ANDROID APPLICATION DEVELOPMENT

SUBJECT CODE: PCA20D04J

M. C. A.- II SEMESTER/ I YEAR

Name   **: Rohit Kumar**

Registration No. : RA2232241030037

Even Semester (2022-23)

**DEPARTMENT OF COMPUTER APPLICATIONS SRM
IST, NCR CAMPUS MODINAGAR**

(A Constituent of SRM University, Chennai T.N.)
Delhi-Meerut Road, Sikri Kalan, Modinagar – 201204
Ghaziabad (U.P.)

BONAFIDE CERTIFICATE

Registration No. RA2232241030037

Certified to be the bonafide record of work done by **Rohit Kumar** *of 2nd semester, 1st year M. C. A. degree course in SRM INSTITUTE OF SCIENCE & TECHNOLOGY, DELHI-NCR Campus for the Department of* **Computer Applications,** *in Android Application Development (PCA20D04J) during the academic year 2022-23.*

Lab In charge   **Head of the department**

Submitted for the university examination held on_____/_____/_____.

Examiner-I   *Examiner-I*

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Program 1

Aim: Write an application to create Login page with toast message as "welcome to the Android World".

Code:

activity_main.xml

```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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/bg1"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/signin"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="50dp"
        android:layout_marginEnd="50dp"
        android:layout_marginBottom="50dp"
        android:gravity="center"
        android:text="Sign in"
        android:textColor="@color/white"
        android:textSize="35dp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/signin"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        android:background="#30ffffff"
```

```
android:drawableLeft="@drawable/baseline_person_outline_24"
    android:drawablePadding="20dp"
    android:hint="Username"
    android:padding="20dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white" />
  <EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/password"
    android:layout_below="@+id/username"
    android:background="#30ffffff"
    android:hint="Password"
    android:textColorHint="@color/white"
    android:textColor="@color/white"
    android:layout_margin="10dp"
    android:padding="20dp"
    android:drawableLeft="@drawable/baseline_info_24"
    android:drawablePadding="20dp"
    android:inputType="textPassword"
    />
  <com.google.android.material.button.MaterialButton
    android:id="@+id/loginbtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/password"
    android:layout_marginTop="28dp"
    android:layout_marginBottom="20dp"
    android:text="LOGIN"
    android:textSize="20dp"
    android:layout_centerHorizontal="true"/>
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/forgotpass"
    android:layout_below="@+id/loginbtn"
    android:text="Forgot password"
    android:textColor="@color/white"
    android:layout_centerHorizontal="true"
    android:layout_margin="20dp" />
  <TextView
```

```xml
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="or sign in with"
      android:textColor="@color/white"
      android:id="@+id/others"
      android:layout_centerHorizontal="true"
      android:layout_above="@+id/socialicons"
      />
  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/socialicons"
    android:layout_alignParentBottom="true"
    android:gravity="center">
    <ImageView
      android:layout_width="48dp"
      android:layout_height="48dp"
      android:layout_margin="20dp"
      android:src="@drawable/google"/>
    <ImageView
      android:layout_width="48dp"
      android:layout_height="48dp"
      android:layout_margin="20dp"
      android:src="@drawable/fb"/>
    <ImageView
      android:layout_width="48dp"
      android:layout_height="48dp"
      android:layout_margin="20dp"
      android:src="@drawable/twiter"/>
  </LinearLayout>
</RelativeLayout>
```

MainActivity.Java

```java
package com.example.myloginapp;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;
```

```java
import com.google.android.material.button.MaterialButton;

public class MainActivity extends AppCompatActivity {

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

        TextView username =(TextView)
findViewById(R.id.username);
        TextView password =(TextView)
findViewById(R.id.password);

        MaterialButton loginbtn = (MaterialButton)
findViewById(R.id.loginbtn);

        //admin and admin

        loginbtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (username.getText().toString().equals("admin") &&
password.getText().toString().equals("admin")) {
                    //correct
                    Toast.makeText(MainActivity.this, "Welcom to the
Android world", Toast.LENGTH_SHORT).show();
                }else
                    //incorrect
                    Toast.makeText(MainActivity.this, "LOGIN FAILED
!!!", Toast.LENGTH_SHORT).show();

            }
        });
    }
}
```
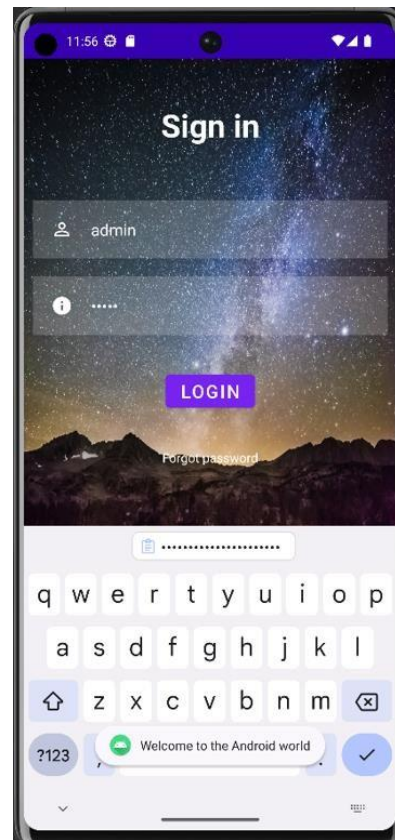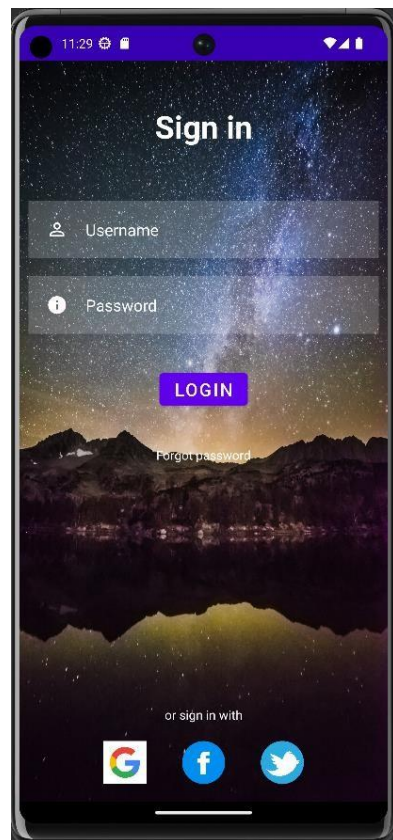
Output:

Program 2

Aim: Write an application to Student registration form with toast message as "student registered successfully"

Code:

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity">
        <EditText
            android:id="@+id/Username"
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:layout_below="@+id/lastname"
            android:layout_centerHorizontal="true"
            android:layout_marginTop="20dp"
            android:ems="20"
            android:hint="Desired Username"
            android:inputType="textPersonName"
            android:singleLine="true" />
        <EditText
            android:id="@+id/firstname"
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:layout_alignLeft="@+id/lastname"
            android:layout_alignParentTop="true"
            android:ems="20"
            android:hint="Enter your first name"
            android:inputType="textPersonName"
            android:singleLine="true" />
        <EditText
            android:id="@+id/pass"
```

```xml
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/Username"
      android:layout_below="@+id/Username"
      android:layout_marginTop="20dp"
      android:ems="20"
      android:hint="Enter password"
      android:inputType="textPassword"
      android:singleLine="true" />
  <EditText
      android:id="@+id/ConfirmPass"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/pass"
      android:layout_below="@+id/pass"
      android:layout_marginTop="20dp"
      android:ems="20"
      android:hint="Re_enter password"
      android:inputType="textPassword"
      android:singleLine="true" />
  <EditText
      android:id="@+id/Email"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/ConfirmPass"
      android:layout_below="@+id/ConfirmPass"
      android:layout_marginTop="20dp"
      android:ems="20"
      android:hint="Enter Valid Email Id (Optional)"
      android:inputType="textEmailAddress"
      android:singleLine="true" />
  <EditText
      android:id="@+id/lastname"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/Username"
      android:layout_below="@+id/firstname"
      android:layout_marginTop="20dp"
      android:ems="20"
      android:hint="Enter last name"
      android:inputType="textPersonName"
      android:singleLine="true" />
  <Button
```

```
        android:id="@+id/button1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/Email"
        android:layout_below="@+id/Email"
        android:layout_marginTop="35dp"
        android:text="register" />
    </RelativeLayout>
</ScrollView>
```

MainActivity.Java

```java
package com.example.registrationtoast;

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.text.TextUtils;
import android.util.Patterns;
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 {
    EditText firstName;
    EditText lastName;
    EditText Dusername;
    EditText email;
    Button register;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        firstName = findViewById(R.id.firstname);
        lastName = findViewById(R.id.lastname);
        Dusername  = findViewById(R.id.Username);
        email = findViewById(R.id.Email);
        register = findViewById(R.id.button1);
        register.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
        public void onClick(View view) {checkDataEntered();
        Toast.makeText(MainActivity.this,"Student registered
        successfully",Toast.LENGTH_SHORT).show();
        }
    });
  }
  boolean isEmail(EditText text) {
     CharSequence email = text.getText().toString();
     return (!TextUtils.isEmpty(email) && Patterns.EMAIL_ADDRESS.matcher(email).matches()); }
  boolean isEmpty(EditText text) {
     CharSequence str = text.getText().toString();
     return TextUtils.isEmpty(str); } void
  checkDataEntered() {
     if (isEmpty(firstName)) {
     Toast t = Toast.makeText(this,"first name required", Toast.LENGTH_SHORT); t.show(); }
     if (isEmpty(lastName)) {
        lastName.setError("Last name is required"); }
     if (isEmail(email) == false) {
        email.setError("Enter valid email!");
     }
  }
}
```

Output:
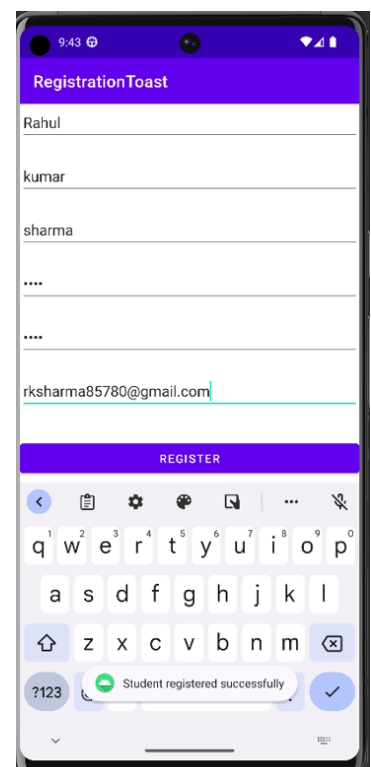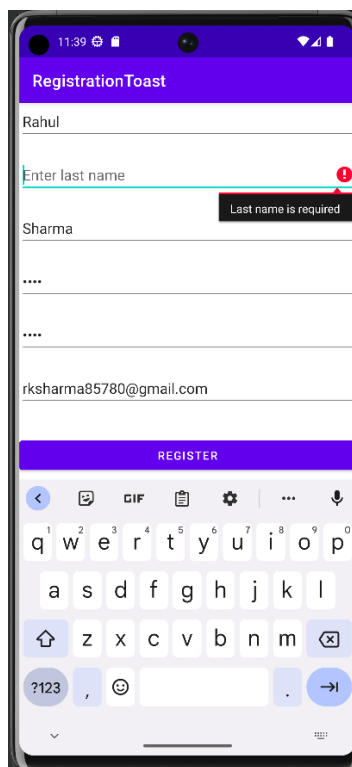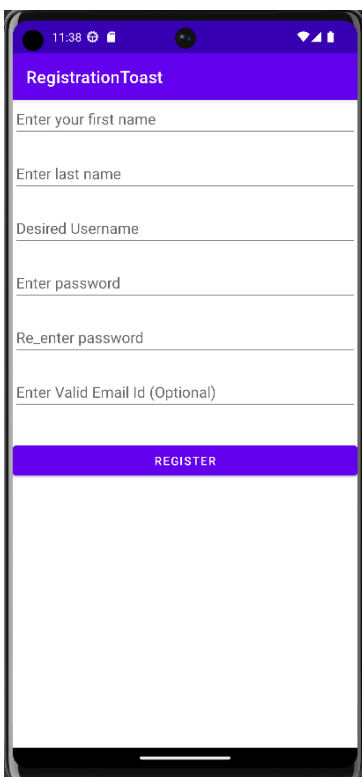
Program 3

Aim: Write an application to Implement explicit intent.

Code:

activity_main.xml

```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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#FF018786"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/eidttTextIndex"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="40dp"
        android:layout_marginTop="40dp"
        android:layout_marginEnd="40dp"
        android:layout_marginBottom="40dp"
        android:background="#30ffffff"
        android:backgroundTint="#FF6200EE"
        android:drawablePadding="20dp"
        android:hint="Write Image Index"
        android:inputType="number"
        android:padding="20dp" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/eidttTextIndex"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="20dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="20dp"
        android:layout_marginBottom="20dp"
```

```
    android:backgroundTint="@color/design_default_color_secondary"
    android:onClick="onIndexSendButtonClicked"
    android:text="Click" />

<TextView
    android:id="@+id/txt1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/button"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="123dp"
    android:layout_marginEnd="123dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 1 for Burger"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/txt2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/txt1"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="125dp"
    android:layout_marginTop="5dp"
    android:layout_marginEnd="133dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 2 for Pizza"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/txt3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/txt2"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="125dp"
```

```
    android:layout_marginTop="-2dp"
    android:layout_marginEnd="119dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 3 for Biryani"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/txt4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/txt3"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="123dp"
    android:layout_marginTop="0dp"
    android:layout_marginEnd="133dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 4 for Pasta"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/txt5"
    android:layout_width="218dp"
    android:layout_height="wrap_content"
    android:layout_below="@id/txt4"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="123dp"
    android:layout_marginTop="4dp"
    android:layout_marginEnd="70dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 5 for Ice Cream"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/txt6"
    android:layout_width="215dp"
```

```xml
    android:layout_height="wrap_content"
    android:layout_below="@id/txt5"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="124dp"
    android:layout_marginTop="0dp"
    android:layout_marginEnd="72dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 6 for Cup Cake"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:id="@+id/txt7"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/txt6"
    android:layout_alignParentStart="true"
    android:layout_alignParentEnd="true"
    android:layout_marginStart="124dp"
    android:layout_marginTop="7dp"
    android:layout_marginEnd="85dp"
    android:backgroundTint="@color/design_default_color_secondary"
    android:text="Press 7 for Fruit Salad"
    android:textColor="@color/white"
    android:textSize="20dp"
    android:textStyle="bold" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/txt8"
    android:text="Press 8 for Shake"
    android:textSize="20dp"
    android:textStyle="bold"
    android:backgroundTint="@color/design_default_color_secondary"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/txt7"
    android:textColor="@color/white"/>
</RelativeLayout>
```

MainActivity.Java

```java
package com.example.explicitintent;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity
{
  @Override
  protected void onCreate(Bundle savedInstanceState)
  {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
  }
  public void onIndexSendButtonClicked(View v){
     Intent intent = new Intent(this,SecondActivity.class);
     EditText editText = (EditText)
findViewById(R.id.eidttTextIndex);
     String index = editText.getText().toString();
     intent.putExtra("ImageIndex",index);
     startActivity(intent);
   }
}
```

SecondActivity.xml

```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:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".SecondActivity">

  <ImageView
    android:id="@+id/imageViewFood"
    android:layout_width="342dp"
    android:layout_height="265dp"
```

```
        android:layout_marginTop="16dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.496"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
app:srcCompat="@drawable/burger" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

SecondActivity.java

```java
package com.example.explicitintent;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ImageView;
public class SecondActivity extends AppCompatActivity
{

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        Bundle bundle = getIntent().getExtras();
        if(bundle !=null){
            String imgIndex = bundle.getString("ImageIndex");
            setImage(imgIndex);
        }
    }
    private void setImage(String index)
    {
        ImageView imgView = (ImageView)
findViewById(R.id.imageViewFood);
        switch (index)
        {
            case "1":
                imgView.setImageResource(R.drawable.burger);
                break;
            case "2":
                imgView.setImageResource(R.drawable.pizza);
                break;
            case "3":
                imgView.setImageResource(R.drawable.biryani);
```

```
                    break;
                case "4":
                    imgView.setImageResource(R.drawable.pasta);
                    break;
                case "5":
                    imgView.setImageResource(R.drawable.ice_cream);
                    break;
                case "6":
                    imgView.setImageResource(R.drawable.cup_cake);
                    break;
                case "7":
                    imgView.setImageResource(R.drawable.fruit_salad);
                    break;
                case "8":
                    imgView.setImageResource(R.drawable.shake);
                    break;
                default:
                    imgView.setImageResource(R.drawable.welcome);
                    break;
            }
        }
}
```

Output:
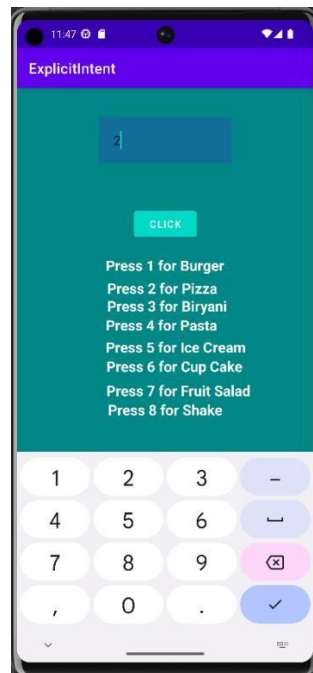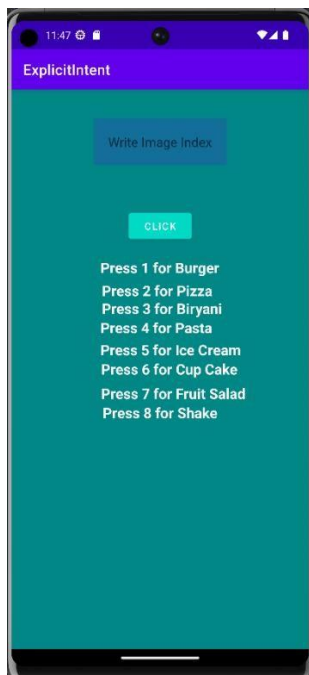
Progran-4

Aim: Write an application to Implement implicit intent.

Code:

activity_main.xml

```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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#FFBB86FC"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/editText1"
        android:layout_width="330dp"
        android:layout_height="66dp"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="136dp"
        android:autofillHints=""
        android:ems="10"
        android:hint="Enter the website"
        android:importantForAutofill="no"
        android:inputType="text"
        android:textColorHint="red"
        android:textSize="20sp"
        app:layout_constraintBottom_toTopOf="@+id/button1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.559"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.666" />
    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="60dp"
        android:layout_below="@+id/editText1"
        android:layout_centerHorizontal="true"
```

```xml
        android:text="Click"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.528"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.6" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Implicit Intent"
        android:textColor="#FF6200EE"
        android:textSize="40sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.178" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.xml

```java
package com.example.implicitapplication;
import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import  android.net.Uri;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends Activity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final EditText editText1 = (EditText)findViewById(R.id.editText1);
        Button button = (Button)findViewById(R.id.button1);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```
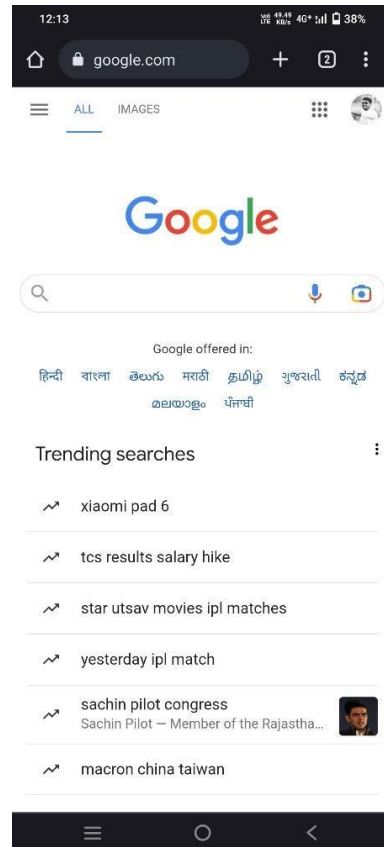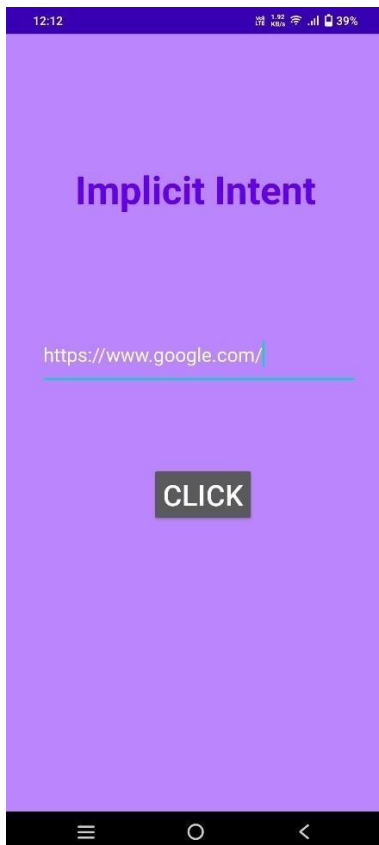
```
        String url = editText1.getText().toString();
        Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
startActivity(intent); }
    });
  }
}
```

Output:

Program-5

Aim: Write an application to Implement Time Picker.

Code:

activity_main.xml

```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:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">
  <TimePicker
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/timePicker"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    />
  <TextView
    android:layout_width="match_parent"
    android:layout_height="50dp"
    android:id="@+id/txtTime"
    app:layout_constraintBottom_toBottomOf="@id/timePicker"
    android:layout_marginTop="20dp"
    android:layout_marginLeft="40dp"
    android:layout_marginRight="40dp"
    android:gravity="center"
    />

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

MainActivity.java

```java
package com.example.timepicker;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.TimePicker;

public class MainActivity extends AppCompatActivity {
    TimePicker timePicker;
    TextView timetxt;

    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        timePicker=findViewById(R.id.timePicker);
        timetxt=findViewById(R.id.txtTime);
timePicker.setOnTimeChangedListener(new
TimePicker.OnTimeChangedListener() {
            @Override
            public void onTimeChanged(TimePicker timePicker, int
hourofDay, int minute) {
                timetxt.setText(hourofDay+":"+minute)}
        });
    }
}
```

Output:
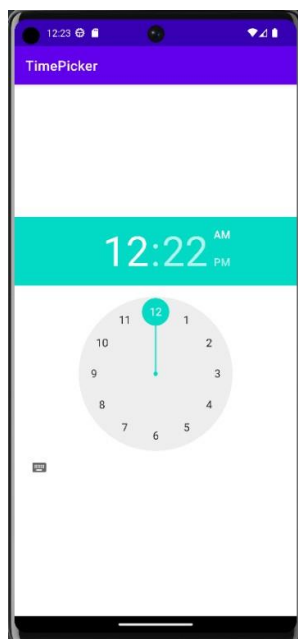
Program-6

Aim: Write an application to Implement Date Picker.

Code:

activity_main.xml

```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:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">

  <DatePicker
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/datePicker"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
  <TextView
    android:layout_width="match_parent"
    android:layout_height="50dp"
    android:id="@+id/txtDate"
    app:layout_constraintBottom_toBottomOf="@id/datePicker"
    android:layout_marginRight="5dp"
    android:layout_marginLeft="50dp"
    android:gravity="center"
    />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.datepicker;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
```

```java
import android.os.Bundle;
import android.widget.DatePicker;
import android.widget.TextView;
import java.util.Calendar;
public class MainActivity extends AppCompatActivity {
    DatePicker datePicker;
    TextView datetxt;
 @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        datePicker=findViewById(R.id.datePicker);
        datetxt=findViewById(R.id.txtDate);
        Calendar calendar=Calendar.getInstance();
        datePicker.init(calendar.get(Calendar.YEAR), calendar.get(Calendar.MONTH),
calendar.get(Calendar.DAY_OF_MONTH), new DatePicker.OnDateChangedListener() {
            @Override
            public void onDateChanged(DatePicker datePicker, int year, int monthofYear, int dayofMonth) {
                datetxt.setText(dayofMonth+"-"+monthofYear+"-"+year);
            }
        });
    }
}
```

Output:
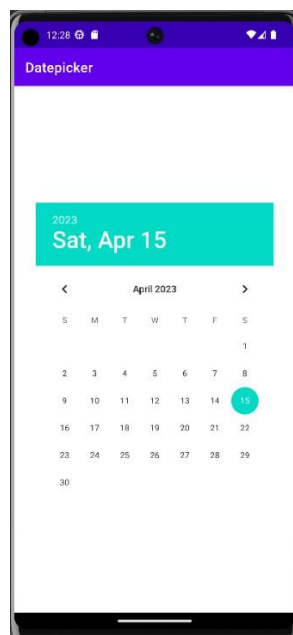
Program-7

Aim: Write an application to implement Student Registration form using Listview.
Code:

activity_main.xml

```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:layout_width="match_parent"
android:layout_height="match_parent"     android:orientation="vertical"
tools:context=".MainActivity">
  <TableRow
    android:id="@+id/row0"
android:layout_width="match_parent"
android:layout_height="wrap_content" />
    <TextView
      android:id="@+id/txt1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"          android:text="Registration From "
android:textAlignment="center"
android:textAppearance="@style/TextAppearance.AppCompat.Display2"></TextView>
</TableRow>
<TableRow
    android:id="@+id/row1"
android:layout_width="match_parent"
android:layout_height="wrap_content" />
    <EditText
      android:id="@+id/FirstName"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_margin="8dp"
android:layout_weight="1"          android:hint="Enter FullName"
android:inputType="textPersonName" />
  </TableRow>
  <TableRow>
    <EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```xml
android:layout_margin="8dp"
android:layout_weight="1"
android:hint="DOB" />
    </TableRow>
    <TableRow>
      <EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="8dp"
android:layout_weight="1"
android:hint="Enter Gmail"
android:inputType="textPersonName" />
    </TableRow>
    <TableRow>
      <EditText
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="8dp"
android:layout_weight="1"          android:hint="Password"
android:inputType="textPassword" />     </TableRow>
    <TableRow>        <TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/Branch"
android:layout_margin="10dp"
android:layout_weight="1"          android:text="Select
Branch"></TextView>
    </TableRow>
    <TableRow>
        <ListView          android:id="@+id/list"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_margin="8dp"
android:layout_weight="1" />
</TableRow>
<TableRow>
    <Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/Submit"          android:layout_margin="10dp"
android:layout_weight="1"
android:text="Submit"></Button>
    </TableRow> </TableLayout>
```

MainActivity.Java

```java
package com.example.android.listviewregi;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.text.Layout;
import android.view.View; import
android.widget.ArrayAdapter;
import android.widget.*;
 import java.util.ArrayList;
public class MainActivity extends AppCompatActivity {
ListView l;
   String Branch[] = { "CSE", "ML",  "IT", "MBA"};
   @Override
   protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
l = findViewById(R.id.list);
ArrayAdapter<String> arr;        arr = new ArrayAdapter<String>(this,
ndroid.appcompat.R.layout.support_simple_spinner_dropdown_item, Branch);
l.setAdapter(arr);
     Button button = (Button) findViewById(R.id.Submit);
button.setOnClickListener( new View.OnClickListener(){
       public void onClick( View v){
         Toast.makeText(getApplicationContext(),"Response Submit",
Toast.LENGTH_LONG).show();  }  });
   }}
```

Output:

Program-8

Aim: Write an application to Implement context menu.

Code:

activity_main.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:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">
  <ListView
    android:layout_width="match_parent
    android:layout_height="match_parent"
    android:id="@+id/contacts_list"/>

</LinearLayout>
```

context_menubar.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item
    android:title="Call"
    android:id="@+id/call"/>
  <item
    android:title="message"
    android:id="@+id/message"/>
</menu>
```

MainActivity.Java

```java
package com.example.contextmenubardemo;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
```

```java
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    ListView contacts_list;
    String[] contacts={"Sonu","Rohit","Chipti","Dhanteras"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        contacts_list=(ListView) findViewById(R.id.contacts_list);
        ArrayAdapter<String> adapter=new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1,contacts);
        contacts_list.setAdapter(adapter);
        registerForContextMenu(contacts_list);
    }

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);

        getMenuInflater().inflate(R.menu.context_menubar,menu);
    }

    @Override
    public boolean onContextItemSelected(@NonNull MenuItem item) {
        int id=item.getItemId();
        switch (id){
            case R.id.call:
```

```
        Toast.makeText(this, "calling"+item.getTitle(),
Toast.LENGTH_SHORT).show();
        return true;
      case R.id.message:
        Toast.makeText(this, "message", Toast.LENGTH_SHORT).show();
        return true;
      default:
        return super.onContextItemSelected(item);


    }
  }
}
```

Output:
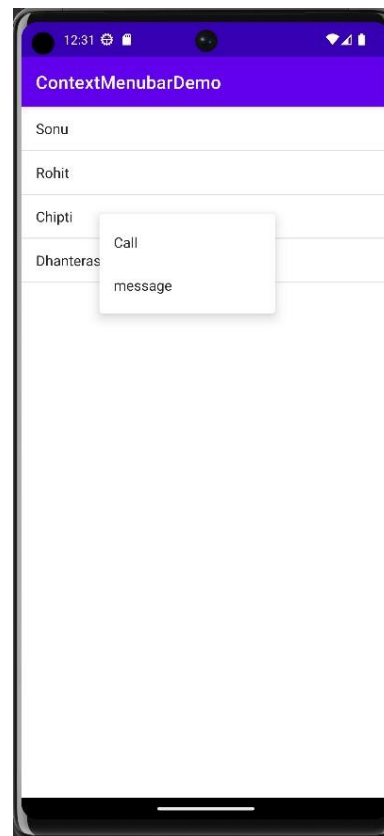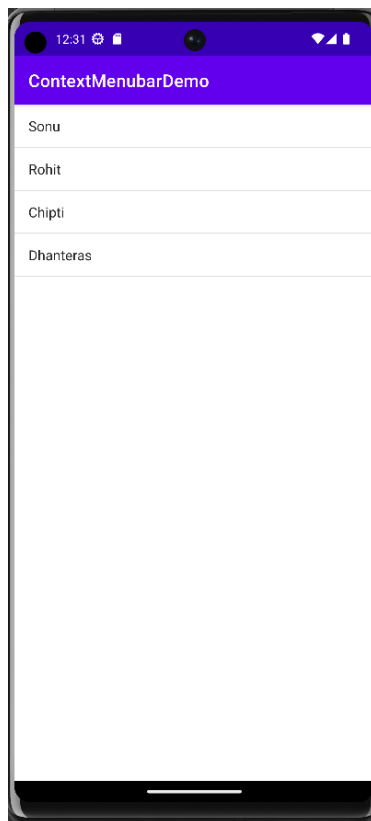
Program-9

Aim: Write an application to Implement option menu.

Code:

option_menubar.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item
    android:title="Option 1"
    android:id="@+id/option_one"/>
  <item
    android:title="Option 2"
    android:id="@+id/option_two"/>
  <item
    android:title="Option 3"
    android:id="@+id/option_three"/>
</menu>
```

MainActivity.Java

```java
package com.example.optionmenubar;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;
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.option_menubars,menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        int item_id= item.getItemId();
        switch (item_id){
            case R.id.option_one:
                Toast.makeText(this, "Option 1 clicked", Toast.LENGTH_SHORT).show();
                return true;
            case R.id.option_two:
                Toast.makeText(this, "Option 2 clicked", Toast.LENGTH_SHORT).show();
                return true;
            case R.id.option_three:
                Toast.makeText(this, "Option 3 clicked", Toast.LENGTH_SHORT).show();
                return true;
            default:
                return super.onOptionsItemSelected(item);}
    }
}
```

Output:
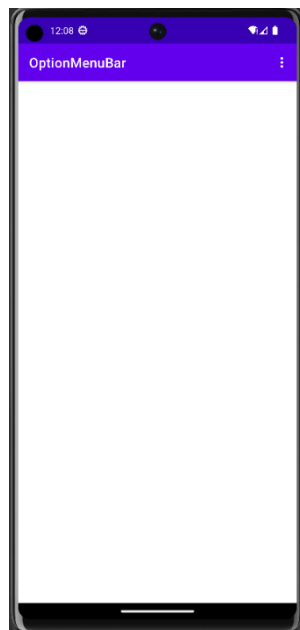
Program-10

Aim: Write an application program to show how to Set and retrieve shared preferences.

Code

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity"          tools:ignore="HardcodedText">
<TextView                                 android:id="@+id/textview"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerHorizontal="true"
android:layout_marginTop="32dp"                  android:text="Shared
Preferences  Demo"          android:textColor="@android:color/black"
android:textSize="24sp" />
    <EditText        android:id="@+id/edit1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/textview"
android:layout_marginStart="16dp"
android:layout_marginTop="8dp"
android:layout_marginEnd="16dp"        android:hint="Enter
your Name"        android:padding="10dp" />
   <EditText        android:id="@+id/edit2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@+id/edit1"
android:layout_marginStart="16dp"
android:layout_marginTop="8dp"
android:layout_marginEnd="16dp"
android:hint="Enter your Age"
android:padding="10dp"
android:inputType="number" />
</RelativeLayout>
```

MainActivity.Java

```java
import android.content.Context;
import android.content.SharedPreferences;
import
android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import
android.widget.EditText;
import
android.widget.TextView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {
    EditText userName;
    EditText
    password;
    TextView
    dataView;

    @Override
    protected void onCreate(Bundle
        savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
                userName = (EditText)
        findViewById(R.id.userNameInput);password = (EditText)
        findViewById(R.id.passwordInput);
        dataView = (TextView) findViewById(R.id.dataTextView);

    }

    //Save login info
    public void saveData(View view){
        SharedPreferences loginData = getSharedPreferences("userInfo", Context.MODE_PRIVATE);
        SharedPreferences.Editor editor = loginData.edit();
        editor.putString("userName",
        userName.getText().toString());
        editor.putString("password",
        password.getText().toString()); editor.apply();

        Toast.makeText(this,"Saved",Toast.LENGTH_LONG).show();
                }

    public void getData(View view){
        SharedPreferences loginData = getSharedPreferences("userInfo", Context.MODE_PRIVATE);
        String name = loginData.getString("userName", "");
        String pw = loginData.getString("password","");
        String msg = "Saved User Name: " + name + "\nSaved Password: " +
```

```
        pw;dataView.setText(msg);
    }
}
```

Output:
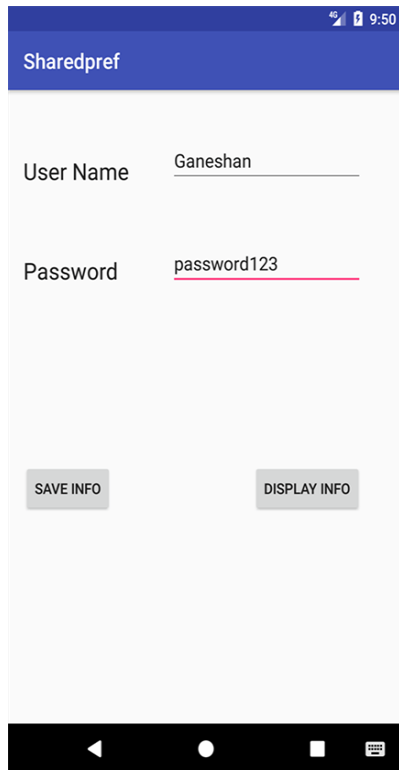
Click on save button

Click on display button

Program-11

Aim: To develop a simple Android Application that makes use of
Database

Code:

activity_main.xml

```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">
  <TextView
    android:id="@+id/txt1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="50dp"
    android:layout_y="20dp"
    android:text="Student Details"
    android:textSize="30sp"
    android:layout_centerHorizontal="true"/>
  <TextView
    android:id="@+id/txt2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="110dp"
    android:text="Enter Rollno:"
    android:layout_below="@+id/txt1"
    android:textSize="20sp" />

  <EditText
    android:id="@+id/Rollno"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="100dp"
    android:inputType="number"
    android:layout_below="@id/txt2"
    android:textSize="20sp" />
```
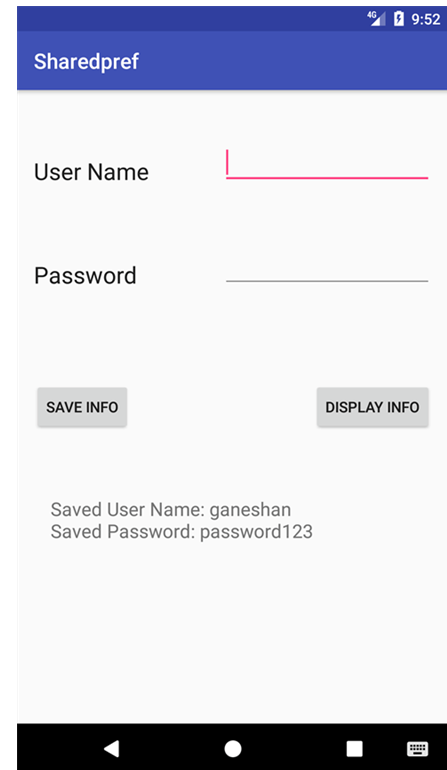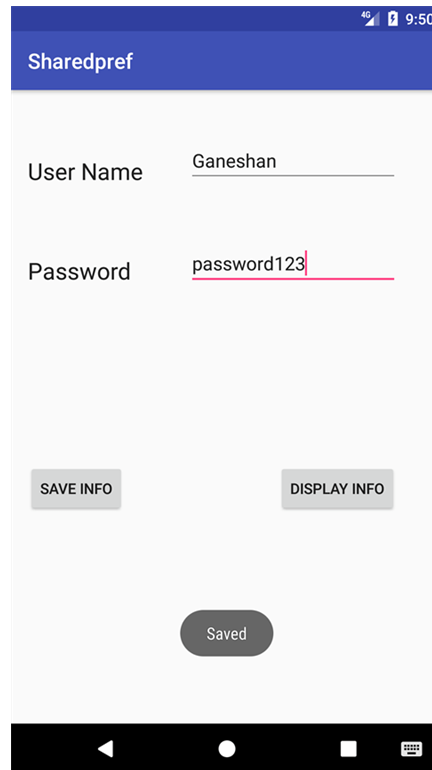
```xml
<TextView
  android:id="@+id/txt3"
  android:layout_below="@id/Rollno"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_x="20dp"
  android:layout_y="160dp"
  android:text="Enter Name:"
  android:textSize="20sp" />

<EditText
  android:id="@+id/Name"
  android:layout_width="150dp"
  android:layout_height="wrap_content"
  android:layout_x="175dp"
  android:layout_y="150dp"
  android:inputType="text"
  android:layout_below="@id/txt3"
  android:textSize="20sp" />

<TextView
  android:id="@+id/marks1"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:layout_x="20dp"
  android:layout_y="210dp"
  android:text="Enter Marks:"
  android:layout_below="@id/Name"
  android:textSize="20sp" />

<EditText
  android:id="@+id/Marks"
  android:layout_width="150dp"
  android:layout_height="wrap_content"
  android:layout_x="175dp"
  android:layout_y="200dp"
  android:inputType="number"
  android:layout_below="@id/marks1"
  android:textSize="20sp" />

<Button
  android:id="@+id/Insert"
  android:layout_width="150dp"
```

```
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="300dp"
    android:text="Insert"
    android:textSize="30dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/Marks"/>

<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="300dp"
    android:text="Delete"
    android:textSize="25dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/Insert"/>

<Button
    android:id="@+id/Update"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="400dp"
    android:text="Update"
    android:textSize="25dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/Delete"/>

<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="400dp"
    android:text="View"
    android:textSize="30dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/Update"/>

<Button
    android:id="@+id/ViewAll"
```

```
        android:layout_width="200dp"
        android:layout_height="wrap_content"
        android:layout_x="100dp"
        android:layout_y="500dp"
        android:text="View All"
        android:textSize="30dp"
        android:layout_centerHorizontal="true"
        android:layout_below="@id/View"/>

</RelativeLayout>
```

MainActivity.Java

```java
package com.example.database;

import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener
{
    EditText Rollno,Name,Marks;
    Button Insert,Delete,Update,View,ViewAll;
    SQLiteDatabase db;
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Rollno=(EditText)findViewById(R.id.Rollno);
        Name=(EditText)findViewById(R.id.Name);
        Marks=(EditText)findViewById(R.id.Marks);
        Insert=(Button)findViewById(R.id.Insert);
```

```java
        Delete=(Button)findViewById(R.id.Delete);
        Update=(Button)findViewById(R.id.Update);
        View=(Button)findViewById(R.id.View);
        ViewAll=(Button)findViewById(R.id.ViewAll);

        Insert.setOnClickListener(this);
        Delete.setOnClickListener(this);
        Update.setOnClickListener(this);
        View.setOnClickListener(this);
        ViewAll.setOnClickListener(this);

        // Creating database and table
        db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
        db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name
VARCHAR,marks VARCHAR);");
    }
    public void onClick(View view)
    {
        // Inserting a record to the Student table
        if(view==Insert)
        {
            // Checking for empty fields
            if(Rollno.getText().toString().trim().length()==0||
                  Name.getText().toString().trim().length()==0||
                  Marks.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter all values");
                return;
            }
            db.execSQL("INSERT INTO student VALUES('"+Rollno.getText()+"','"+Name.getText()+
                  "','"+Marks.getText()+"');");
            showMessage("Success", "Record added");
            clearText();
        }
        // Deleting a record from the Student table
        if(view==Delete)
        {
            // Checking for empty roll number
            if(Rollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
```

```java
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst())
        {
           db.execSQL("DELETE FROM student WHERE rollno='"+Rollno.getText()+"'");
           showMessage("Success", "Record Deleted");
        }
        else
        {
           showMessage("Error", "Invalid Rollno");
        }
        clearText();
     }
     // Updating a record in the Student table
     if(view==Update)
     {
        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
           showMessage("Error", "Please enter Rollno");
           return;
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst()) {
           db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" +
Marks.getText() +
                "' WHERE rollno='"+Rollno.getText()+"'");
           showMessage("Success", "Record Modified");
        }
        else {
           showMessage("Error", "Invalid Rollno");
        }
        clearText();
     }
     // Display a record from the Student table
     if(view==View)
     {
        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
           showMessage("Error", "Please enter Rollno");
           return;
```

```
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst())
        {
          Name.setText(c.getString(1));
          Marks.setText(c.getString(2));
        }
        else
        {
          showMessage("Error", "Invalid Rollno");
          clearText();
        }
      }
      // Displaying all the records
      if(view==ViewAll)
      {
        Cursor c=db.rawQuery("SELECT * FROM student", null);
        if(c.getCount()==0)
        {
          showMessage("Error", "No records found");
          return;
        }
        StringBuffer buffer=new StringBuffer();
        while(c.moveToNext())
        {
          buffer.append("Rollno: "+c.getString(0)+"\n");
          buffer.append("Name: "+c.getString(1)+"\n");
          buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details", buffer.toString());
      }
    }
    public void showMessage(String title,String message)
    {
      Builder builder=new Builder(this);
      builder.setCancelable(true);
      builder.setTitle(title);
      builder.setMessage(message);
      builder.show();
    }
    public void clearText()
    {
```

```
        Rollno.setText("");
        Name.setText("");
        Marks.setText("");
        Rollno.requestFocus();
    }}
```

Output:
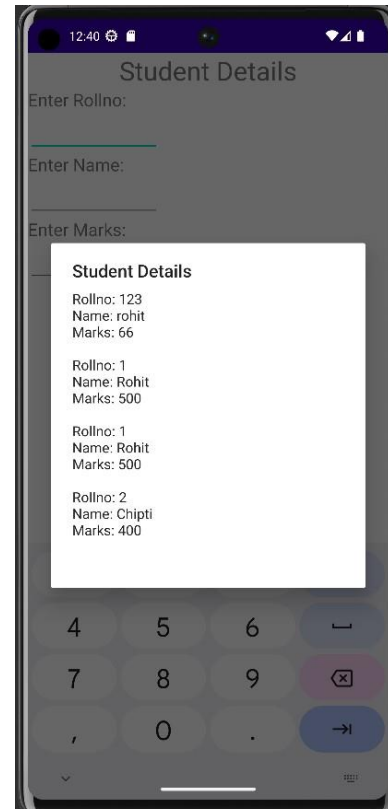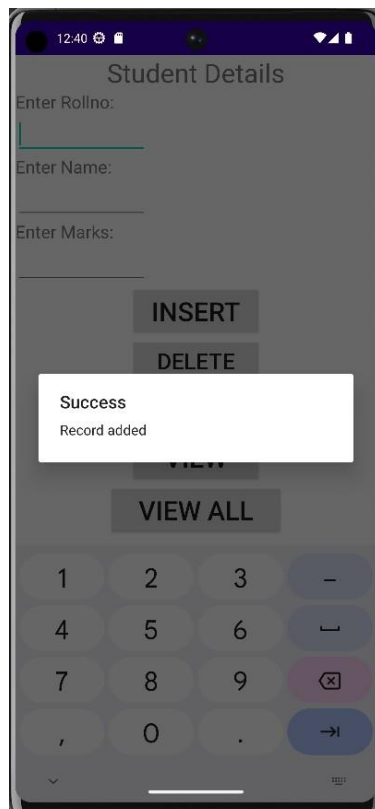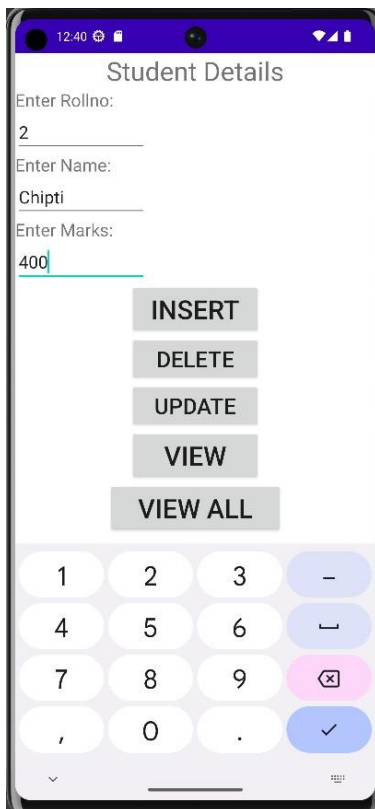
Program-12

Aim: Implement an application that writes data to the SD card

Code:

activity_main.xml

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="20dp"
    android:orientation="vertical">

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
        android:hint="write here"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Write Data"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Read data"
        android:textSize="30dp" />
```

```xml
    <Button
        android:id="@+id/button3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Clear"
        android:textSize="30dp" />

</LinearLayout>
```

MainActivity.Java

```java
package com.example.sdcard;

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;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity
{
    EditText e1;
    Button write,read,clear;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        e1= (EditText) findViewById(R.id.editText);
        write= (Button) findViewById(R.id.button);
```

```java
      read= (Button) findViewById(R.id.button2);
      clear= (Button) findViewById(R.id.button3);

      write.setOnClickListener(new View.OnClickListener()
      {
        @Override
        public void onClick(View v)
        {
          String message=e1.getText().toString();
          try
          {
            File f=new File("/sdcard/myfile.txt");
            f.createNewFile();
            FileOutputStream fout=new FileOutputStream(f);
            fout.write(message.getBytes());
            fout.close();
            Toast.makeText(getBaseContext(),"Data Written in
SDCARD",Toast.LENGTH_LONG).show();
          }
          catch (Exception e)
          {

Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH
_LONG).show();
          }
        }
      });

      read.setOnClickListener(new View.OnClickListener()
      {
        @Override
        public void onClick(View v)
        {
          String message;
          String buf = "";
          try
          {
            File f = new File("/sdcard/myfile.txt");
            FileInputStream fin = new FileInputStream(f);
            BufferedReader br = new BufferedReader(new
InputStreamReader(fin));
            while ((message = br.readLine()) != null)
```

```
                {
                    buf += message;
                }
            e1.setText(buf);
            br.close();
            fin.close();
            Toast.makeText(getBaseContext(),"Data Recived
from SDCARD",Toast.LENGTH_LONG).show();
        }
        catch (Exception e)
        {
            Toast.makeText(getBaseContext(), e.getMessage(),
Toast.LENGTH_LONG).show();
        }
      }
    });

    clear.setOnClickListener(new View.OnClickListener()
    {
        @Override
        public void onClick(View v)
        {
            e1.setText("");
        }
    });
  }
}
```

AndroidMenifest.xml

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

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
```
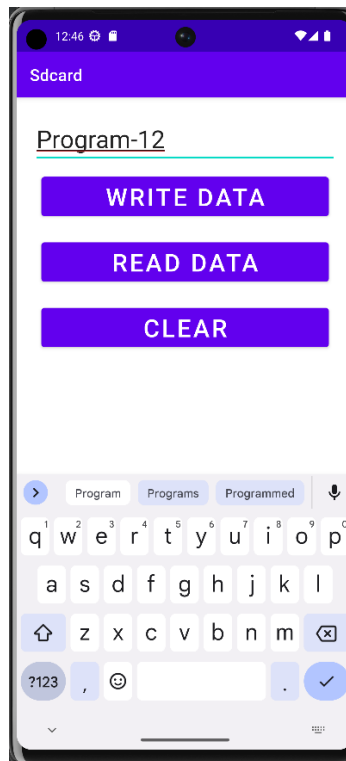
```
        android:theme="@style/Theme.Sdcard"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category
android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

Output:

Program-13

Aim: Implement an application that creates an alert upon receiving
a message

Code:

activity_main.xml

```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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">


    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/button"
        android:text="Close app"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />


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

MainActivity.Java

```java
package com.example.radioapp;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.app.AlertDialog;
import android.widget.Toast;
```

```java
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

  Button closeButton;

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

    closeButton = (Button) findViewById(R.id.button);
    builder = new AlertDialog.Builder(this);
    closeButton.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View v) {

          //Uncomment the below code to Set the message and title from the strings.xml file
          builder.setMessage(R.string.dialog_message) .setTitle(R.string.dialog_title);

          //Setting message manually and performing action on button click
          builder.setMessage("Do you really want to close the application?")
                .setCancelable(false)
                .setPositiveButton("Yes", new DialogInterface.OnClickListener() {
                   public void onClick(DialogInterface dialog, int id) {
                      finish();
                      Toast.makeText(getApplicationContext(),"The application is closed.",
                          Toast.LENGTH_SHORT).show();
                   }
                })
                .setNegativeButton("No", new DialogInterface.OnClickListener() {
                   public void onClick(DialogInterface dialog, int id) {
                      //  Action for 'NO' Button
                      dialog.cancel();
                      Toast.makeText(getApplicationContext(),"you choose no action for alertbox",
                          Toast.LENGTH_SHORT).show();
                   }
                });
          //Creating dialog box
          AlertDialog alert = builder.create();
```
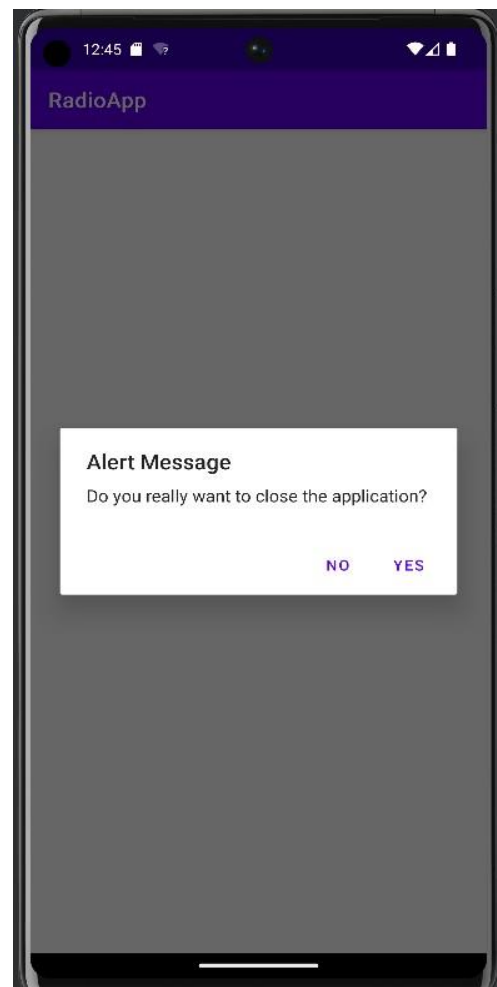
```
            //Setting the title manually
            alert.setTitle("Alert Message");
            alert.show();
        }
    });
  }
}
```

Output:

Program-14

Aim: Develop a standard calculator application to perform basic calculations like addition, subtraction, multiplication and division

Code:

activity_main.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:layout_width="match_parent"
    android:orientation="vertical"
    android:padding="20dp"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Simple Calculator"
        android:layout_gravity="center"
        android:layout_marginTop="50dp"
        android:textSize="30sp"
        android:textStyle="bold"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/number1"
        android:inputType="number"
        android:hint="Enter number"
        android:layout_marginTop="30dp"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:inputType="number"
```

```xml
        android:id="@+id/number2"
        android:layout_marginTop="10dp"
        android:hint="Enter number"/>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:id="@+id/btn_add"
            android:text="+"
            android:textSize="30dp"
            android:layout_marginEnd="5dp"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:id="@+id/btn_sub"
            android:text="-"
            android:textSize="30dp"
            android:layout_marginEnd="5dp"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:id="@+id/btn_mul"
            android:text="×"
            android:textSize="30dp"
            android:layout_marginEnd="5dp"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:id="@+id/btn_div"
            android:text="÷"
            android:textSize="30dp"
            android:layout_marginEnd="5dp"/>
    </LinearLayout>
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/answer"
        android:layout_marginTop="30dp"
        android:layout_gravity="center"
        android:textStyle="bold"
        android:textSize="30sp"/>
</LinearLayout>
```

MainActivity.Java

```java
package com.example.calculatorr;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
    Button buttonAdd, buttonSub, buttonMul, buttonDiv;
    EditText editTextN1,editTextN2;
    TextView textView;
    int num1,num2;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        buttonAdd=findViewById(R.id.btn_add);
        buttonSub=findViewById(R.id.btn_sub);
        buttonMul=findViewById(R.id.btn_mul);
        buttonDiv=findViewById(R.id.btn_div);
        editTextN1=findViewById(R.id.number1);
```

```java
        editTextN2=findViewById(R.id.number2);
        textView=findViewById(R.id.answer);


        buttonAdd.setOnClickListener(this);
        buttonSub.setOnClickListener(this);
        buttonMul.setOnClickListener(this);
        buttonDiv.setOnClickListener(this);
    }
    public int getIntFromEditText(EditText editText){
        if (editText.getText().toString().equals("")){
            Toast.makeText(this, "Enter number",
Toast.LENGTH_SHORT).show();
            return 0;
        }else
            return Integer.parseInt(editText.getText().toString());
    }


    @Override
    public void onClick(View view) {
        num1=getIntFromEditText(editTextN1);
        num2=getIntFromEditText(editTextN2);
        switch (view.getId()){
            case R.id.btn_add:
                textView.setText(" Answer = " + (num1 + num2));
                break;
            case R.id.btn_sub:
                textView.setText(" Answer = " + (num1 - num2));
                break;
            case R.id.btn_mul:
                textView.setText(" Answer = " + (num1 * num2));
                break;
            case R.id.btn_div:
                textView.setText(" Answer = " + (num1 / num2));
                break;
        }
    }
}
```

Output:
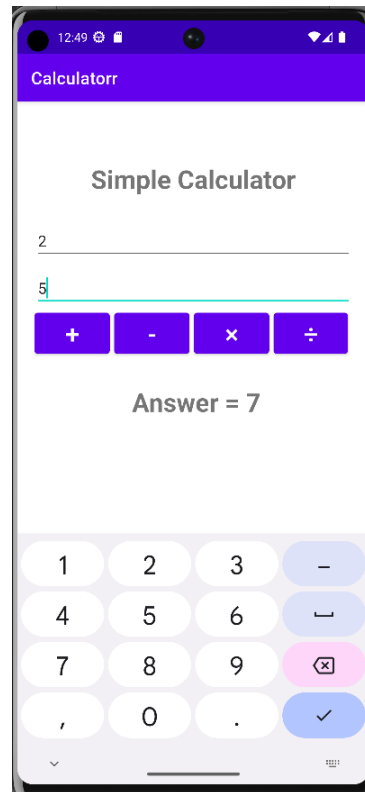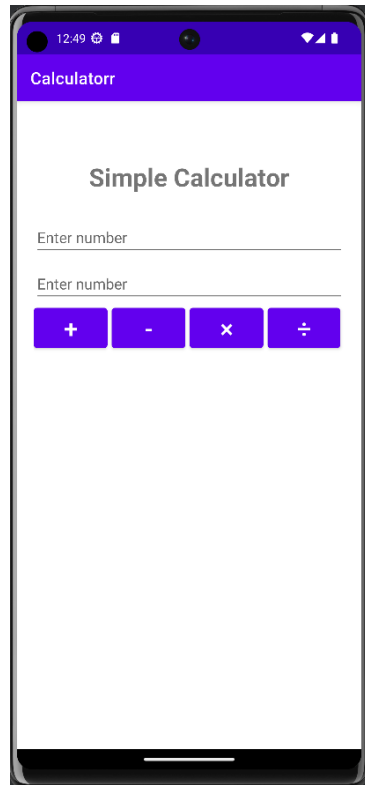
Program-15

Aim: Simulate paintbrush application

Code:

activity_main.xml

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

    <LinearLayout
        android:id="@+id/linear"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal">

            <ImageButton
                android:id="@+id/btn_undo"
                android:layout_width="48dp"
                android:layout_height="48dp"
                android:layout_margin="20dp"
                android:layout_weight="1"
                android:src="@drawable/ic_undo"
                android:text="Undo" />

            <ImageButton
                android:id="@+id/btn_save"
                android:layout_width="48dp"
                android:layout_height="48dp"
                android:layout_margin="20dp"
                android:layout_weight="1"
```

```xml
            android:src="@drawable/ic_floppy_disk"
            android:text="Save" />

        <ImageButton
            android:id="@+id/btn_color"
            android:layout_width="48dp"
            android:layout_height="48dp"
            android:layout_margin="20dp"
            android:layout_weight="1"
            android:src="@drawable/ic_colorpicker"
            android:text="Color" />

        <ImageButton
            android:id="@+id/btn_stroke"
            android:layout_width="48dp"
            android:layout_height="48dp"
            android:layout_margin="20dp"
            android:layout_weight="1"
            android:src="@drawable/paint"
            android:text="Stroke" />
    </LinearLayout>

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

        <com.google.android.material.slider.RangeSlider
            android:id="@+id/rangebar"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:visibility="gone" />

    </LinearLayout>

  </LinearLayout>


</RelativeLayout>
```

MainActivity.Java

```java
package com.example.paint;

import android.annotation.SuppressLint;
import android.content.ContentValues;
import android.graphics.Bitmap;
import android.graphics.Color;
import android.net.Uri;
import android.os.Bundle;
import android.os.Environment;
import android.provider.MediaStore;
import android.view.View;
import android.view.ViewTreeObserver;
import android.widget.ImageButton;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import com.google.android.material.slider.RangeSlider;

import java.io.OutputStream;

import petrov.kristiyan.colorpicker.ColorPicker;

public class MainActivity extends AppCompatActivity {
    private DrawView paint;
    private ImageButton save, color, stroke, undo;
    private RangeSlider rangeSlider;

    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        paint = (DrawView) findViewById(R.id.draw_view);
        rangeSlider = (RangeSlider) findViewById(R.id.rangebar);
        undo = (ImageButton) findViewById(R.id.btn_undo);
        save = (ImageButton) findViewById(R.id.btn_save);
        color = (ImageButton) findViewById(R.id.btn_color);
        stroke = (ImageButton) findViewById(R.id.btn_stroke);

        // creating a OnClickListener for each button,
        // to perform certain actions
```

```java
      // the undo button will remove the most
      // recent stroke from the canvas
      undo.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            paint.undo();
         }
      });

      // the save button will save the current
      // canvas which is actually a bitmap
      // in form of PNG, in the storage
      save.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {

            // getting the bitmap from DrawView class
            Bitmap bmp = paint.save();

            // opening a OutputStream to write into the file
            OutputStream imageOutStream = null;

            ContentValues cv = new ContentValues();

            // name of the file
            cv.put(MediaStore.Images.Media.DISPLAY_NAME,
"drawing.png");

            // type of the file
            cv.put(MediaStore.Images.Media.MIME_TYPE,
"image/png");

            // location of the file to be saved
            cv.put(MediaStore.Images.Media.RELATIVE_PATH,
Environment.DIRECTORY_PICTURES);

            // get the Uri of the file which is to be created in the
storage
            Uri uri =
getContentResolver().insert(MediaStore.Images.Media.EXTERNA
L_CONTENT_URI, cv);
```

```
        try {
            // open the output stream with the above uri
            imageOutStream =
getContentResolver().openOutputStream(uri);

            // this method writes the files in storage
            bmp.compress(Bitmap.CompressFormat.PNG, 100,
imageOutStream);

            // close the output stream after use
            imageOutStream.close();
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
});
// the color button will allow the user
// to select the color of his brush
color.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        final ColorPicker colorPicker = new
ColorPicker(MainActivity.this);
        colorPicker.setOnFastChooseColorListener(new
ColorPicker.OnFastChooseColorListener() {
                @Override
                public void setOnFastChooseColorListener(int
position, int color) {
                    // get the integer value of color
                    // selected from the dialog box and
                    // set it as the stroke color
                    paint.setColor(color);
                }
                @Override
                public void onCancel() {
                    colorPicker.dismissDialog();
                }
            })
            // set the number of color columns
            // you want to show in dialog.
            .setColumns(5)
            // set a default color selected
```

```
                    // in the dialog

.setDefaultColorButton(Color.parseColor("#000000"))
                .show();
        }
    });
    // the button will toggle the visibility of the
RangeBar/RangeSlider
    stroke.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            if (rangeSlider.getVisibility() == View.VISIBLE)
                rangeSlider.setVisibility(View.GONE);
            else
                rangeSlider.setVisibility(View.VISIBLE);
        }
    });

    // set the range of the RangeSlider
    rangeSlider.setValueFrom(0.0f);
    rangeSlider.setValueTo(100.0f);

    // adding a OnChangeListener which will
    // change the stroke width
    // as soon as the user slides the slider
    rangeSlider.addOnChangeListener(new
RangeSlider.OnChangeListener() {
        @Override
        public void onValueChange(@NonNull RangeSlider slider,
float value, boolean fromUser) {
            paint.setStrokeWidth((int) value);
        }
    });

    // pass the height and width of the custom view
    // to the init method of the DrawView object
    ViewTreeObserver vto = paint.getViewTreeObserver();
    vto.addOnGlobalLayoutListener(new
ViewTreeObserver.OnGlobalLayoutListener() {
        @Override
        public void onGlobalLayout() {
```
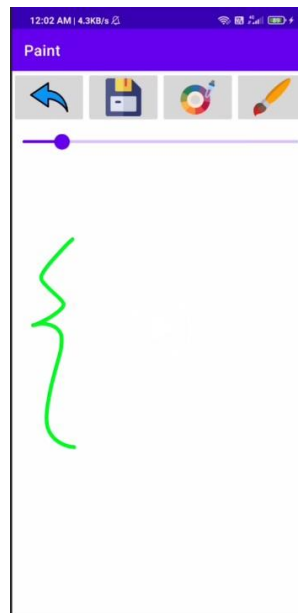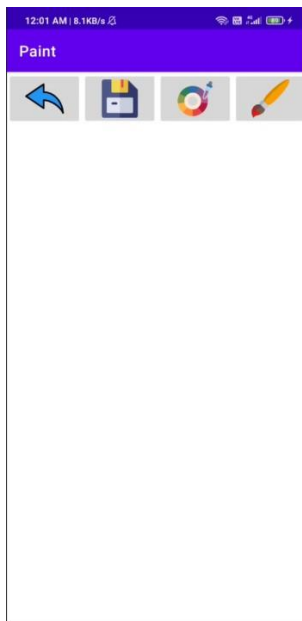
```
paint.getViewTreeObserver().removeOnGlobalLayoutListener(this
);
        int width = paint.getMeasuredWidth();
        int height = paint.getMeasuredHeight();
        paint.init(height, width);
      }
    });
  }
}
```

Output

Program-16

Aim: Draw an object
Code:

activity_main.xml

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

    <ImageView
        android:id="@+id/imageV"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>

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

MainActivity.java

```java
package com.tutorialkart.drawshapeoncanvas

import android.graphics.Canvas
import android.graphics.Color
import android.support.v7.app.AppCompatActivity
import android.os.Bundle
import kotlinx.android.synthetic.main.activity_main.*
import android.graphics.Bitmap
import android.graphics.Paint
import android.graphics.drawable.BitmapDrawable
import android.util.DisplayMetrics


class MainActivity : AppCompatActivity() {

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val bitmap = Bitmap.createBitmap(700, 1000, Bitmap.Config.ARGB_4444)
```

```
        val canvas = Canvas(bitmap)
        canvas.drawARGB(255, 78, 168, 186);

        var paint = Paint()
        paint.setColor(Color.parseColor("#FFFFFF"))
        paint.setStrokeWidth(30F)
        paint.setStyle(Paint.Style.STROKE)
        paint.setAntiAlias(true)
        paint.setDither(true)
        val displayMetrics = DisplayMetrics()
        windowManager.defaultDisplay.getMetrics(displayMetrics)
        // circle center
        System.out.println("Width : "+displayMetrics.widthPixels)
        var  center_x = (displayMetrics.widthPixels/2).toFloat()
        var center_y = (displayMetrics.heightPixels/2).toFloat()
        var radius = 300F
        // draw circle
        canvas.drawCircle(center_x, center_y, radius, paint)
        // now bitmap holds the updated pixels
        // set bitmap as background to ImageView
        imageV.background = BitmapDrawable(getResources(), bitmap)
    }
}
```

Output
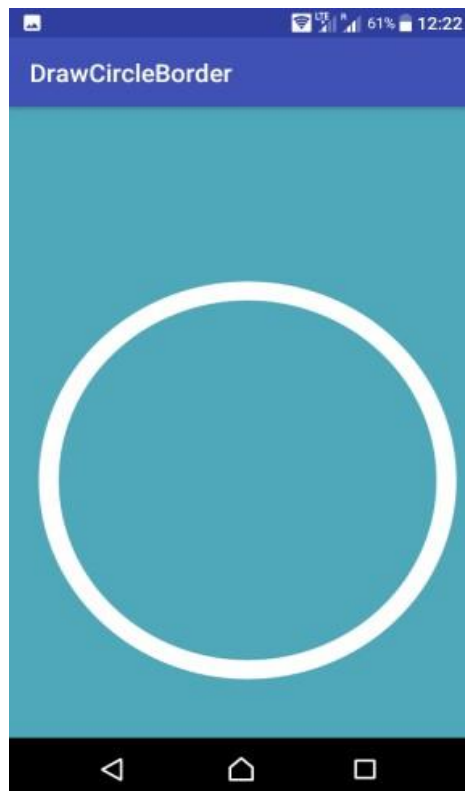
Program-17

Aim: Implement webview

Code:

activity_main.xml

```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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <WebView
        android:id="@+id/webview"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>

</RelativeLayout>
```

AndroidMenifest.java

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission android:name="android.pemission.INTERNET"/>

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.Webview"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
```

```
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
  </application>

</manifest>
```

MainActivity.Java

```java
package com.example.webview;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.webkit.WebSettings;
import android.webkit.WebView;
import android.webkit.WebViewClient;

public class MainActivity extends AppCompatActivity {
    private WebView webView;

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

        webView=(WebView)findViewById(R.id.webview);
        webView.setWebViewClient(new WebViewClient());
        webView.loadUrl("https://www.google.com/");
    }

    @Override
    public void onBackPressed() {
```

```
    if (webView.canGoBack()){
      webView.canGoBack();
    }else{
      super.onBackPressed();
    }
  }
}
```

output