MOUNT ZION COLLEGE OF ENGINEERING

Kadammanitta – Pathanamthitta Kerala 689649

(Affiliated to APJ Abdul Kalam Technological University)

20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

LABORATORY RECORD

SECOND YEAR

Submitted by

P J SREEDEEP

MZC21MCA-2021

Submitted in partial fulfillment of the requirement for the

Award of the Degree

of

MASTER OF COMPUTER APPLICATIONS

(2021-2023)

Department of Computer Applications

MOUNT ZION COLLEGE OF ENGINEERING, KADAMMANITTA

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Kadammanitta – Pathanamthitta Kerala 689649

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CERTIFICATE

Certified that this is a bonafide record of practical work done in Mobile Application Development Lab (20MCA243) Laboratory by P J SREEDEEP Reg No:MZC21MCA-2021 of Mount Zion College of Engineering, Kadammanitta – Pathanamthitta during the academic year 2021-2023.

Head of the department   **Staff member in-charge**

Internal Examiner

INDEX PAGE

CO1
PROGRAMS

REPORT ON LABORATORY WORK

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

Aim:

Create a Simple Android Toast with a Message Welcome to Android.

Main Activity.java

```java
package com.example.toasttrial;

import android.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.Toast;

public class MainActivity extendsAppCompatActivity

{

    @Override

    Protected void onCreate(Bundle savedInstanceState)

    {

     Super.onCreate(savedInstanceState);

    setContantView(R.layout.activity_main);

    Toast.makeText(getApplicationContext(),"Hello welcome to

Android",Toast.LENGTH_LONG).show();  }}
```

Output

toast trial

Hello World!

Hello welcome to android

Result/Observation

Successfully completed the android program and output is obtained.

Mark:

Viva(5)	Performance(5)	Total(10)

Assessor:

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Find Sum of Two Numbers and Display the Value on Toast.

GUI DESIGN

activity_main.xml

<?xmlversion="1.0"encoding="utf-8"?>

<LinearLayout

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:orientation="vertical"

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

    <EditText

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/entry1"/>

    <EditText

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/entry2"/>

    <Button

        android:layout_width="wrap_content"

```
                    android:layout_height="wrap_content"

                    android:id="@+id/button"

                    android:text="Add"/>

</LinearLayout>
```

MainActivity.java

```java
public class MainActivity extends AppCompatActivity

 {
private EditText value1,value2;

private Button sum;

 @Override
 protected void onCreate(Bundle savedInstanceState)

 {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        addListenerOnButton();

  }

public void addListenerOnButton()

{
     value1=(EditText)findViewById(R.id.entry1);
     value2=(EditText)findViewById(R.id.entry2);
     sum=(Button)findViewById(R.id.button);
sum.setOnClickListener(new View.OnClickListener()

 {

        @Override
        public void onClick(View v) {
           String e1=value1.getText().toString();
           String e2=value2.getText().toString();
           int a=Integer.parseInt(e1);
```

```java
        int b=Integer.parseInt(e2);
        int sum=a+b;

Toast.makeText(getApplicationContext(),String.valueOf(sum),Toast.LENGTH_LONG).show(
);

}

});

}

}
```
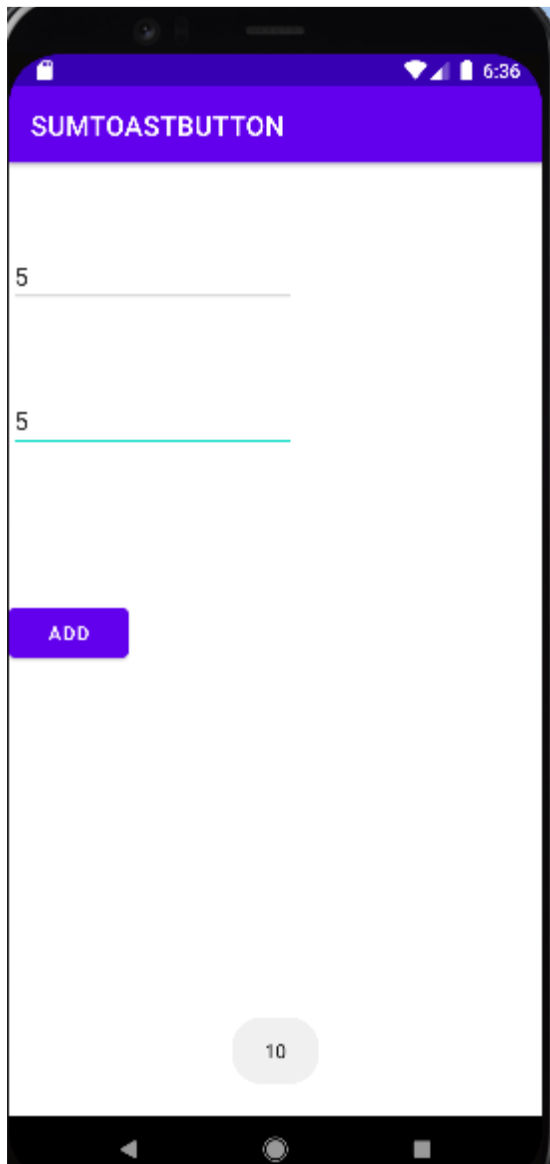
```java
Toast.makeText(getApplicationContext(),String.valueOf(sum),Toast.LENGTH_LONG).show(
);
```

Output:

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM NO:3

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

Aim:

Create a Login Page with Username and Password and Toast the Values.

GUI DESIGN

activity_main.xml

```
<LinearLayout android:layout_height="match_parent"
    android:layout_width="match_parent"
    android:orientation="vertical"
    xmlns:android="http://schemas.android.com/apk/res/android">
<EditText
        android:layout_width="match_parent"
        android:textColor="@color/black"
        android:layout_height="wrap_content"
android:hint="Enter user name"
android:layout_margin="10dp"
        android:id="@+id/usr"/>
<EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
android:hint="Enter password"
        android:inputType="textPassword"
        android:textColor="@color/black"
        android:id="@+id/pass"
android:layout_margin="10dp"/>
```

```xml
<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/btn"
android:layout_margin="10dp"
    android:text="SUBMIT"
    android:textColor="@color/black"/>

</LinearLayout>
```

MainActivity.java

```java
package com.example.loginpage;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity

 {
   EditText ed1,ed2;
AppCompatButton b1;
   String getUser,getPass;
@Override
   protected void onCreate(Bundle savedInstanceState)

{
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    ed1=(EditText) findViewById(R.id.usr);
    ed2=(EditText) findViewById(R.id.pass);
    b1=(AppCompatButton) findViewById(R.id.btn);
    b1.setOnClickListener(new View.OnClickListener() {
```

```java
        @Override
        public void onClick(View v) {
getUser=ed1.getText().toString();
getPass=ed2.getText().toString();
Toast.makeText(getApplicationContext(),getUser,Toast.LENGTH_LONG).show();
Toast.makeText(getApplicationContext(),getPass,Toast.LENGTH_LONG).show();

        }

  });

 }

}
```
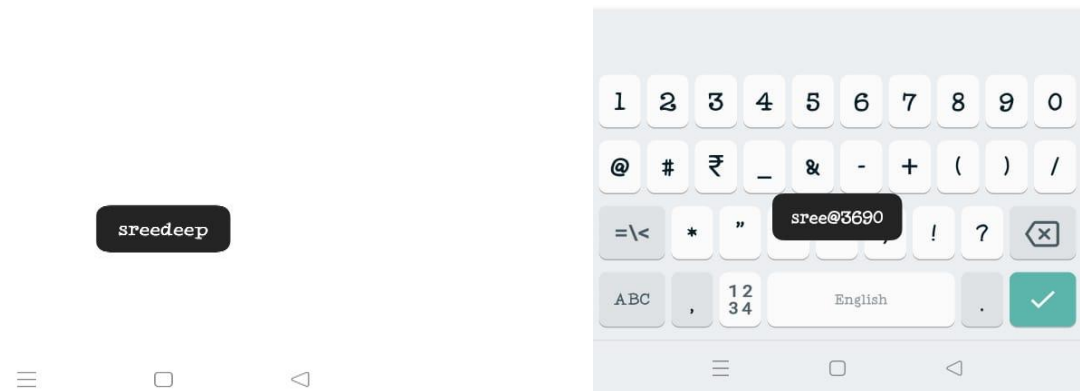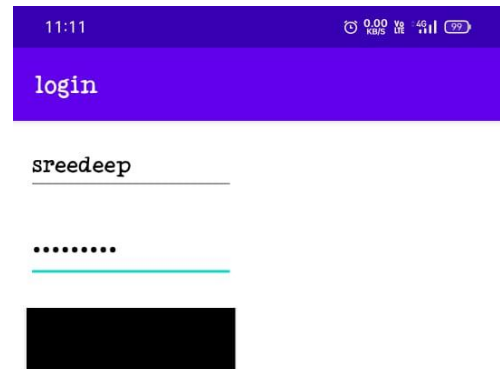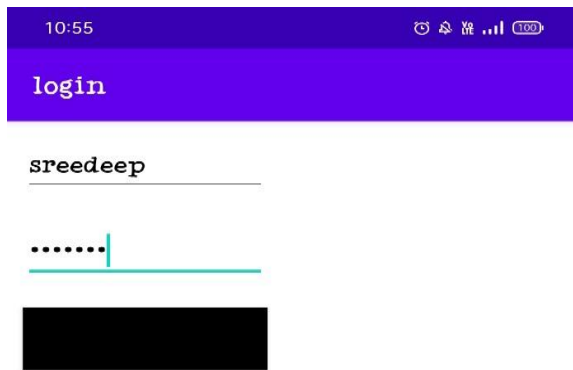
OUTPUT

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM:

Create Program to Demonstrate Activity Lifecycle.

GUI DESIGN

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayoutxmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
<TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity Lifecycle"
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.activitylifecycle;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
   @Override
 protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Log.d("Activity_Lifecycle","onCreate invoked");
      Toast.makeText(MainActivity.this,"Created",Toast.LENGTH_LONG).show();
   }
   @Override
protected void onStart(){
super.onStart();
      Log.d("Activity_Lifecycle","onStart invoked");
      Toast.makeText(MainActivity.this, "Start", Toast.LENGTH_SHORT).show();
   }

   @Override
   protected void onResume(){
super.onResume();
      Log.d("Activity_Lifecycle","onResume invoked");
      Toast.makeText(MainActivity.this,"Resume",Toast.LENGTH_LONG).show();
   }
   @Override
   protected void onPause(){
      super.onPause();
      Log.d("Activity_Lifecycle","onPause invoked");
      Toast.makeText(MainActivity.this,"Pause",Toast.LENGTH_LONG).show();
```

```java
    }

    @Override
    protected void onStop(){
super.onStop();
        Log.d("Activity_Lifecycle","onStop invoked");
        Toast.makeText(MainActivity.this,"Stop",Toast.LENGTH_LONG).show();
    }
    @Override
    protected void onRestart(){
super.onRestart();
        Log.d("Activity_Lifecycle","onRestart invoked");
        Toast.makeText(MainActivity.this,"Restart",Toast.LENGTH_LONG).show();
    }
    @Override
    protected void onDestroy(){
super.onDestroy();
        Log.d("Activity_Lifecycle","onDestroy invoked");
        Toast.makeText(MainActivity.this,"Destroy",Toast.LENGTH_LONG).show();
```

OUTPUT:

Activity lifecycle

Activity Lifecycle

Created

11:10

lifecycle

welcome to lifecycle

Start

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM:

Create an Android Application for Implementing a Basic Calculator.

GUL DESIGN

activity_main.xml

```xml
<LinearLayout

    android:layout_height="match_parent"

    android:layout_width="match_parent"

    android:orientation="vertical"

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


<EditText

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

android:hint="Enter First Number"

        android:inputType="number"

        android:id="@+id/fno"

android:layout_margin="10dp"

        android:textColor="@color/black"/>


<EditText

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

android:hint="Enter Second Number"

        android:inputType="number"

        android:id="@+id/sno"

android:layout_margin="10dp"

        android:textColor="@color/black"/>
```

```xml
<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="+"
    android:id="@+id/add"
android:layout_margin="10dp"
    android:textColor="@color/black"/>


<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="-"
    android:id="@+id/sub"
android:layout_margin="10dp"
    android:textColor="@color/black"/>


<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="/"
    android:id="@+id/div"
android:layout_margin="10dp"
    android:textColor="@color/black"/>


<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="*"
    android:id="@+id/multi"
android:layout_margin="10dp"
    android:textColor="@color/black"/>
```

```xml
<androidx.appcompat.widget.AppCompatButton
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="clear"
    android:id="@+id/clear"
android:layout_margin="10dp"
    android:textColor="@color/black"/>

<EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="result:"
    android:id="@+id/res"
android:layout_margin="10dp"
    android:textColor="@color/black"/>
</LinearLayout>
```

MainActivity.java

```java
package com.example.calculator;
import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.AppCompatButton;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
   EditText ed1,ed2,ed3;
AppCompatButton b1,b2,b3,b4,b5;
   // String getResult;

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

```java
        ed1=(EditText) findViewById(R.id.fno);
        ed2=(EditText) findViewById(R.id.sno);
        ed3=(EditText) findViewById(R.id.res);
        b1=(AppCompatButton) findViewById(R.id.add);
        b2=(AppCompatButton) findViewById(R.id.sub);
        b3=(AppCompatButton) findViewById(R.id.div);
        b4=(AppCompatButton) findViewById(R.id.multi);
        b5=(AppCompatButton) findViewById(R.id.clear);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
if(ed1.getText().length()>0 &&(ed2.getText().length()>0))
                {
                    int first=Integer.parseInt(ed1.getText().toString());

                    int second=Integer.parseInt(ed2.getText().toString());
                int result=first+second;
                ed3.setText(Integer.toString(result));
              }
           }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if(ed1.getText().length()>0 &&(ed2.getText().length()>0))
                {
                    double first=Double.parseDouble(ed1.getText().toString());
                    double second=Double.parseDouble(ed2.getText().toString());
                    double result=first-second;
                    ed3.setText(Double.toString(result));
                }


            }
        });
```

23

```java
    b3.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        if(ed1.getText().length()>0 &&(ed2.getText().length()>0))
        {
          double first=Double.parseDouble(ed1.getText().toString());
          double second=Double.parseDouble(ed2.getText().toString());
          double result=first/second;
          ed3.setText(Double.toString(result));
        }


      }
    });

    b4.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
          if(ed1.getText().length()>0 &&(ed2.getText().length()>0))
          {
            double first=Double.parseDouble(ed1.getText().toString());
            double second=Double.parseDouble(ed2.getText().toString());
            double result=first*second;
            ed3.setText(Double.toString(result));
          }


        }
    });
    b5.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
          ed1.setText("");
          ed2.setText("");
          ed3.setText("");
```
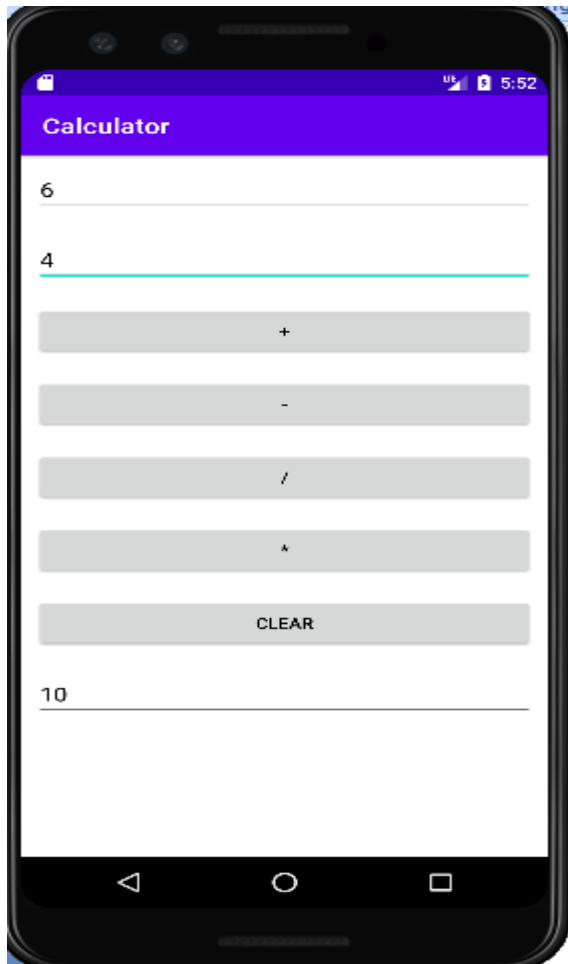
```
        }
    });   }
}
```

OUTPUT

Result/Observation

      Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM – 6

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Android Program To Implement Validations on Various UI Controls

GUI DESIGN

activity_main.xml

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

<LinearLayout

   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"

   android:orientation="vertical"

   tools:context=".MainActivity"

   tools:ignore="HardcodedText">


   <EditText

      android:id="@+id/firstName"

      android:layout_width="match_parent"

      android:layout_height="wrap_content"

      android:layout_marginStart="16dp"

      android:layout_marginTop="16dp"

      android:layout_marginEnd="16dp"

      android:hint="First Name"

      android:inputType="text" />

   <EditText

      android:id="@+id/lastName"
```

```xml
        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="16dp"

        android:layout_marginTop="16dp"

        android:layout_marginEnd="16dp"

        android:hint="Last Name"

        android:inputType="text" />

    <EditText

        android:id="@+id/email"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="16dp"

        android:layout_marginTop="16dp"

        android:layout_marginEnd="16dp"

        android:hint="Email"

        android:inputType="textEmailAddress" />

    <EditText

        android:id="@+id/password"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginStart="16dp"

        android:layout_marginTop="16dp"

        android:layout_marginEnd="16dp"

        android:hint="Password"

        android:inputType="textPassword" />


    <LinearLayout

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:layout_marginTop="8dp"
```

```xml
        android:gravity="end"

        android:orientation="horizontal">

        <Button

            android:id="@+id/cancelButton"

            style="@style/Widget.AppCompat.Button.Borderless"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:layout_marginEnd="4dp"

            android:text="CANCEL"

            android:textColor="@color/design_default_color_primary" />

        <Button

            android:id="@+id/proceedButton"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:layout_marginEnd="16dp"

            android:backgroundTint="@color/design_default_color_primary"

            android:text="PROCEED"

            android:textColor="@android:color/white"

            tools:ignore="ButtonStyle" />

    </LinearLayout>

</LinearLayout>
```

activity_main2.xml

```xml
<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=".MainActivity2"

    tools:ignore="HardcodedText">
```

28

```xml
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="ACTIVITY 2"
        android:textSize="18sp" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.ui;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    Button bCancel, bProceed;
    EditText etFirstName, etLastName, etEmail, etPassword;

    boolean isAllFieldsChecked=false;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bProceed = findViewById(R.id.proceedButton);
        bCancel = findViewById(R.id.cancelButton);
```

```java
        etFirstName = findViewById(R.id.firstName);

        etLastName = findViewById(R.id.lastName);

        etEmail = findViewById(R.id.email);

        etPassword = findViewById(R.id.password);


        bProceed.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                isAllFieldsChecked=isAllFieldsCheckedCheckAllFields();

                if (isAllFieldsChecked) {

                    Intent i = new Intent(MainActivity.this, MainActivity2.class);

                    startActivity(i);

                }

            }

        });

        bCancel.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                MainActivity.this.finish();

                System.exit(0);

            }

        });

    }

    private boolean isAllFieldsCheckedCheckAllFields() {

        if (etFirstName.length() == 0) {

            etFirstName.setError("This field is required");

            return false;

        }

        if (etLastName.length() == 0) {

            etLastName.setError("This field is required");
```

```java
            return false;
        }
        if (etEmail.length() == 0) {
            etEmail.setError("Email is required");
            return false;
        }
        if (etPassword.length() == 0) {
            etPassword.setError("Password is required");
            return false;
        } else if (etPassword.length() < 8) {
            etPassword.setError("Password must be minimum 8 characters");
            return false;
        }
        return true;
    }
}
```
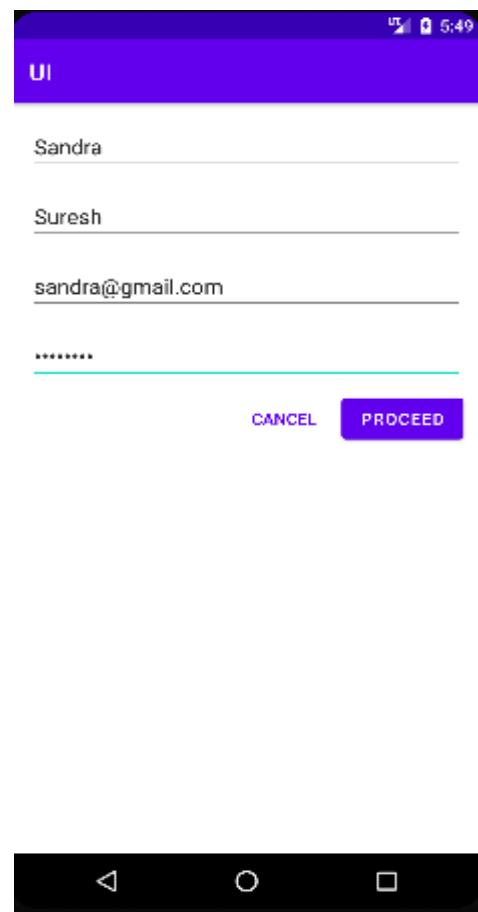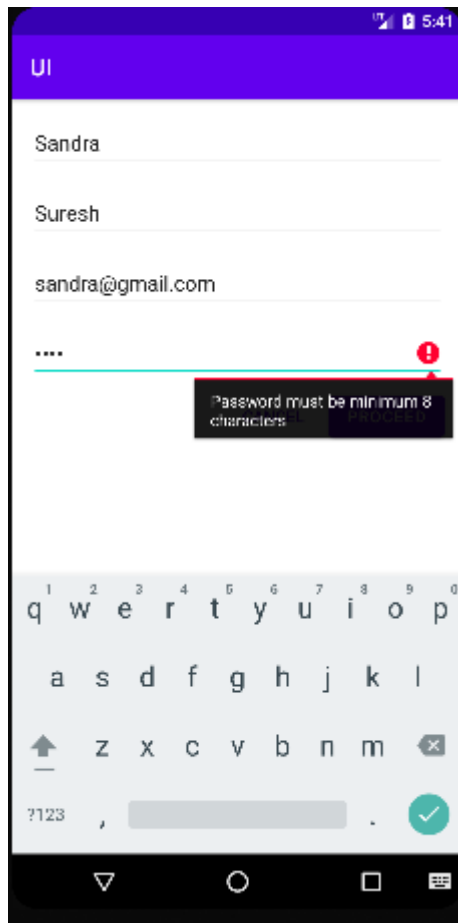
Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

CO2
PROGRAMS

PROGRAM –7

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Android to Demonstrate The Use of Implicit Intent

GUI DESIGN

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">

        <EditText

            android:id="@+id/editText"

            android:layout_width="match_parent"

            android:layout_height="wrap_content"

            app:layout_constraintBottom_toBottomOf="parent"

            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toTopOf="parent" />
```

```xml
        <Button

            android:id="@+id/btn"

            android:text="Search"

            android:onClick="search"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            app:layout_constraintBottom_toBottomOf="parent"

            app:layout_constraintEnd_toEndOf="parent"

            app:layout_constraintStart_toStartOf="parent"

            app:layout_constraintTop_toBottomOf="@+id/editText" />

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

Mainactivity Java. File

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

import android.content.Intent;

import android.net.Uri;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;


public class MainActivity extends AppCompatActivity {

        @Override

        protected void onCreate(Bundle savedInstanceState) {


                EditText editText;

                Button button;
```

```java
                super.onCreate(savedInstanceState);

                setContentView(R.layout.activity_main);


                button = findViewById(R.id.btn);

                editText = (EditText) findViewById(R.id.editText);


                button.setOnClickListener(new View.OnClickListener() {

                        @Override

                        public void onClick(View view) {

                                String url=editText.getText().toString();

                                Intent intent = new Intent(Intent.ACTION_VIEW,

        Uri.parse(url));

                                startActivity(intent);

                        }

                });

        }

}
```
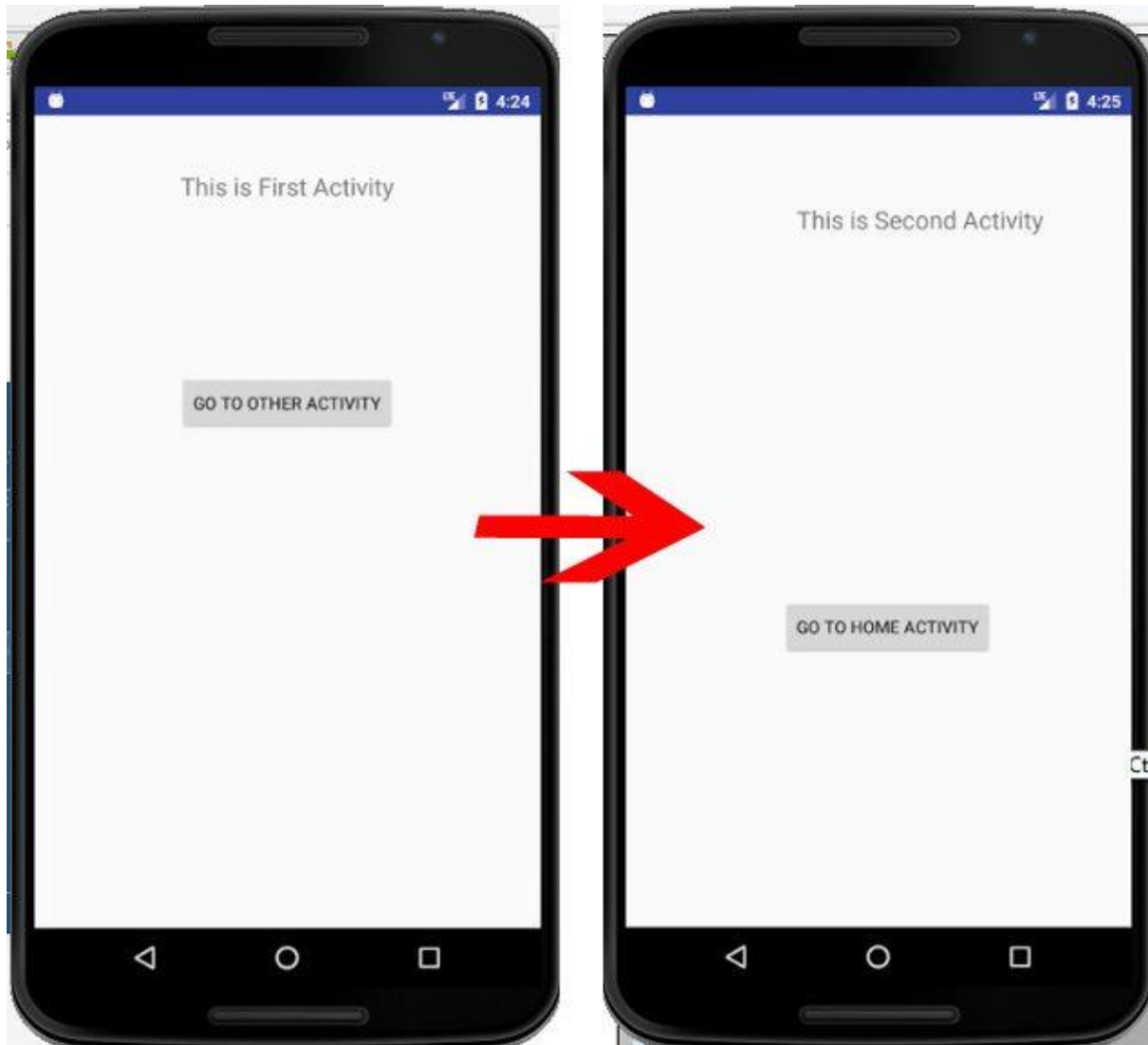
OUTPUT

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM –8

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Android Program To Demonstrate Explicit Intent.

GUI DESIGN

activity_main.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">

    <TextView
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Welcome to Home Screen"
        android:textAlignment="center"
        android:textSize="28sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/btn1"
        android:text="Go to News Screen"
        android:onClick="newsScreen"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

39

```
         app:layout_constraintTop_toBottomOf="@+id/editText" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.intent;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Intent;
import android.view.View;

public class MainActivity extends AppCompatActivity {

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

    public void newsScreen(View view) {
        Intent i = new Intent(getApplicationContext(), MainActivity2.class);
        startActivity(i);
    }
}
```

activity_main2.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=".MainActivity2">

    <TextView
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Welcome to GFG News Screen"
        android:textAlignment="center"
```

```xml
        android:textSize="28sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/btn2"
        android:text="Go to Home Screen"
        android:onClick="homeScreen"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Main Activity2.java

```java
package com.example.intent;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }

    public void homeScreen(View view) {
        Intent i = new Intent(getApplicationContext(), MainActivity.class);
        startActivity(i);
    }
}
```
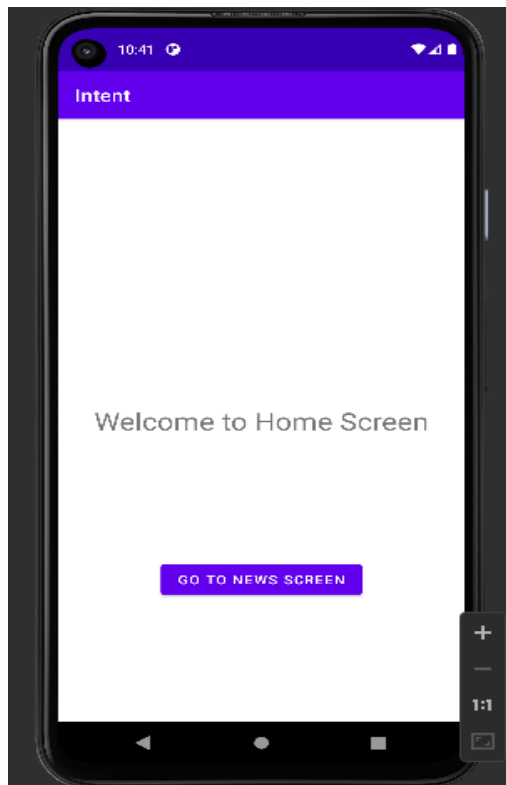
41

OUTPUT

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM –9

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Create a Facebook Page using RelativeLayout; set properties using .xml file.

GUI DESIGN

activity_main.xml:

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

    <ImageView
        android:layout_width="80dp"
        android:layout_height="80dp"
        android:layout_gravity="center"
        android:layout_marginTop="80dp"
        android:src="@drawable/fb_logo"
    />
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="80dp"
        android:layout_marginRight="20dp"
        android:backgroundTint="#d3d3d3"
        android:hint="Username or Email"
        android:inputType="textEmailAddress"
        android:maxLines="1"
        android:padding="10dp"
        android:textColor="#ffffff"
        android:textColorHint="#d3d3d3"/>
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="80dp"
        android:layout_marginRight="20dp"
        android:backgroundTint="#d3d3d3"
        android:hint="Password"
        android:inputType="textPassword"
        android:maxLines="1"
        android:padding="10dp"
```

43

```xml
        android:textColor="#ffffff"
        android:textColorHint="#d3d3d3"/>
    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/btnlogin"
        android:layout_marginLeft="20dp"
        android:layout_marginTop="35dp"
        android:layout_marginRight="20dp"
        android:backgroundTint="#5c6bc0"
        android:padding="10dp"
        android:text="Log In"
        android:textColor="#ffffff"
        android:textSize="16sp"
        android:textStyle="bold"/>
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_alignParentBottom="true"
            android:orientation="vertical">
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:id="@+id/txtSignUp"
                android:gravity="center_horizontal"
                android:text="Sign up for facebook"
                android:textColor="#ffffff"/>
            <TextView
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:id="@+id/txtForgotPassword"
                android:layout_gravity="center_horizontal"
                android:layout_marginTop="15dp"
                android:layout_marginBottom="15dp"
                android:text="Forgot Password"
                android:textColor="#ffffff"/>

        </LinearLayout>

</RelativeLayout>
```

OUTPUT
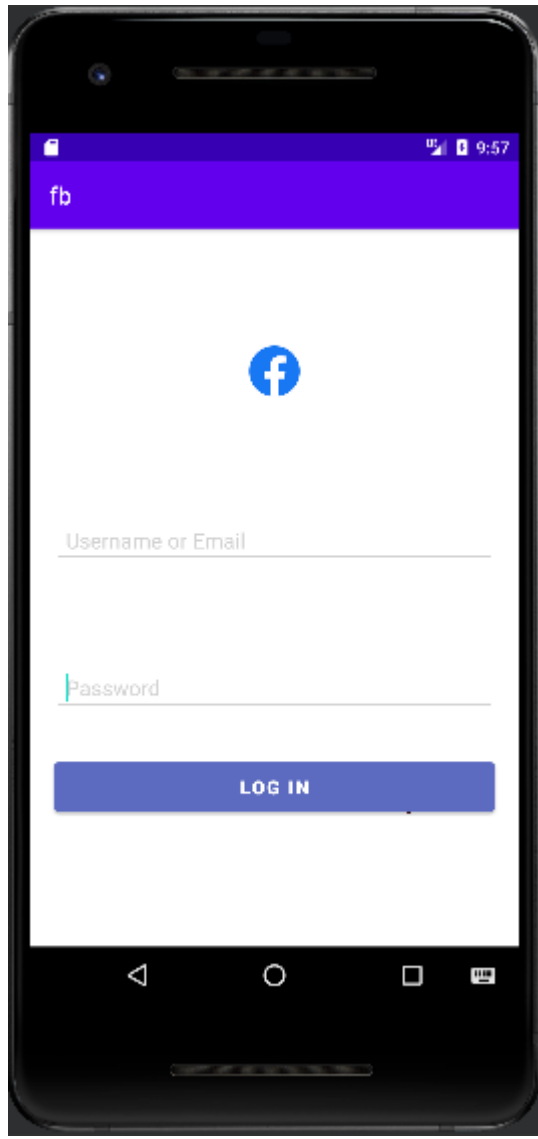
Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

CO3

PROGRAMS

PROGRAM 10

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM:

Develop an android application to implement Options Menu

GUI DESIGN

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">
<EditText
        android:id="@+id/popupmenu"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="btnPopup"
        android:hint="Select Item"
        android:editable="false"
        android:gravity="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainActivity.java

```java
package com.example.menu;

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

import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.EditText;
import android.widget.PopupMenu;
import android.widget.Toast;

import java.util.zip.Inflater;

public class MainActivity extends AppCompatActivity {

    Menu myMenu;
    EditText selectItem;

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

    //This function is to create option menu
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater inflater = getMenuInflater();
        inflater.inflate(R.menu.main_menu, menu);

        selectItem = (EditText)findViewById(R.id.popupmenu);

        return true;
    }

    //This function is for making the option menu clickable
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if (item.getItemId() == R.id.item1)
        {
```

48

```java
            Toast.makeText(this, "Home Selected", Toast.LENGTH_SHORT).show();
        }
        if (item.getItemId() == R.id.item2)
        {
            Toast.makeText(this, "About Selected", Toast.LENGTH_SHORT).show();
        }
        if (item.getItemId() == R.id.item3)
        {
            Toast.makeText(this, "Contact Selected", Toast.LENGTH_SHORT).show();
        }

        return true;
    }

    //This is for option menu, this function will trigger once the gadget against this
    //function is clicked.
    public void btnPopup(View view) {
        PopupMenu popup = new PopupMenu(this, view);
        popup.getMenuInflater().inflate(R.menu.main_menu, popup.getMenu());
        popup.show();


        //This function is to make the popup menu clickable
        popup.setOnMenuItemClickListener(new PopupMenu.OnMenuItemClickListener() {
            @Override
            public boolean onMenuItemClick(MenuItem menuItem) {
                if (menuItem.getItemId() == R.id.item1)
                {
                    selectItem.setText("Home");
                    Toast.makeText(MainActivity.this, "Home Selected",
Toast.LENGTH_SHORT).show();
                }
                if (menuItem.getItemId() == R.id.item2)
                {
                    selectItem.setText("About");
                    Toast.makeText(MainActivity.this, "About Selected",
Toast.LENGTH_SHORT).show();
                }
                if (menuItem.getItemId() == R.id.item3)
                {
                    selectItem.setText("Contact");
                    Toast.makeText(MainActivity.this, "Contact Selected",
Toast.LENGTH_SHORT).show();
                }
```

```
        return true;

        }

    });

    }

}
```

Colors.xml

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

<resources>
   <color name="colorPrimary">#6200EE</color>
   <color name="colorPrimaryDark">#3700B3</color>
   <color name="colorAccent">#03DAC5</color>
</resources>
```

String.xml

```xml
<resources>
   <string name="app_name">Menu</string>
</resources>
```

Style.xml

```xml
 <resources>

     <!-- Base application theme. -->

<style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">        <!--
Customize your theme here. -->
     <item name="colorPrimary">@color/colorPrimary</item>
     <item name="colorPrimaryDark">@color/colorPrimaryDark</item>
     <item name="colorAccent">@color/colorAccent</item>
   </style>
</resources>
```
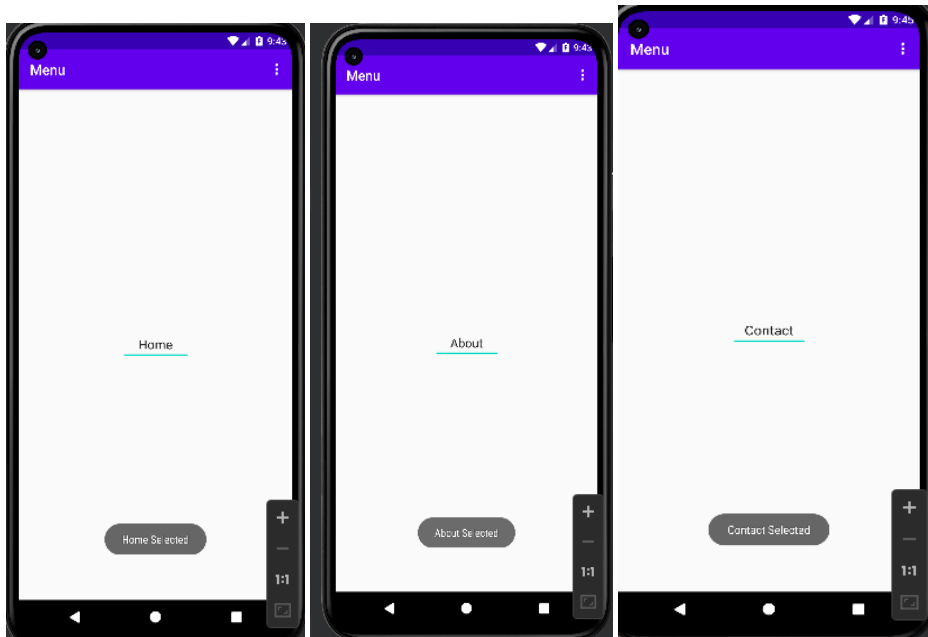
OUTPUT

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

CO4

PROGRAMS

PROGRAM 11

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM:

Android program to demonstrate the working of Alert Box.

GUI DESIGN

activity_main.xml

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

   <Button
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Show Alert"
      android:id="@+id/getBtn"
      android:layout_marginLeft="150dp"
      android:layout_marginTop="200dp" />

</RelativeLayout>
```

MainActivity.java

```java
package com.example.alertbox;

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

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity
{

   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
```

```java
        setContentView(R.layout.activity_main);
        Button btn=(Button) findViewById(R.id.getBtn);
        btn.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                AlertDialog.Builder builder=new AlertDialog.Builder(MainActivity.this);
                builder.setTitle("Login Alert").setMessage("Are you sure, you want to continue ?")
                    .setCancelable(false)
                    .setPositiveButton("Yes", new DialogInterface.OnClickListener()
                {
                    @Override
                    public void onClick(DialogInterface dialog, int which)
                    {
                        Toast.makeText(MainActivity.this,"Selected Option:
YES",Toast.LENGTH_SHORT).show();
                    }
                })
                .setNegativeButton("No",new DialogInterface.OnClickListener()
                {
                    @Override
                        public void onClick(DialogInterface dialog, int which)
                    {
                        Toast.makeText(MainActivity.this,"Selected Option:
No",Toast.LENGTH_SHORT).show();
                    }
                });
                AlertDialog dialog=builder.create();
                dialog.show();
            }
        });
    }
}
```

OUTPUT
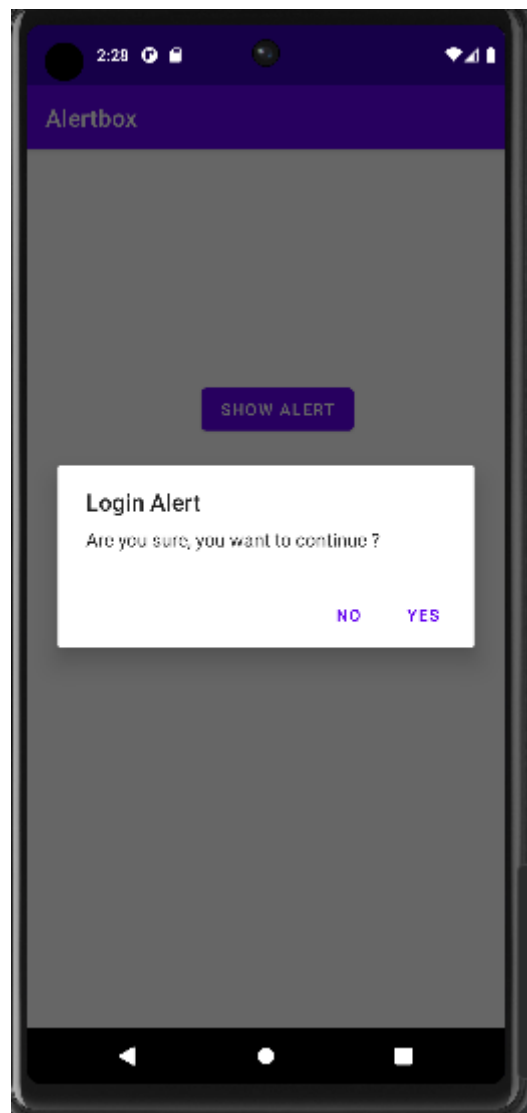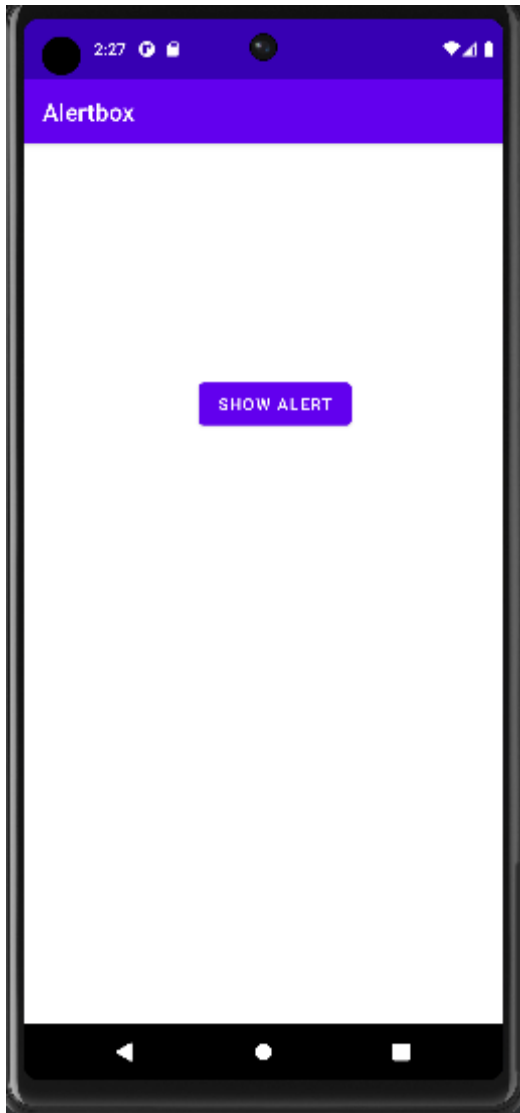
Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM 12

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Android program to implement Spinner

GUI DESIGN

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/txtVw"

      android:layout_width="wrap_content"

      android:layout_height="wrap_content"

      android:layout_marginLeft="50dp"

      android:layout_marginTop="150dp"

      android:text="Select User:"

      android:textStyle="bold"

      android:textSize="15dp" />

  <Spinner

      android:id="@+id/spinner1"

      android:layout_width="wrap_content"

      android:layout_height="wrap_content"

      android:layout_alignBottom="@+id/txtVw"

      android:layout_toRightOf="@+id/txtVw" />
```

MainActivity.java

```java
package com.example.spin;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
AdapterView.OnItemSelectedListener {
    String[] users = { "Prasanth AV", "Sandra Suresh", "Nithin Andrews", "Akhila Aravind",
"Gayathri" };
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Spinner spin = (Spinner) findViewById(R.id.spinner1);
        ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
android.R.layout.simple_spinner_item, users);
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        spin.setAdapter(adapter);
        spin.setOnItemSelectedListener(this);
    }
    @Override
    public void onItemSelected(AdapterView<?> arg0, View arg1, int position,long id) {
```
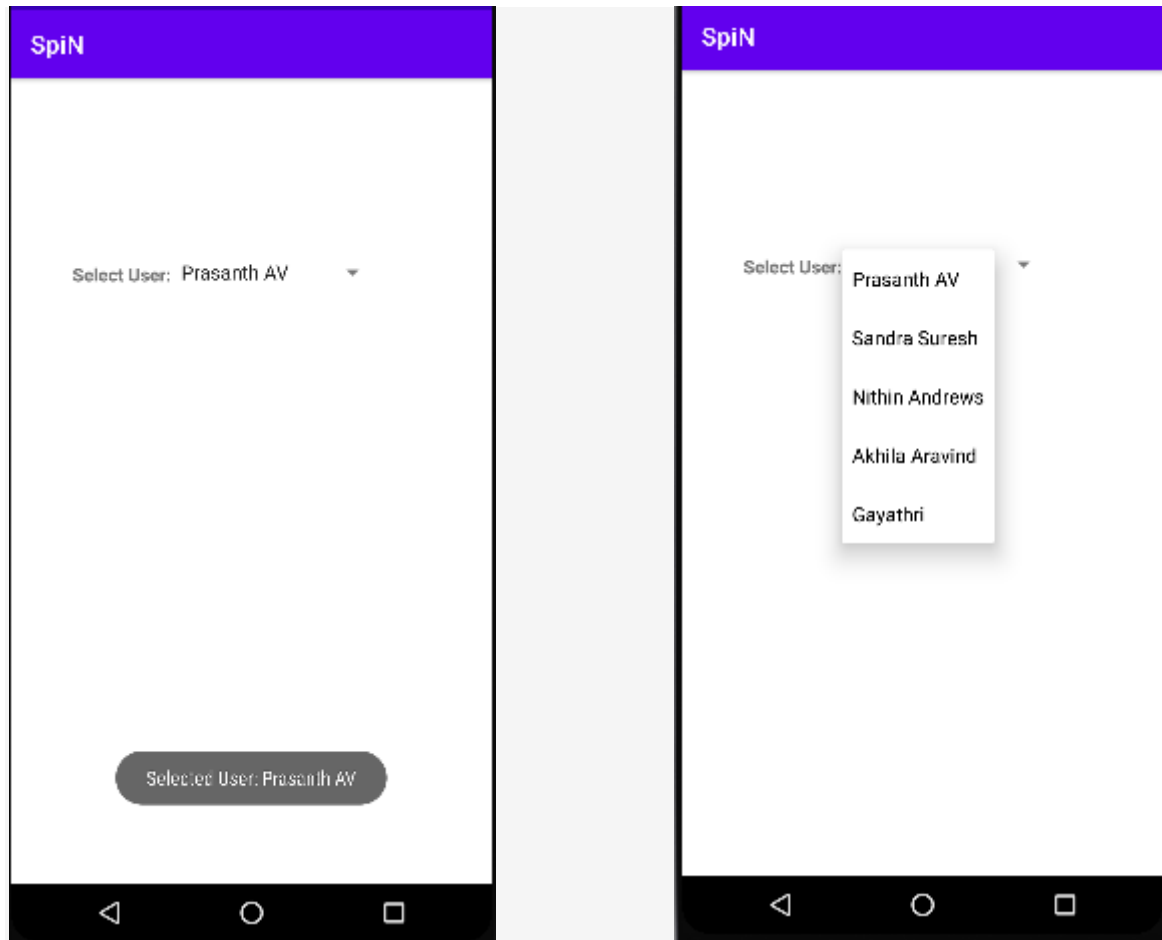
```java
    Toast.makeText(getApplicationContext(), "Selected User: "+users[position]
,Toast.LENGTH_LONG).show();

    }

    @Override

    public void onNothingSelected(AdapterView<?> arg0) {

        // TODO - Custom Code

    }
```

Output

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM 13

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Android program to apply themes via code and manifest file

GUI DESIGN

Themes.xml

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Theme"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/design_default_color_primary</item>
        <item
name="colorPrimaryVariant">@color/design_default_color_primary_dark</item>
        <item name="colorOnPrimary">@color/white</item>
    </style>
        <!-- Secondary brand color. -->
    <style name="TextviewStyle" parent="@android:style/Widget.TextView">
     <item name="android:layout_width">wrap_content</item>
        <item name="android:layout_height">wrap_content</item>
        <item name="android:layout_marginLeft">100dp</item>
        <item name="android:layout_marginTop">10dp</item>
        <item name="android:textColor">#86AD33</item>
        <item name="android:textStyle">bold</item>
        <item name="android:textSize">20dp</item>
    </style>
    <style name="ButtonStyle" parent="@android:style/Widget.Button">
        <item name="android:layout_width">200dp</item>
        <item name="android:layout_height">wrap_content</item>
        <item name="android:layout_marginLeft">100dp</item>
        <item name="android:layout_marginTop">10dp</item>
        <item name="android:textColor">#FFFFFF</item>
        <item name="android:background">#F1511B</item>
        <item name="android:textStyle">bold</item>
        <item name="android:textSize">15dp</item>

    </style>
    <string name="wlcmsg">welcome to Tutlane</string>
</resources>
```

activity main.xml

```xml
<LinearLayout android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    xmlns:android="http://schemas.android.com/apk/res/android" >
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/TextView1"
        android:layout_marginLeft="100dp"
        android:layout_marginTop="200dp"
        android:textColor="#00ADEF"
        android:textSize="15dp"
        android:text="@string/wlcmsg">
    </TextView>
    <TextView
        android:id="@+id/TextView2"
        style="@style/TextviewStyle"
        android:text="Welcome to Tutlane"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btnShow"
        android:text="Click on Button"
        style="@style/ButtonStyle"/>


</LinearLayout>
```

Output:
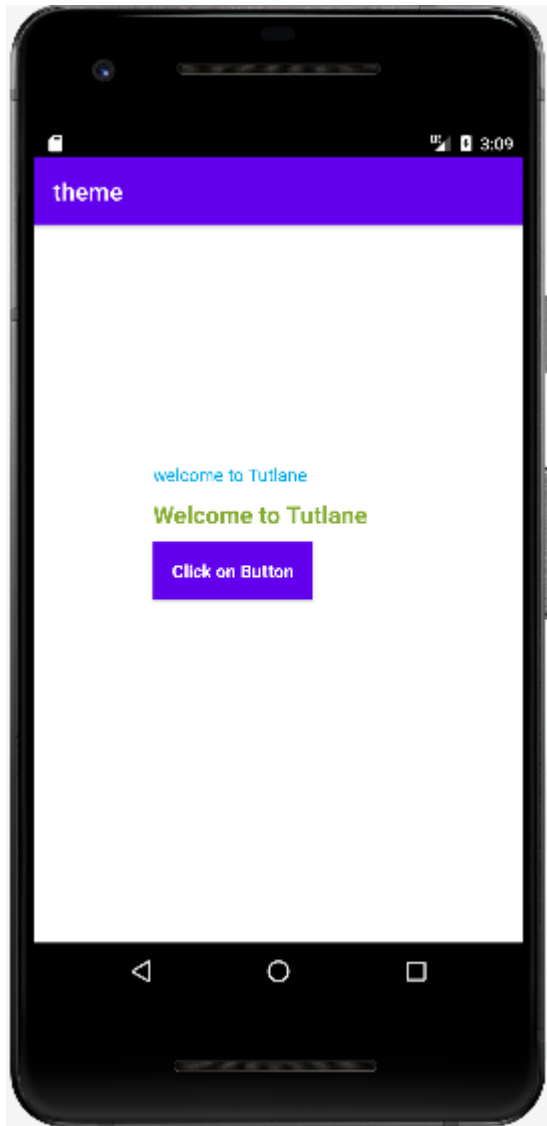
Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

PROGRAM 14

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM:

Create an android application performs CRUD operations in android SQLite

File.xml

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

  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="110dp"
    android:text="Enter Rollno:"
    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:textSize="20sp" />

  <TextView
    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" />
```

```xml
<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:textSize="20sp" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="210dp"
    android:text="Enter Marks:"
    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: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" />

<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="30dp" />

<Button
    android:id="@+id/Update"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
```

```xml
            android:layout_y="400dp"
            android:text="Update"
            android:textSize="30dp" />

        <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" />

        <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" />

</AbsoluteLayout>
```

File:java
```java
package com.androapp.data;

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;


    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
```

```java
        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);
        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);


        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)
    {

        if(view==Insert)
        {

            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();
        }

        if(view==Delete)
        {

            if(Rollno.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter Rollno");
                return;
            }
```

66

```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();
      }

      if(view==Update)
      {

        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();
      }

      if(view==View)
      {

        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));
```

```java
            }
            else
            {
               showMessage("Error", "Invalid Rollno");
               clearText();
            }
         }
               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();
   }
}
```
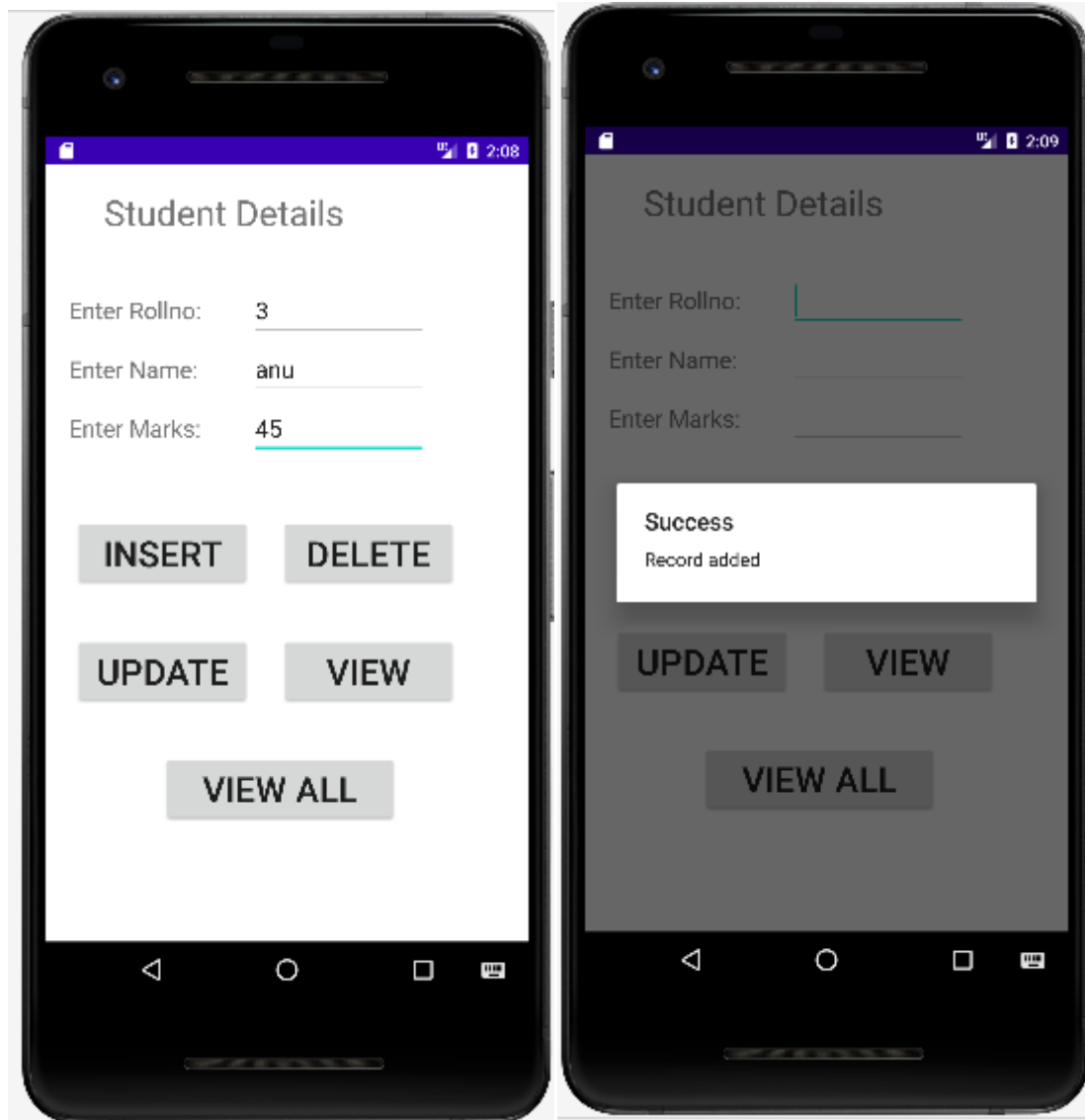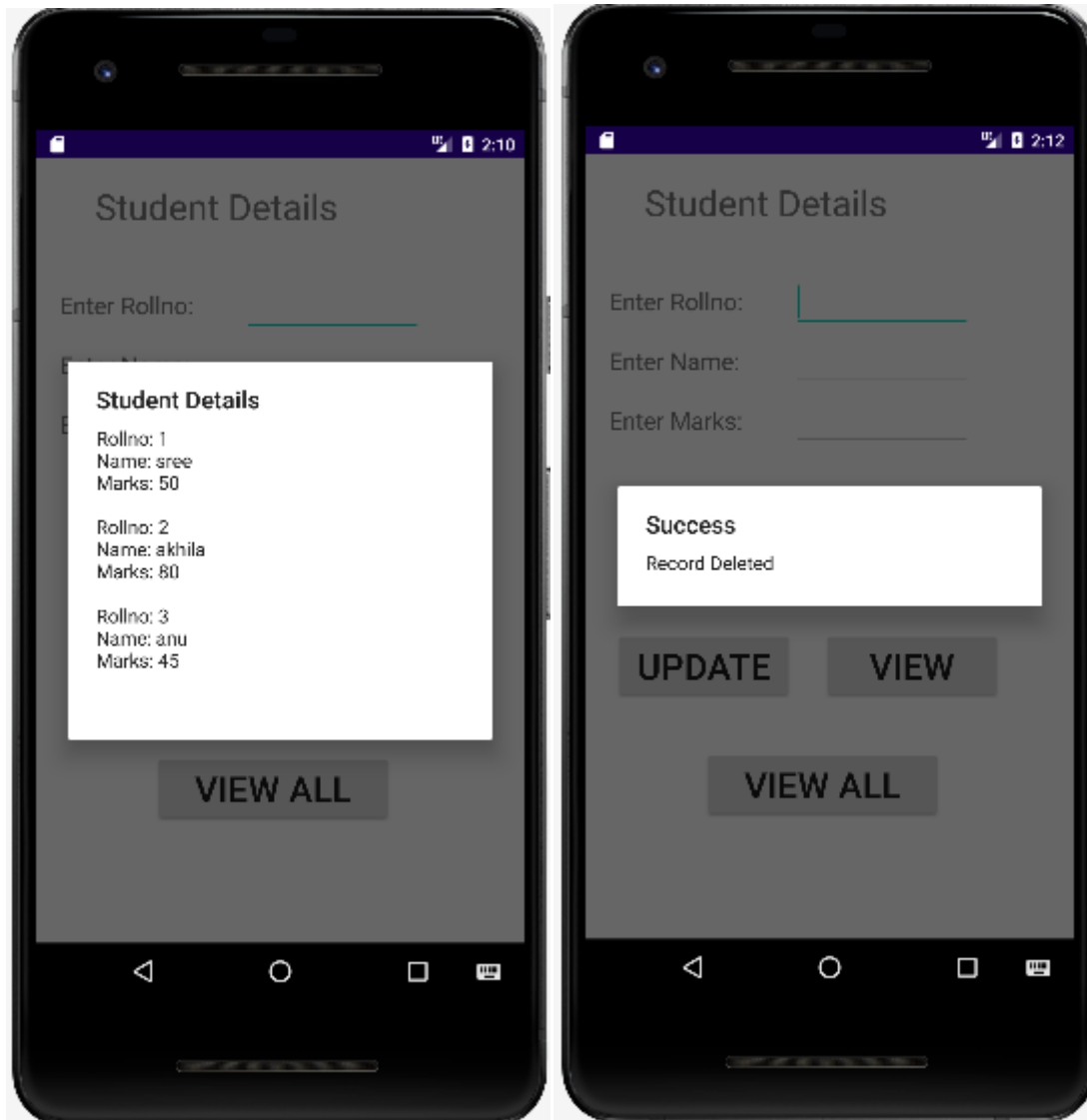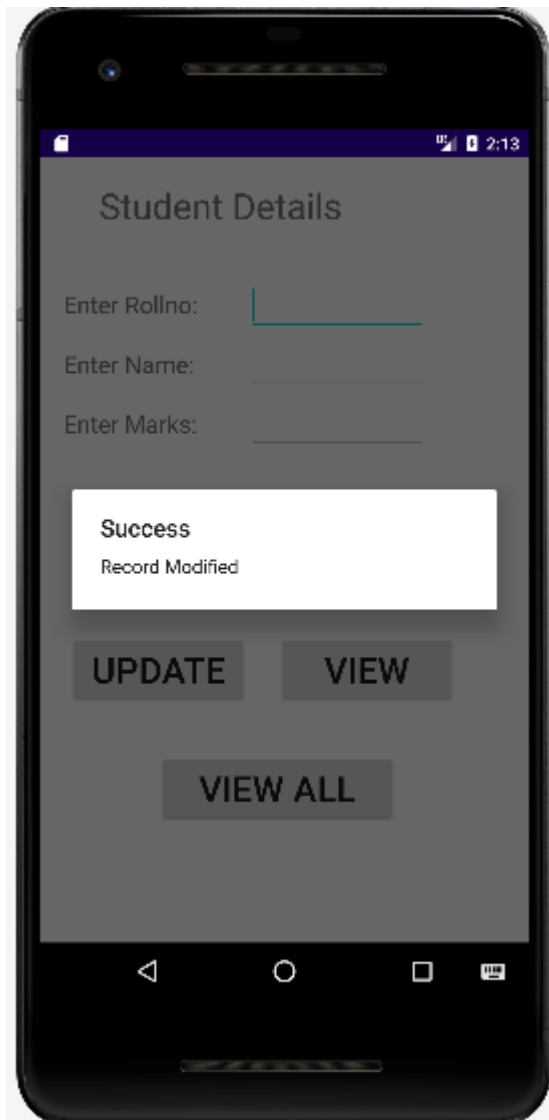
Output

Result/Observation

     Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor:

CO5

PROGRAMS

Name: P J Sreedeep	Roll No: 20	Name of Lab: Mobile Application Development Lab	Period:
Class: S3, MCA	Date:	Nature of Lab Work: Practical	Batch: 2021-2023

AIM

Develop an application as a Micro project which uses SQLite database as an assignment

GUI DESIGN

Entry.xml

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

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

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    android:background="@drawable/img2">

    <TextView

        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" />


    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"
```

```xml
    android:layout_x="20dp"
    android:layout_y="110dp"
    android:text="Enter Rollno:"
    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:textSize="20sp" />


<TextView
    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:textSize="20sp" />
```

```
<TextView

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_x="20dp"

    android:layout_y="210dp"

    android:text="Enter Marks:"

    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: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" />


<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="30dp" />


    <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="30dp" />


    <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" />


    <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" />



</AbsoluteLayout>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/img1"
    tools:context=".MainActivity">



    <TextView
        android:id="@+id/textView"
        android:layout_width="346dp"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="53dp"
        android:layout_marginEnd="11dp"
        android:layout_marginBottom="445dp"
        android:text="Student Details"
        android:textColor="#4A4444"
```

```
        android:textSize="40sp"

        android:textStyle="bold" />

</RelativeLayout>
```

Ic_launcher_background.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<vector xmlns:android="http://schemas.android.com/apk/res/android"
    android:width="108dp"
    android:height="108dp"
    android:viewportWidth="108"
    android:viewportHeight="108">
    <path
        android:fillColor="#3DDC84"
        android:pathData="M0,0h108v108h-108z" />
    <path
        android:fillColor="#00000000"
        android:pathData="M9,0L9,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,0L19,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M29,0L29,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
```

```xml
<path
  android:fillColor="#00000000"
  android:pathData="M39,0L39,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M49,0L49,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M59,0L59,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M69,0L69,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M79,0L79,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M89,0L89,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
```

```xml
<path
  android:fillColor="#00000000"
  android:pathData="M99,0L99,108"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,9L108,9"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,19L108,19"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,29L108,29"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,39L108,39"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,49L108,49"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
```

```xml
<path
  android:fillColor="#00000000"
  android:pathData="M0,59L108,59"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,69L108,69"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,79L108,79"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,89L108,89"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M0,99L108,99"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M19,29L89,29"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
```

```xml
<path
  android:fillColor="#00000000"
  android:pathData="M19,39L89,39"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M19,49L89,49"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M19,59L89,59"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M19,69L89,69"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M19,79L89,79"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
<path
  android:fillColor="#00000000"
  android:pathData="M29,19L29,89"
  android:strokeWidth="0.8"
  android:strokeColor="#33FFFFFF" />
```

```xml
    <path
      android:fillColor="#00000000"
      android:pathData="M39,19L39,89"
      android:strokeWidth="0.8"
      android:strokeColor="#33FFFFFF" />
    <path
      android:fillColor="#00000000"
      android:pathData="M49,19L49,89"
      android:strokeWidth="0.8"
      android:strokeColor="#33FFFFFF" />
    <path
      android:fillColor="#00000000"
      android:pathData="M59,19L59,89"
      android:strokeWidth="0.8"
      android:strokeColor="#33FFFFFF" />
    <path
      android:fillColor="#00000000"
      android:pathData="M69,19L69,89"
      android:strokeWidth="0.8"
      android:strokeColor="#33FFFFFF" />
    <path
      android:fillColor="#00000000"
      android:pathData="M79,19L79,89"
      android:strokeWidth="0.8"
      android:strokeColor="#33FFFFFF" />
</vector>
```

Entry.java

```java
package com.pandanadroversapplications.student;
import android.app.Activity;
```

```java
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 Entry 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_entry);


        Rollno=(EditText)findViewById(R.id.Rollno);

        Name=(EditText)findViewById(R.id.Name);

        Marks=(EditText)findViewById(R.id.Marks);

        Insert=(Button)findViewById(R.id.Insert);

        Delete=(Button)findViewById(R.id.Delete);

        Update=(Button)findViewById(R.id.Update);

        View=(Button)findViewById(R.id.View);
```

```java
        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();
```

```java
        }
        // 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;
           }
           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
```

```java
            {
                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);
```

```java
        builder.show();
    }
    public void clearText()
    {
        Rollno.setText("");
        Name.setText("");
        Marks.setText("");
        Rollno.requestFocus();
    }
}
```

Main_Activity.java

```java
package com.pandanadroversapplications.student;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import java.util.Objects;
public class MainActivity extends AppCompatActivity {

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

        Objects.requireNonNull(getSupportActionBar()).hide();
        new Handler().postDelayed(() -> {
            startActivity(new Intent(MainActivity.this,Entry.class));
            finish();
```
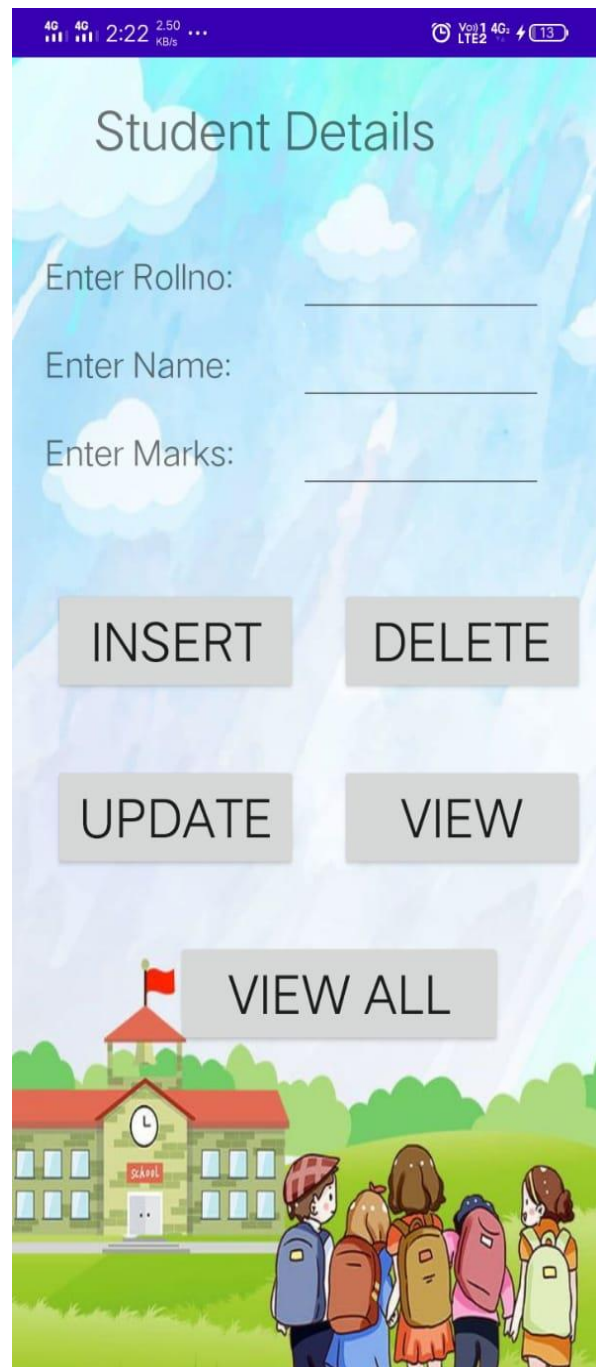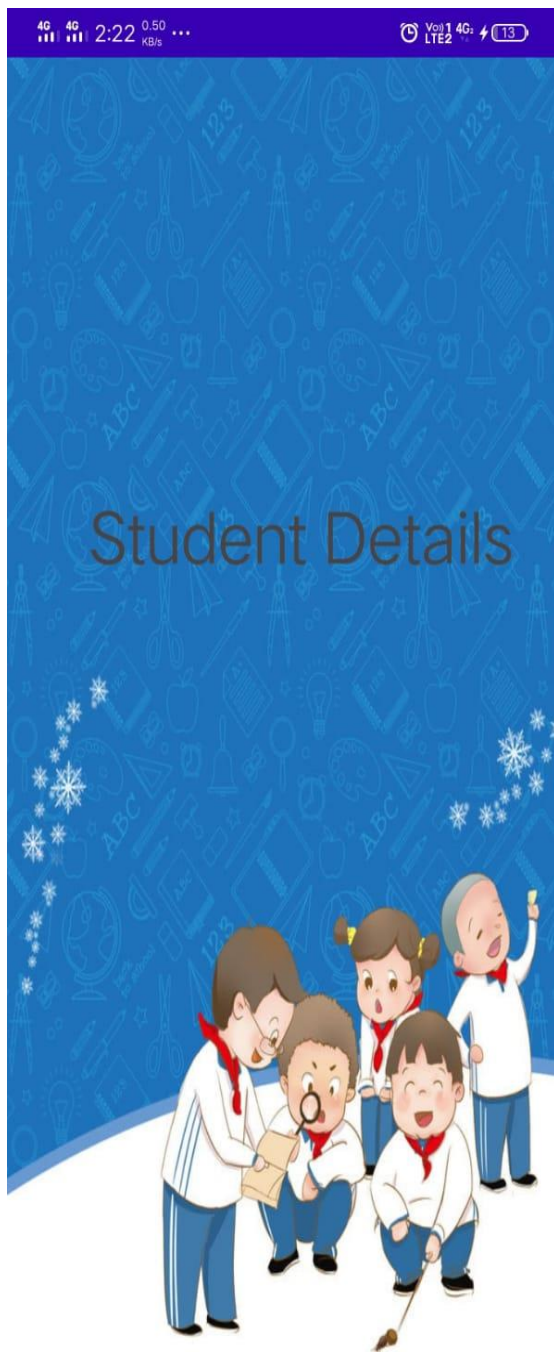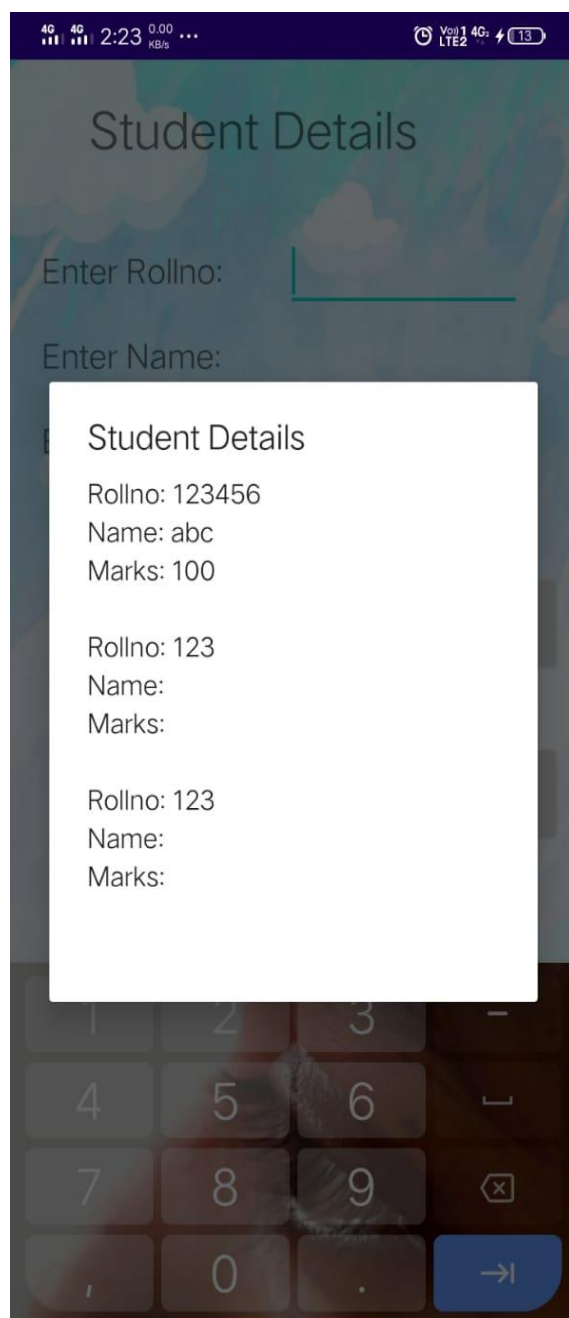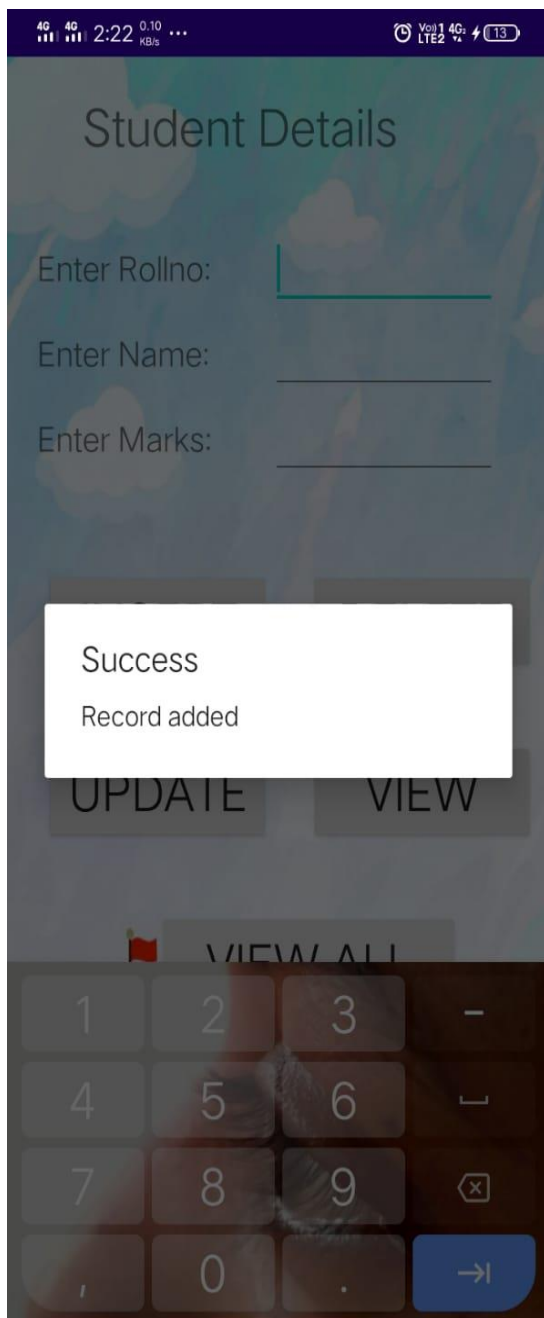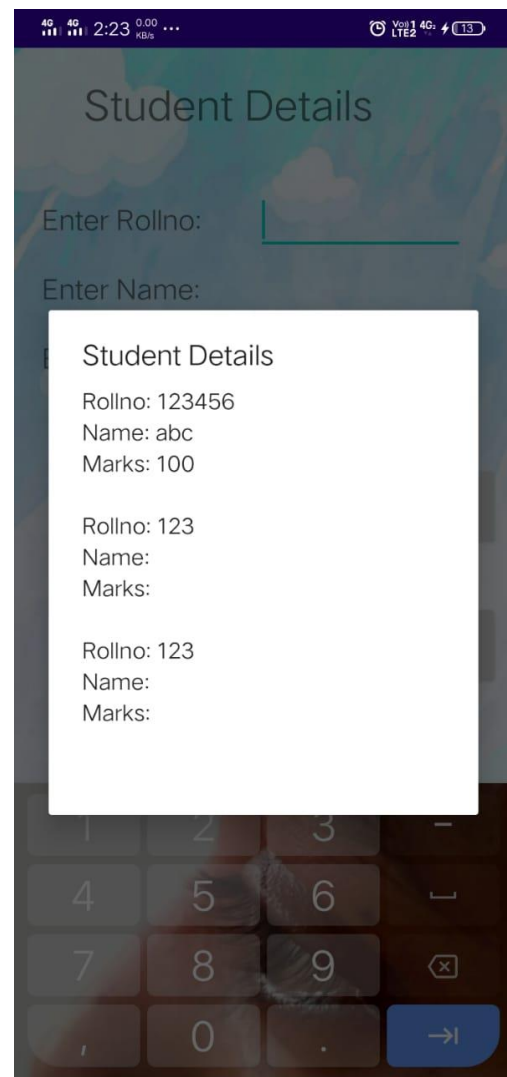
```
        }, 2000);
    }
}
```

Output

Result/Observation

Successfully completed the android program and output is obtained.

Viva(5)	Performance(5)	Total(10)

Assessor: