        args.putString(KEY_PARAM1, "Param1 Value");
        args.putString(KEY_PARAM2, "Param2 Value");
        Loader<List<Book>> loader = lm.initLoader(LOADER_ID_BOOK, args, loaderCallbacks);
        loader.registerOnLoadCanceledListener(this);
        loader.forceLoad();
    }
```

```
private void clickButtonCancel() {
    Log.i(LOG_TAG, "Canceling Book Load");
    Loader<List<Book>> loader = lm.getLoader(LOADER_ID_BOOK);
    if (loader != null) {
        loader.cancelLoad();
    }
}
@NonNull
@Override
public Loader<List<Book>> onCreateLoader(int id, @Nullable Bundle args) {
    Log.i(LOG_TAG, "onCreateLoader");
    progress.setVisibility(View.VISIBLE);
    if (id == LOADER_ID_BOOK) {
        load.setEnabled(false);
        cancel.setEnabled(true);
        String param1 = args.getString(KEY_PARAM1);
        String param2 = args.getString(KEY_PARAM2);
        return new BookTaskLoader(MainActivity.this, param1, param2);
    }
    throw new RuntimeException("Unknown loader ID");
}
@Override
public void onLoadFinished(@NonNull Loader<List<Book>> loader, List<Book> data) {
    Log.i(LOG_TAG, "onLoadFinished");
    if (loader.getId() == LOADER_ID_BOOK) {
        lm.destroyLoader(loader.getId());
        StringBuilder sb = new StringBuilder();
        for (Book book : data) {
            sb.append("Title: ").append(book.getTitle()).append("\n")
                    .append("Author: ").append(book.getAuthor()).append("\n\n");
        }
        text.setText(sb.toString());
        progress.setVisibility(View.GONE);
        load.setEnabled(true);
        cancel.setEnabled(false);
    }
}
@Override
public void onLoaderReset(@NonNull Loader<List<Book>> loader) {
    Log.i(LOG_TAG, "onLoadReset");
    text.setText("");
}
@Override
public void onLoadCanceled(@NonNull Loader<List<Book>> loader) {
    Log.i(LOG_TAG, "onLoadCancelled");
    if (loader.getId() == LOADER_ID_BOOK) {
        lm.destroyLoader(loader.getId());
        progress.setVisibility(View.GONE);
        load.setEnabled(true);
        cancel.setEnabled(false);
```

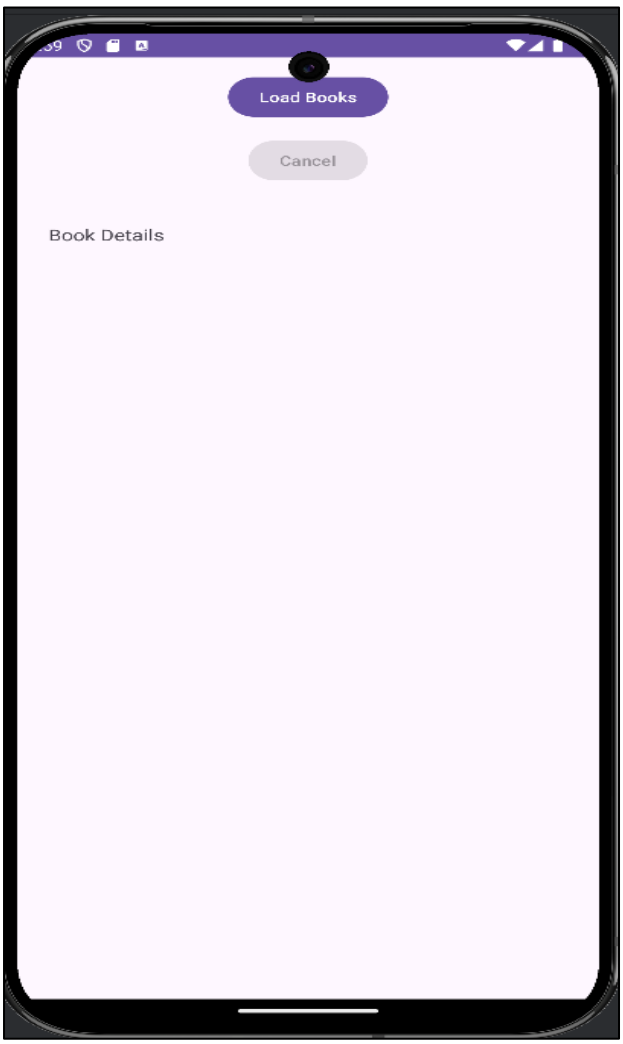
```
        }
    }
}
```

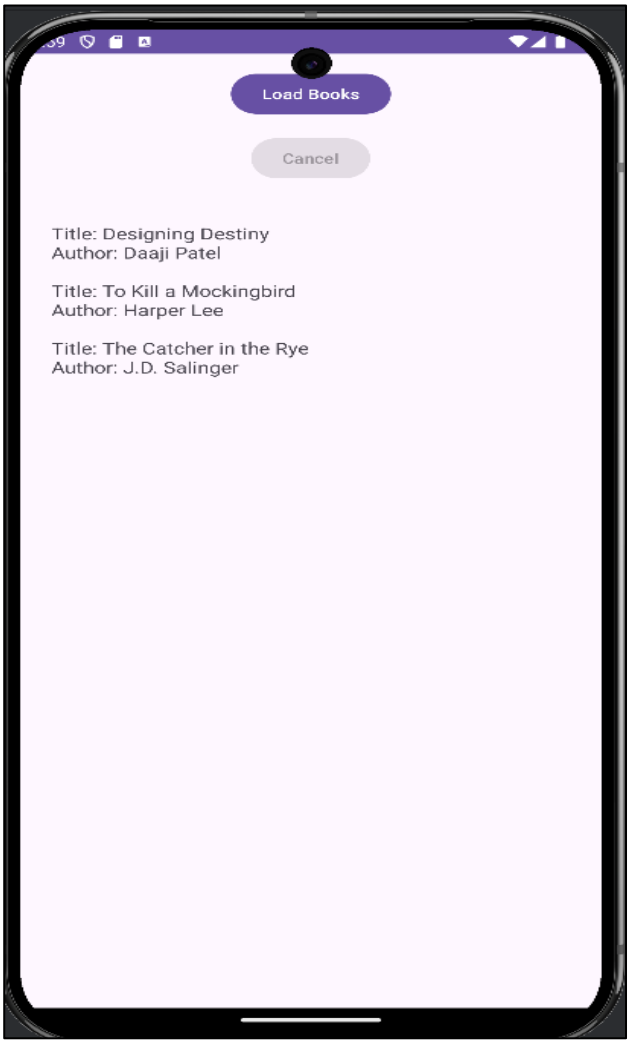
activity_main.java

```
<?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:padding="16dp">

    <!-- Load Button -->
    <Button
        android:id="@+id/load"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Load Books"
        android:layout_gravity="center_horizontal"
        android:layout_marginBottom="16dp"/>

    <!-- Cancel Button -->
    <Button
        android:id="@+id/cancel"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Cancel"
        android:enabled="false"
        android:layout_gravity="center_horizontal"
        android:layout_marginBottom="16dp"/>

    <!-- ProgressBar -->
    <ProgressBar
        android:id="@+id/progressBar"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:visibility="gone"
        android:layout_gravity="center_horizontal"
        android:layout_marginBottom="16dp"/>

    <!-- TextView to Display Book Information -->
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Book Details"
        android:textSize="16sp"
        android:gravity="start"
        android:layout_marginTop="16dp"
        android:padding="8dp" />
```

</LinearLayout>

OUTPUT:





NAME:RUSHIKESH MHASKE
ROLL NO: 9142

PRACTICAL 9

AIM: Create an android app to save user data in a database and use of different queries.

activity_main.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">
<EditText
android:id="@+id/edtName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_marginStart="93dp"
android:layout_marginTop="154dp"
android:ems="10"
android:inputType="text"
android:hint="Enter Name" />
<EditText
android:id="@+id/edtAge"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_marginStart="93dp"
android:ems="10"
android:inputType="text"
android:hint="Enter Age" />
<EditText
android:id="@+id/edtPost"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_marginStart="93dp"
android:ems="10"
android:inputType="text"
android:hint="Enter Designation" />
<Button
android:id="@+id/btnAdd"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
android:text="Add to Database" />
<Button
android:id="@+id/btnShow"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentStart="true"
android:layout_alignParentEnd="true"
```

```
android:text="Show Records" />
<TextView
android:id="@+id/textView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="" />
</LinearLayout>
```

MainActivity.java

```
package com.example.pract9;

import android.annotation.SuppressLint;
import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
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 {

EditText strName, strAge, strPost;
TextView records;
Button show, add;
DBHelper help = new DBHelper(this);

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

strName = findViewById(R.id.edtName);
strAge = findViewById(R.id.edtAge);
strPost = findViewById(R.id.edtPost);
records = findViewById(R.id.textView); // Ensure to link the correct TextView
add = findViewById(R.id.btnAdd);
show = findViewById(R.id.btnShow);
add.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
String name = strName.getText().toString().trim();
String a = strAge.getText().toString().trim();
String designation = strPost.getText().toString().trim();
if (!name.isEmpty() && !a.isEmpty() && !designation.isEmpty()) {
try {
int age = Integer.parseInt(a);
SQLiteDatabase db = help.getWritableDatabase();
```

```
ContentValues cv = new ContentValues();
cv.put("name", name);
cv.put("age", age);
cv.put("designation", designation);
db.insert("emp", null, cv); // Ensure the table name is 'emp' as in DBHelper
db.close(); // Always close the database connection
} catch (NumberFormatException e) {
e.printStackTrace();
        }
    }
  }
});
show.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
SQLiteDatabase db = help.getReadableDatabase();
Cursor cursor = db.rawQuery("SELECT * FROM emp", null); // Query the 'emp' table
if (cursor != null && cursor.getCount() > 0) {
StringBuilder data = new StringBuilder();
while (cursor.moveToNext()) {
@SuppressLint("Range") String name = cursor.getString(cursor.getColumnIndex("name"));
@SuppressLint("Range") int age = cursor.getInt(cursor.getColumnIndex("age"));
@SuppressLint("Range") String designation = cursor.getString(cursor.getColumnIndex("designation"));
data.append("Name: ").append(name)
.append("\nAge: ").append(age)
.append("\nDesignation: ").append(designation)
.append("\n\n");
}
records.setText(data.toString()); // Display the records in the TextView
cursor.close(); // Always close the cursor after use
} else {
records.setText("No records found");
}
db.close(); // Close the database connection after using it
}
});
}
}
```

DBHelper.java

```
package com.example.pract9;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DBHelper extends SQLiteOpenHelper {
static String dbname = "employee"; // Database name
static int version = 1;
```

```
public DBHelper(Context context) {
super(context, dbname, null, version);
}
@Override
public void onCreate(SQLiteDatabase db) {
// Create the 'emp' table
String query = "CREATE TABLE emp (id INTEGER PRIMARY KEY AUTOINCREMENT, name TEXT,
age INTEGER, designation TEXT)";
db.execSQL(query);
}
@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
db.execSQL("DROP TABLE IF EXISTS emp");
onCreate(db);
}
}
```

OUTPUT: