Practical – 1

AIM: Write an Android application for ‘Hello World’.

MainActivity.java:-

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

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"
    android:background="#03C3B1"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output–

Practical – 2

AIM: Write an Android application to make a Button to open a new activity from another activity.

MainActivity.java:-

```
package com.example.prectical2;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.*;
import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btn = (Button) findViewById(R.id.button);
        btn.setOnClickListener(new OnClickListener() {
            @Override
            public void onClick(View v) {//explicit intent
                Intent i = new Intent(MainActivity.this,AnotherActivity.class);
                startActivity(i);
            }
        });
    }
}
```

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"
    android:background="@color/design_default_color_secondary"
    tools:context=".MainActivity">


    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="@string/hello_world"
        android:text="submit"
        android:textColor="#86F10A"
        app:backgroundTint="#EF0000"
        app:iconTint="#DD2020"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

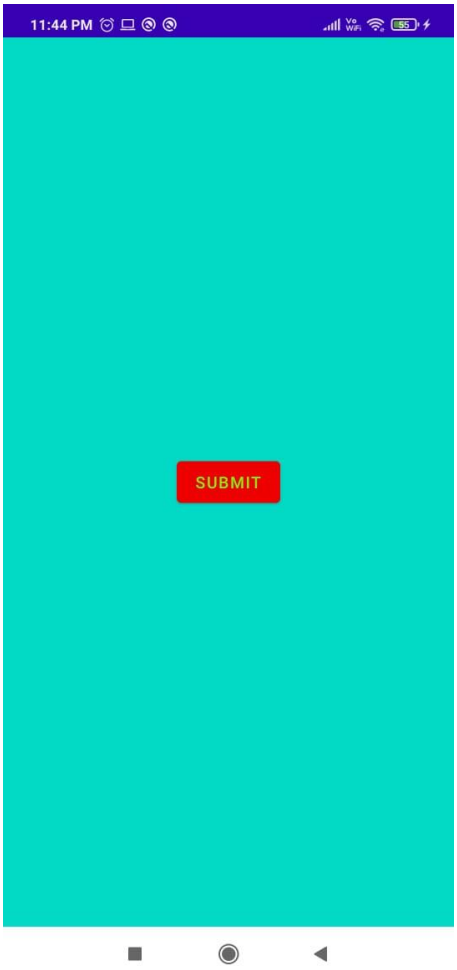
AnotherActivity.java:-

```
package com.example.prectical2;
import android.app.*;
import android.os.*;
public class AnotherActivity extends Activity{
        protected void onCreate(Bundle savedInstanceState) {
            // TODO Auto-generated method stub
            super.onCreate(savedInstanceState);
            setContentView(R.layout.activity_another);
        }
}
```

activity_another.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="@color/design_default_color_secondary"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

Output –



Practical – 3

AIM: Write an Android application to make calculator.

MainActivity.java:-

```
package com.example.dhruvscalsi;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.*;

public class MainActivity extends AppCompatActivity {
    EditText n1;
    EditText n2;
    Button b;
    TextView ans;
    public void sum(View e)
    {
        int i,j,an;
        ans=(TextView)findViewById(R.id.ans);
        i=Integer.parseInt(n1.getText().toString());
        j=Integer.parseInt(n2.getText().toString());
        an=i+j;
        ans.setText(Integer.toString(an));
    }
    public void sub(View e)
    {
        int i,j,an;
        ans=(TextView)findViewById(R.id.ans);
        i=Integer.parseInt(n1.getText().toString());
        j=Integer.parseInt(n2.getText().toString());
        an=i-j;
        ans.setText(Integer.toString(an));
    }
    public void mul(View e)
    {
        int i,j,an;
        ans=(TextView)findViewById(R.id.ans);
        i=Integer.parseInt(n1.getText().toString());
        j=Integer.parseInt(n2.getText().toString());
        an=i*j;
        ans.setText(Integer.toString(an));
    }
    public void div(View e)
    {
        int i,j,an;
        ans=(TextView)findViewById(R.id.ans);
        i=Integer.parseInt(n1.getText().toString());
        j=Integer.parseInt(n2.getText().toString());
        an=i/j;
        ans.setText(Integer.toString(an));
    }
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        n1=(EditText)findViewById(R.id.t1);
        n2=(EditText)findViewById(R.id.t2);
    }
}
```

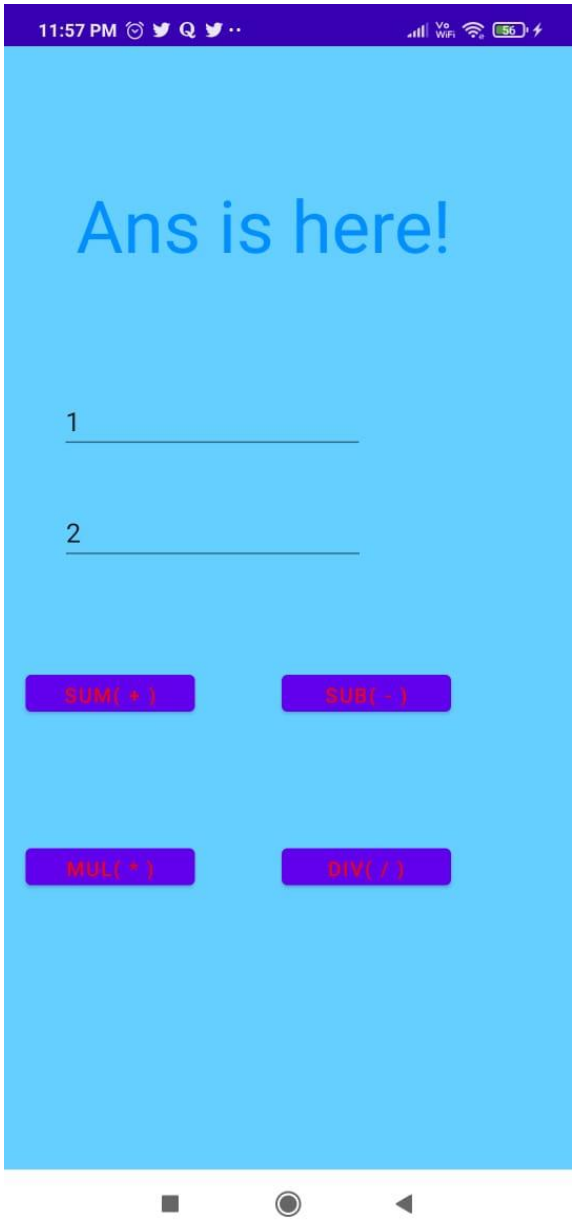
activity_main.xml :-

```
<?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"
    android:background="#65CFFF"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/sum"
        android:layout_width="117dp"
        android:layout_height="37dp"
        android:width="400sp"
        android:onClick="sum"
        android:text="Sum( + )"
        android:textAlignment="center"
        android:textColor="#F80404"
        android:textColorHighlight="#CD0303"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.054"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.58" />

    <Button
        android:id="@+id/div"
        android:layout_width="117dp"
        android:layout_height="37dp"
        android:width="400sp"
        android:onClick="div"
        android:text="Div( / )"
        android:textAlignment="center"
        android:textColor="#F80404"
        android:textColorHighlight="#CD0303"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.697"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.742" />


    <Button
        android:id="@+id/sub"
        android:layout_width="117dp"
        android:layout_height="37dp"
        android:width="400sp"
```

```
        android:onClick="sub"
        android:text="Sub( - )"
        android:textAlignment="center"
        android:textColor="#F80404"
        android:textColorHighlight="#CD0303"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.697"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.58" />

    <Button
        android:id="@+id/mul"
        android:layout_width="117dp"
        android:layout_height="37dp"
        android:width="400sp"
        android:onClick="mul"
        android:text="Mul( * )"
        android:textAlignment="center"
        android:textColor="#F80404"
        android:textColorHighlight="#CD0303"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.054"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.742" />

    <EditText
        android:id="@+id/t2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="2"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.214"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.429" />


    <EditText
        android:id="@+id/t1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.212"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.324" />


    <TextView
        android:id="@+id/ans"
```

```
        android:layout_width="293dp"
        android:layout_height="75dp"
        android:text="Ans is here!"
        android:textColor="#038FFF"
        android:textSize="50sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.128" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output –



Practical – 4

AIM: Write an Android application that create a simple dialog box with only one button.

MainActivity.java:-

```
package com.example.practical4;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.*;
import android.widget.*;

public class MainActivity extends AppCompatActivity{

        public Button b;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b = (Button) findViewById(R.id.button);

        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                openDialog();
            }
        });
    } public void openDialog(){
            Exdialog ed=new Exdialog();
            ed.show(getSupportFragmentManager(),"example dialog");


    }
}
```

Exdialog.java:-

```
package com.example.practical4;
import android.app.*;
import android.content.*;
import android.os.*;
import androidx.appcompat.app.*;
public class Exdialog extends AppCompatDialogFragment {
        public Dialog onCreateDialog(Bundle bundle)
        {
            AlertDialog.Builder builder = new AlertDialog.Builder(getActivity());
            builder.setTitle("Information")
                    .setMessage("This is a Dialog")
                    .setPositiveButton("ok", new DialogInterface.OnClickListener() {
                        @Override
```

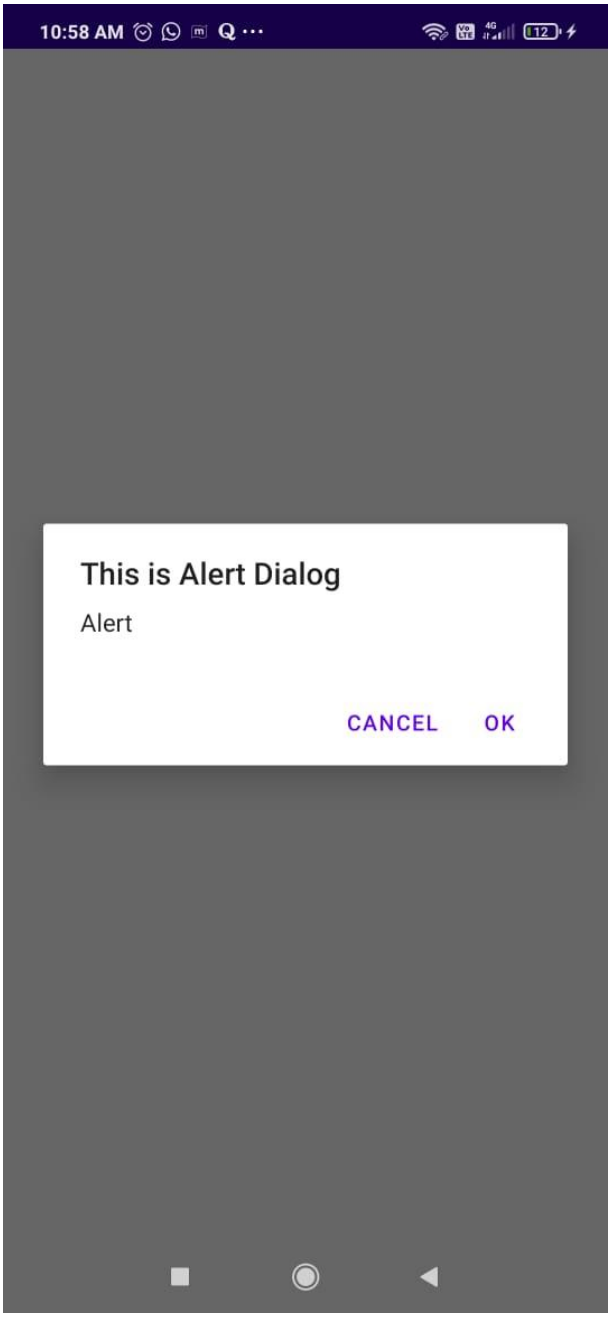
```
                        public void onClick(DialogInterface dialogInterface, int i) {
                        }
                    });
            return builder.create();        }
}
```

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"
    android:onClick="ondialog"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/button"
        android:layout_width="194dp"
        android:layout_height="108dp"
        android:text="opendialogbox"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499" />

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

Output –


10:58 AM
OPENDIALOGBOX


10:58 AM
This is Alert Dialog
Alert
CANCEL
OK

Practical – 5

AIM: Write an Android application to convert into different currencies for example, Rupees to dollar.

MainActivity.java:-

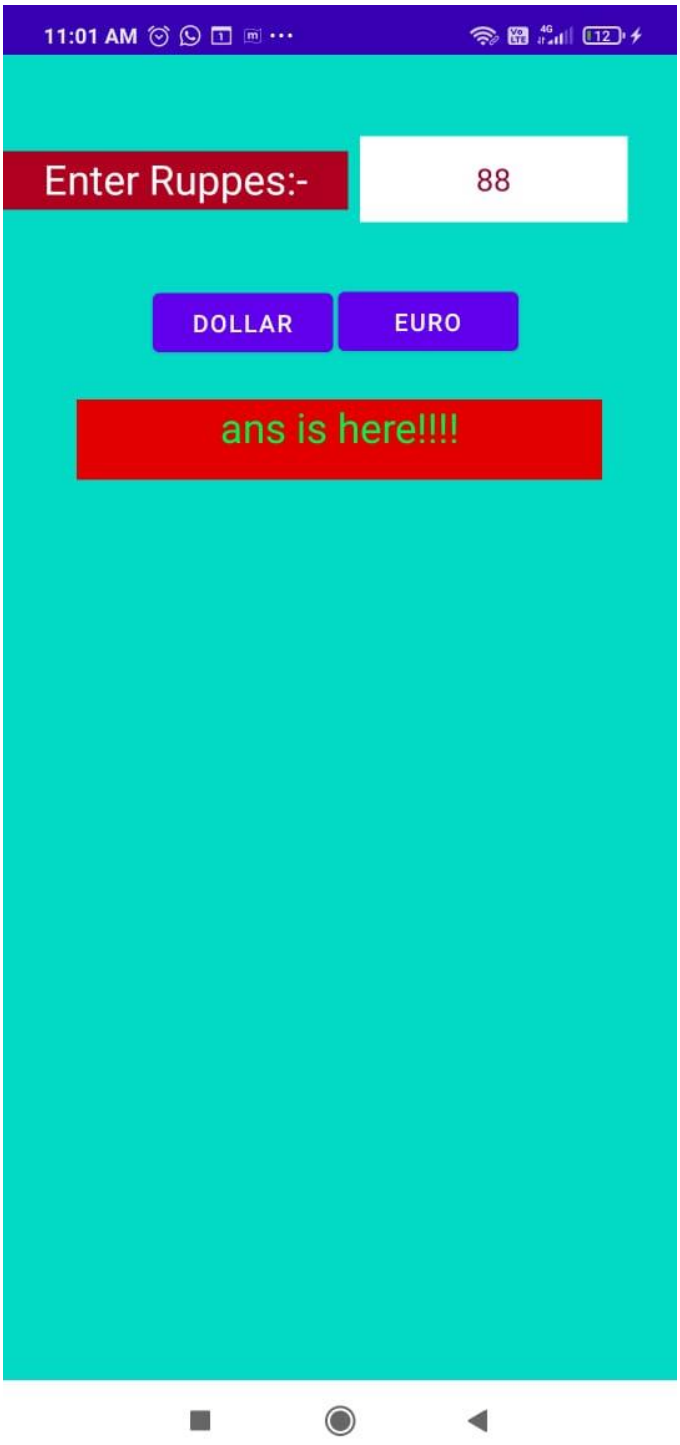
```
package com.example.practicals5;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.*;
public class MainActivity extends AppCompatActivity {
    public EditText e1;
    public EditText e2;
    public Button b1;
    public Button b2;
    public TextView t;
    public  void  dol(View v)
    {
            int i,j;
        i=Integer.parseInt(e1.getText().toString());
        //  j=Integer.parseInt(e2.getText().toString());
        t=(TextView) findViewById(R.id.t1);
            double dol;
            dol=i*0.014;
        t.setText(Double.toString(dol));
    }
    public  void  euro(View v)
    {
        int i;
    i=Integer.parseInt(e1.getText().toString());
    t=(TextView) findViewById(R.id.t1);
        double euro;
    euro=i*0.012;
    t.setText(Double.toString(euro));
    }
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText)findViewById(R.id.ed1);
        b1=(Button) findViewById(R.id.b2);
    }
}
```

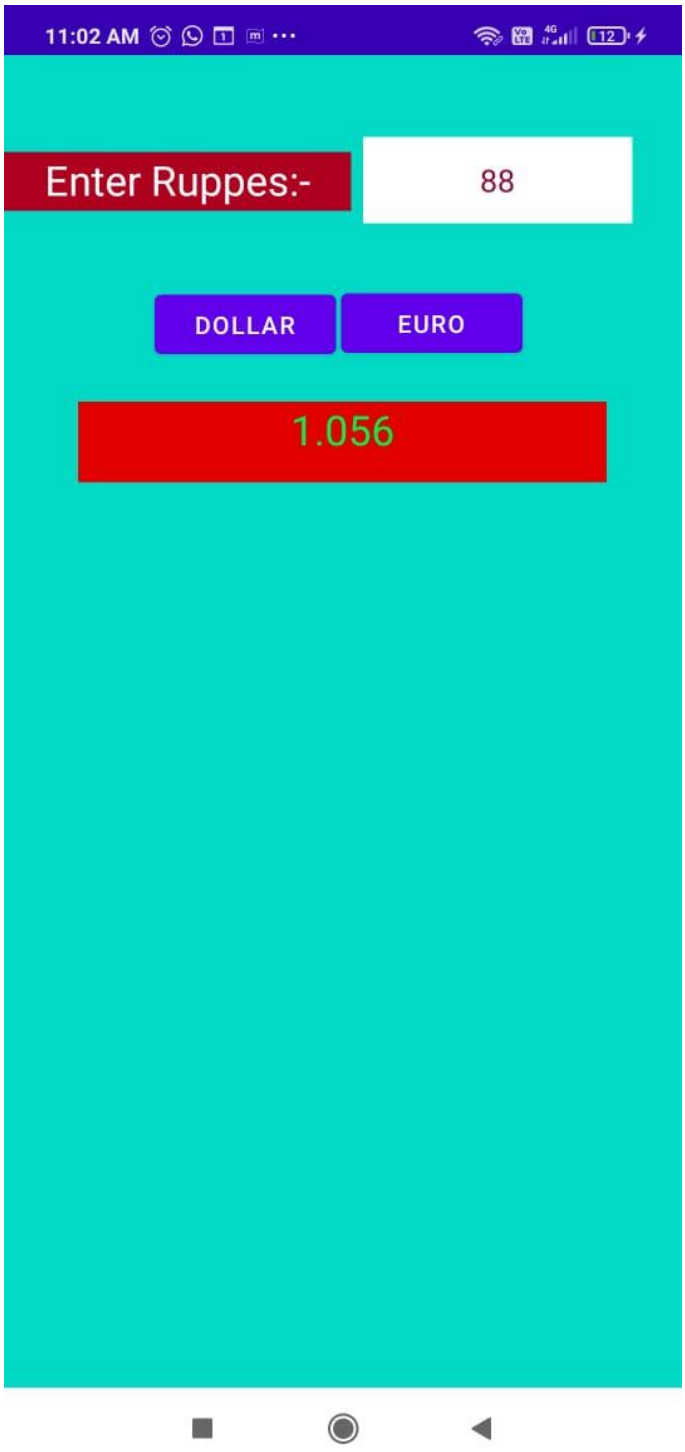
activity_main.xml :-

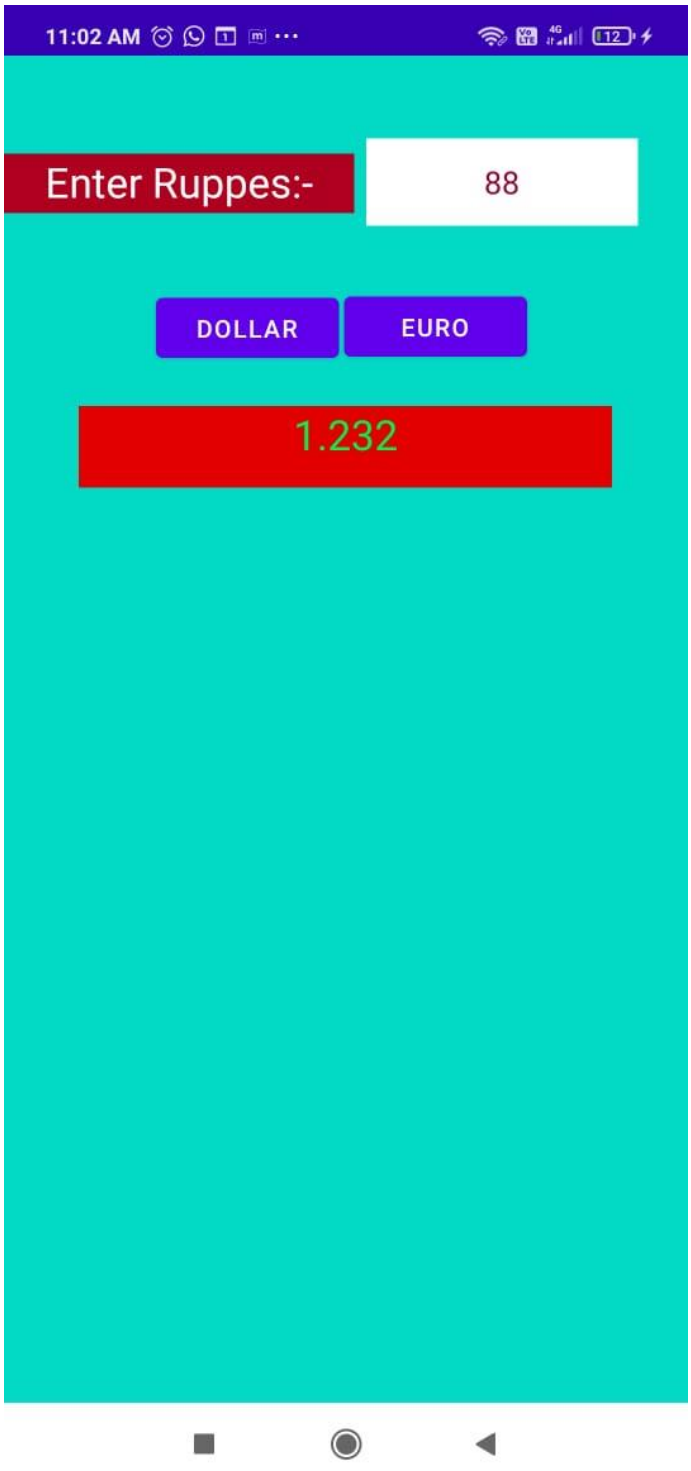
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
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

    <TextView
        android:id="@+id/t1"
        android:layout_width="306dp"
        android:layout_height="47dp"
        android:background="#E30000"
        android:text="ans is here!!!!"
        android:textAlignment="center"
        android:textColor="#00F646"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.495"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.277" />

    <Button
        android:id="@+id/b2"
        android:layout_width="105dp"
        android:layout_height="46dp"
        android:onClick="dol"
        android:text="Dollar"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.303"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.183" />

    <Button
        android:id="@+id/b3"
        android:layout_width="105dp"
        android:layout_height="46dp"
        android:onClick="euro"
        android:text="Euro"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.679"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.182" />

    <EditText
        android:id="@+id/ed1"
        android:layout_width="156dp"
        android:layout_height="50dp"
        android:autoText="false"
        android:background="@color/white"
        android:ems="10"
```

```
        android:inputType="textPersonName"
        android:text="88"
        android:textAlignment="center"
        android:textColor="#8F0232"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.878"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.066" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="201dp"
        android:layout_height="34dp"
        android:background="@color/design_default_color_error"
        android:text="Enter Ruppes:-"
        android:textAlignment="center"
        android:textColor="@color/design_default_color_surface"
        android:textSize="24sp"
        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"
        app:layout_constraintVertical_bias="0.076" />

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

OUTPUT –




11:02 AM
Enter Ruppes:-
88
DOLLAR
EURO
1.056


11:02 AM
Enter Ruppes:-
88
DOLLAR
EURO
1.232

Practical – 6

AIM: Write an android application to count library overdue.

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#70F3BE"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:padding="16dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.292">

        <EditText
            android:id="@+id/bookName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="@string/book_name"
            android:importantForAutofill="no"
            android:inputType="text" />

        <EditText
            android:id="@+id/issueDate"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="@dimen/default_margin_top"
            android:clickable="false"
            android:cursorVisible="false"
            android:focusable="false"
            android:focusableInTouchMode="false"
            android:hint="@string/issue_date"
            android:importantForAutofill="no"
            tools:ignore="TextFields" />

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

```
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="@dimen/default_margin_top"
            android:clickable="false"
            android:cursorVisible="false"
            android:focusable="false"
            android:focusableInTouchMode="false"
            android:hint="@string/due_date"
            android:importantForAutofill="no"
            tools:ignore="TextFields" />

        <EditText
            android:id="@+id/submitDate"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="@dimen/default_margin_top"
            android:clickable="false"
            android:cursorVisible="false"
            android:focusable="false"
            android:focusableInTouchMode="false"
            android:hint="@string/submit_date"
            android:importantForAutofill="no"
            tools:ignore="TextFields" />

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="@dimen/default_margin_top"
            android:gravity="center"
            android:orientation="horizontal">

            <TextView
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_marginEnd="5dp"
                android:layout_marginRight="5dp"
                android:layout_weight="7"
                android:text="@string/overdue_per_day" />

            <EditText
                android:id="@+id/overdueCharge"
                android:layout_width="0dp"
                android:layout_height="wrap_content"
                android:layout_weight="3"
                android:hint="@string/default_charge"
                android:importantForAutofill="no"
                android:inputType="numberDecimal" />
        </LinearLayout>

        <Button
            android:id="@+id/submit"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:layout_marginTop="@dimen/default_margin_top"
```

```
            android:text="@string/submit" />

        <TextView
            android:id="@+id/totalOverdue"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center_horizontal"
            android:layout_marginTop="@dimen/default_margin_top"
            android:gravity="center_horizontal"
            android:textAlignment="center"
            android:textColor="@color/black"
            android:textSize="24sp" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

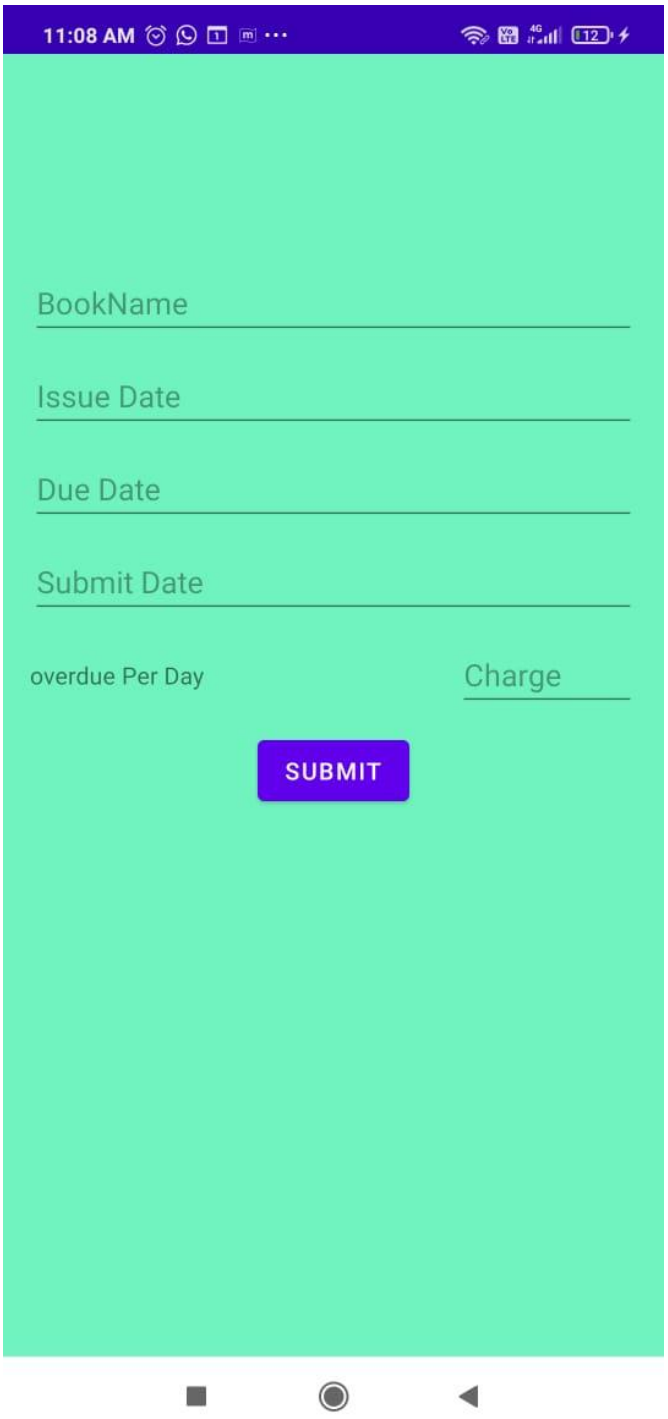
JAVA Code:

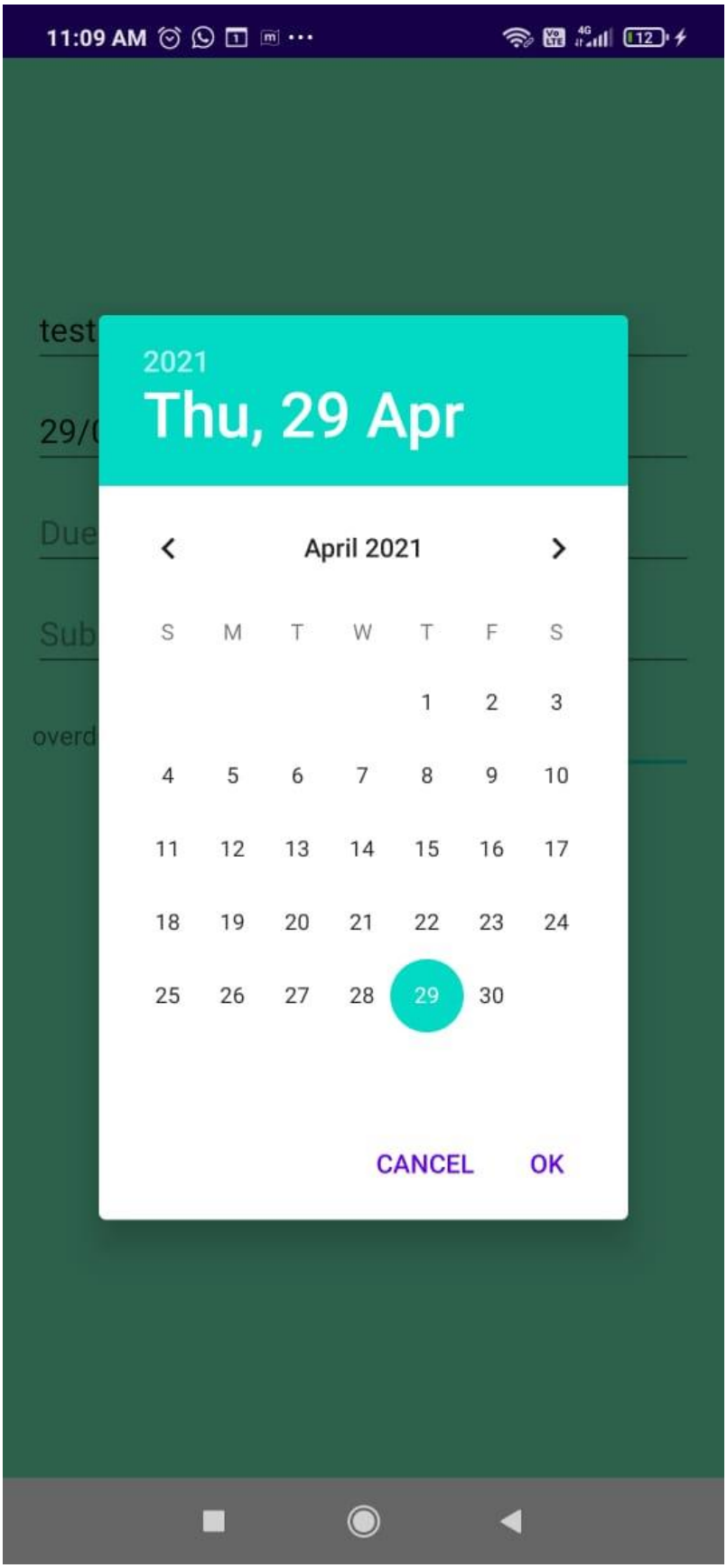
```
package com.example.overduecounter;

import android.annotation.SuppressLint;
import android.app.DatePickerDialog;
import android.os.Bundle;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.text.ParseException;
import java.text.SimpleDateFormat;
import java.util.Calendar;
import java.util.Date;
import java.util.Locale;
import java.util.concurrent.TimeUnit;
public class MainActivity extends AppCompatActivity {
    final Calendar myCalendar = Calendar.getInstance();
    final String myFormat = "dd/MM/yy";
    final SimpleDateFormat sdf = new SimpleDateFormat(myFormat, Locale.US);
    String fieldCalled = "issueDate";
    TextView etBookName, etIssueDate, etDueDate, etSubmitDate, etOverdueCharge;
    TextView tvTotalOverdue;
    Button btnSubmit;
    DatePickerDialog.OnDateSetListener dateSetListener = (view, year, month,
dayOfMonth) -> {
        myCalendar.set(Calendar.YEAR, year);
        myCalendar.set(Calendar.MONTH, month);
        myCalendar.set(Calendar.DAY_OF_MONTH, dayOfMonth);
        updateLabel();
    };
    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etBookName = findViewById(R.id.bookName);
```

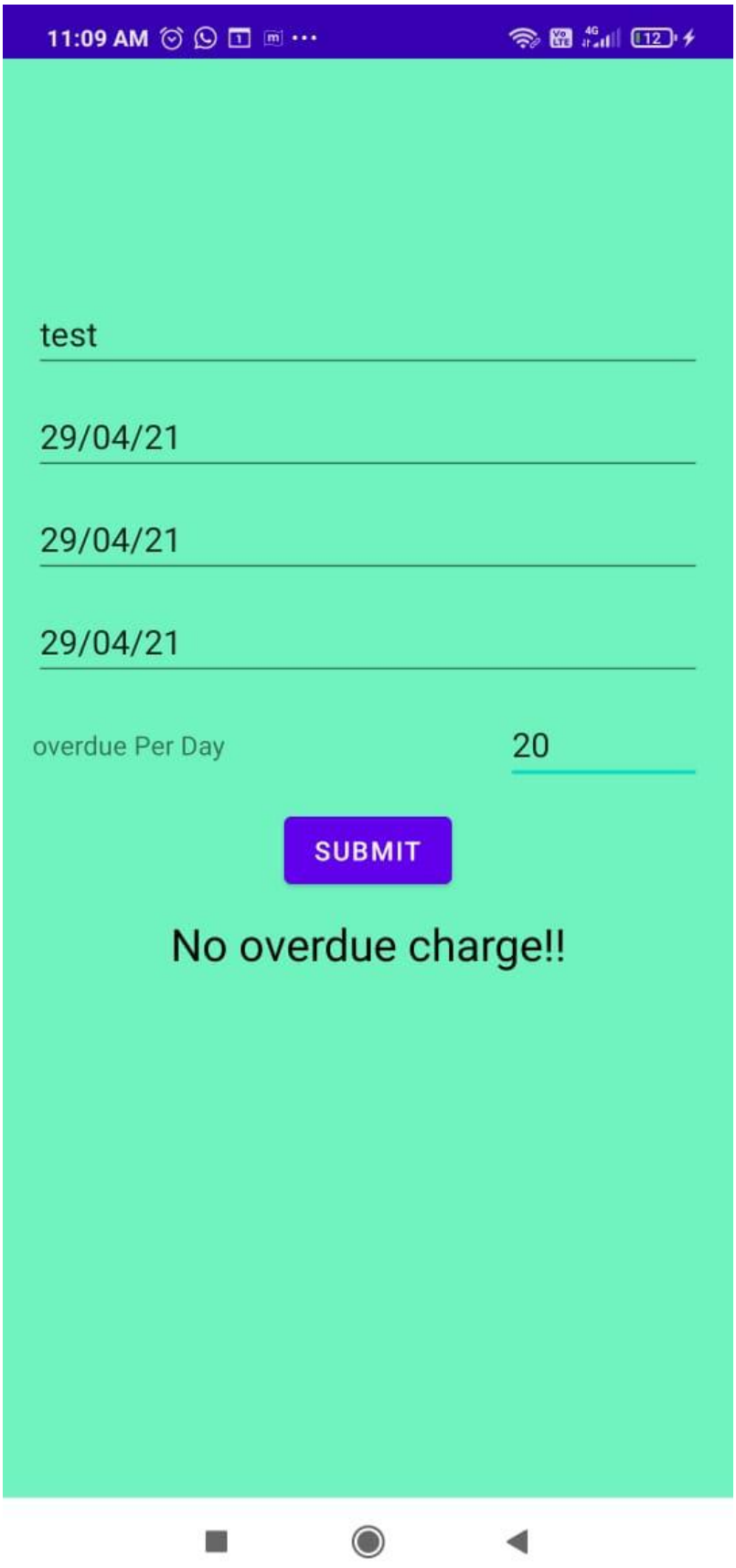
```
        etIssueDate = findViewById(R.id.issueDate);
        etDueDate = findViewById(R.id.dueDate);
        etSubmitDate = findViewById(R.id.submitDate);
        etOverdueCharge = findViewById(R.id.overdueCharge);
        btnSubmit = findViewById(R.id.submit);
        tvTotalOverdue = findViewById(R.id.totalOverdue);
        etIssueDate.setOnClickListener(v -> {
                    new DatePickerDialog(MainActivity.this,
                            dateSetListener,
                            myCalendar.get(Calendar.YEAR),
                            myCalendar.get(Calendar.MONTH),
                            myCalendar.get(Calendar.DAY_OF_MONTH)
                    ).show();
                    fieldCalled = "issueDate";
                }
        );
        etDueDate.setOnClickListener(v -> {
                    new DatePickerDialog(MainActivity.this,
                            dateSetListener,
                            myCalendar.get(Calendar.YEAR),
                            myCalendar.get(Calendar.MONTH),
                            myCalendar.get(Calendar.DAY_OF_MONTH)
                    ).show();
                    fieldCalled = "dueDate";
                }
        );
        etSubmitDate.setOnClickListener(v -> {
                    new DatePickerDialog(MainActivity.this,
                            dateSetListener,
                            myCalendar.get(Calendar.YEAR),
                            myCalendar.get(Calendar.MONTH),
                            myCalendar.get(Calendar.DAY_OF_MONTH)
                    ).show();
                    fieldCalled = "submitDate";
                }
        );
        btnSubmit.setOnClickListener(v -> calculateOverdue());
    }
    public void updateLabel() {
        switch (fieldCalled) {
            case "issueDate":
                etIssueDate.setText(sdf.format(myCalendar.getTime()));
                break;
            case "dueDate":
                etDueDate.setText(sdf.format(myCalendar.getTime()));
                break;
            case "submitDate":

                etSubmitDate.setText(sdf.format(myCalendar.getTime()));
                break;
        }
    }
    public void calculateOverdue() {
        String dueDateStr = etDueDate.getText().toString().trim();
        String submitDateStr = etSubmitDate.getText().toString().trim();
```

```
        String overdueChargeStr = etOverdueCharge.getText().toString().trim();
        if (dueDateStr.isEmpty()) {
            Toast.makeText(this, "Please enter Due date", Toast.LENGTH_SHORT).show();
            return;
        }
        if (submitDateStr.isEmpty()) {
            Toast.makeText(this, "Please enter Submit date",
Toast.LENGTH_SHORT).show();
            return;
        }
        if (overdueChargeStr.isEmpty()) {
            Toast.makeText(this, "Please enter Overdue charge",
Toast.LENGTH_SHORT).show();
            return;
        }
        try {
            Date dueDate = sdf.parse(dueDateStr);
            Date submitDate = sdf.parse(submitDateStr);
            long diff = submitDate.getTime() - dueDate.getTime();
            if (diff > 0) {
                int days = (int) TimeUnit.DAYS.convert(diff, TimeUnit.MILLISECONDS);
                double overdueCharge = Double.parseDouble(overdueChargeStr);
                double totalOverdueCharge = days * overdueCharge;
                @SuppressLint("DefaultLocale")
                String displayText = "Total Overdue Charge : ₹ " +
String.format("%.2f", totalOverdueCharge) + "/-";
                tvTotalOverdue.setText(displayText);
            } else {
                String displayText = "No overdue charge!!";
                tvTotalOverdue.setText(displayText);
            }
        } catch (ParseException e) {
            e.printStackTrace();
        }
    }
}
```

OUTPUT –


11:08 AM
BookName
Issue Date
Due Date
Submit Date
overdue Per Day
Charge
SUBMIT


11:09 AM
test
29/0
Due
Sub
overd
2021
Thu, 29 Apr
April 2021
S M T W T F S
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30
CANCEL
OK


11:09 AM
test
29/04/21
29/04/21
29/04/21
overdue Per Day
20
SUBMIT
No overdue charge!!

Practical – 7

AIM: Write an android application to convert a ball from size of radius 2(colour red) to radius 4(colour blue) to radius 6 (colour green). The ball must rotate in circle for 1 minute before changing size and colour.

XML Code:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#BEE4E1"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Spinner
        android:id="@+id/radius"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:entries="@array/radius"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        tools:listitem="@layout/support_simple_spinner_dropdown_item" />

    <com.example.convertball.Ball
        android:id="@+id/ball"
        android:layout_width="0dp"
        android:layout_height="0dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@id/radius" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

String.xml

```
<resources>
    <string name="app_name">Convert Ball</string>
    <string-array name="radius">
        <item>Radius 2</item>
        <item>Radius 4</item>
        <item>Radius 6</item>
```

```
    </string-array>
</resources>
```

JAVA Code:

1. Mainactivity.java

```
package com.example.convertball;

import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.RotateAnimation;
import android.widget.AdapterView;
import android.widget.Spinner;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    Ball ball;
    Spinner spnRadius;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        spnRadius = findViewById(R.id.radius);
        ball = findViewById(R.id.ball);
        spnRadius.setOnItemSelectedListener(new
AdapterView.OnItemSelectedListener() {
            @Override
            public void onItemSelected(AdapterView<?> parent, View view, int
position, long id) {
                ball.clearAnimation();
                animate(position);
            }
            @Override
            public void onNothingSelected(AdapterView<?> parent) {
            }
        });
    }
    public void animate(int position) {
        RotateAnimation rotate = new RotateAnimation(
                0f,
                360f,
                RotateAnimation.RELATIVE_TO_SELF,
                0.5f,
                RotateAnimation.RELATIVE_TO_SELF, 0.5f
        );
        rotate.setDuration(1000);
        rotate.setRepeatCount(4); // 1000 * 60, rotate 60 times in 1 minute
        rotate.setAnimationListener(new Animation.AnimationListener() {
            @Override
            public void onAnimationStart(Animation animation) {
            }
            @Override
```

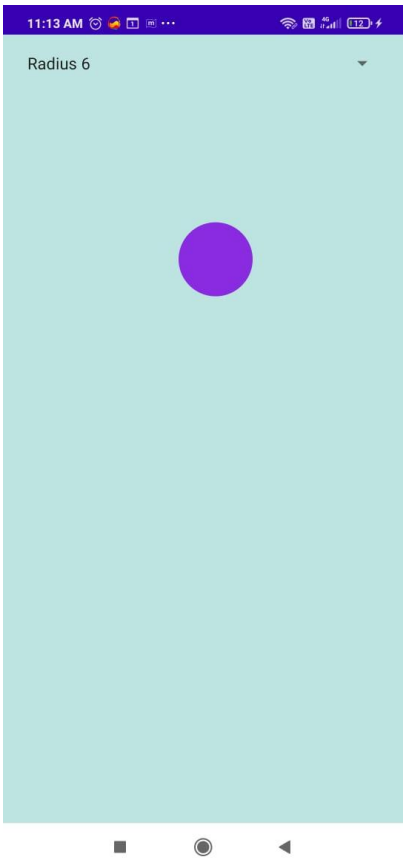
```
            public void onAnimationEnd(Animation animation) {
                if (position == 0) {
                    ball.radius = 50;
                    ball.colorHex = "#ffe700";
                    ball.invalidate();
                } else if (position == 1) {
                    ball.radius = 100;
                    ball.colorHex = "#8a2be2";
                    ball.invalidate();
                } else if (position == 2) {
                    ball.radius = 200;
                    ball.colorHex = "#66cdaa";
                    ball.invalidate();
                }
            }
            @Override
            public void onAnimationRepeat(Animation animation) {
            }
        });
        ball.startAnimation(rotate);
    }
}
```

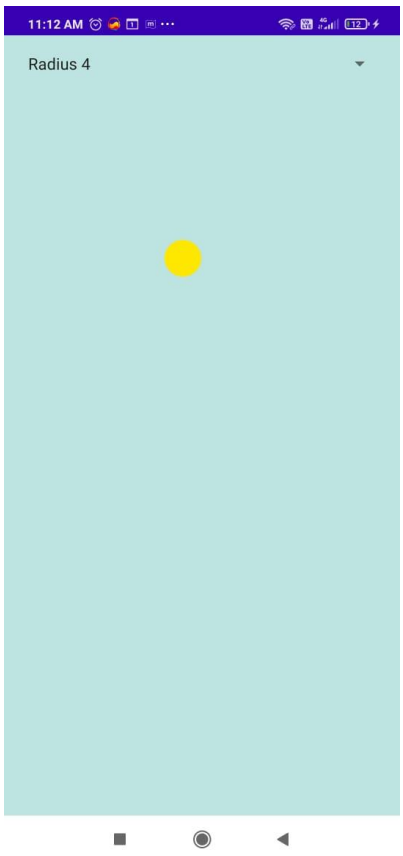
2. Ball.java

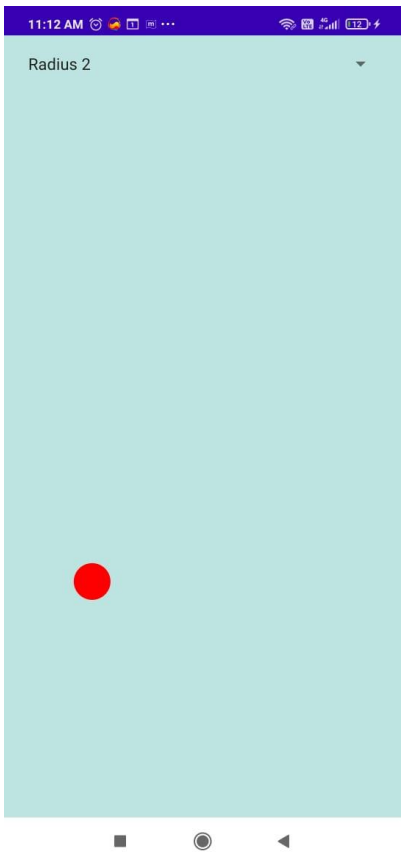
```
package com.example.convertball;
import android.annotation.TargetApi;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Build;
import android.util.AttributeSet;
import android.view.View;
import android.view.ViewTreeObserver;
public class Ball extends View {
    public String colorHex = "#ff0000";
    private final Paint drawPaint;
    private float size;
    public float radius = 50;
    public Ball(final Context context, final AttributeSet attrs) {
        super(context, attrs);
        drawPaint = new Paint();
        drawPaint.setAntiAlias(true);
        setOnMeasureCallback();
    }
    @Override
    protected void onDraw(final Canvas canvas) {
        super.onDraw(canvas);
        drawPaint.setColor(Color.parseColor(colorHex));
        canvas.drawCircle(size, size, radius, drawPaint);
    }
    private void setOnMeasureCallback() {
        ViewTreeObserver vto = getViewTreeObserver();
        vto.addOnGlobalLayoutListener(new
```

```
ViewTreeObserver.OnGlobalLayoutListener() {
            @Override
            public void onGlobalLayout() {
                removeOnGlobalLayoutListener(this);
                size = getMeasuredWidth() / 2;
            }
        });
    }
    @TargetApi(Build.VERSION_CODES.JELLY_BEAN)
    private void
removeOnGlobalLayoutListener(ViewTreeObserver.OnGlobalLayoutListener listener) {
        getViewTreeObserver().removeOnGlobalLayoutListener(listener);
    }

}
```

OUTPUT –







Practical – 8

AIM: Write an application to mark the daily route of travel on a map.

MainActivity.java:-

```
package="com.example.trackyourpath">
import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Location;
import android.os.Bundle;
import android.view.View;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.core.app.ActivityCompat;
import androidx.fragment.app.FragmentActivity;
import com.directions.route.AbstractRouting;
import com.directions.route.Route;
import com.directions.route.RouteException;
import com.directions.route.Routing;
import com.directions.route.RoutingListener;
import com.google.android.gms.location.FusedLocationProviderClient;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.maps.CameraUpdate;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;
import com.google.android.gms.maps.model.Polyline;
import com.google.android.gms.maps.model.PolylineOptions;
import com.google.android.gms.tasks.Task;
import com.google.android.material.snackbar.Snackbar;
import java.util.ArrayList;
import java.util.List;
public class MainActivity extends FragmentActivity implements OnMapReadyCallback,
RoutingListener {
    // to get location permission
    final static int LOCATION_REQUEST_CODE = 23;
    // google map object
    GoogleMap googleMap;
    // to get the current location
    FusedLocationProviderClient fusedLocationProviderClient;
    // source location
    Location srcLocation;
    LatLng start, end;
    //polyline object
    private List<Polyline> polyLines = null;
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        fusedLocationProviderClient =
LocationServices.getFusedLocationProviderClient(this);
        getMyLocation();
//init google map fragment to show map.
        SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager()
                .findFragmentById(R.id.map);
        mapFragment.getMapAsync(this);
    }
    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[]
permissions, @NonNull int[] grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);
        if (requestCode == LOCATION_REQUEST_CODE) {
            if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
                getMyLocation();
            }
        }
    }
    //to get user location
    private void getMyLocation() {
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANTED &&
                ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED) {
            ActivityCompat.requestPermissions(
                    this,
                    new String[]{Manifest.permission.ACCESS_FINE_LOCATION},
                    LOCATION_REQUEST_CODE
            );
            return;
        }
        Task<Location> task = fusedLocationProviderClient.getLastLocation();
        task.addOnSuccessListener(location -> {
            if (location != null) {
                srcLocation = location;
                LatLng latLng = new LatLng(location.getLatitude(),
location.getLongitude());
                CameraUpdate cameraUpdate = CameraUpdateFactory.newLatLngZoom(
                        latLng, 16f);
                googleMap.animateCamera(cameraUpdate);
            }
        });
        if (googleMap != null) {
            googleMap.setMyLocationEnabled(true);
//get destination location when user click on map
            googleMap.setOnMapClickListener(latLng -> {
                end = latLng;
                googleMap.clear();
                if (srcLocation != null) {
                    start = new LatLng(srcLocation.getLatitude(),
```

```
srcLocation.getLongitude());
//start route finding
                    findRoutes(start, end);
                }
            });
        }
    }
    @Override
    public void onMapReady(GoogleMap googleMap) {
        this.googleMap = googleMap;
        getMyLocation();
    }
    void findRoutes(LatLng s, LatLng e) {
        if (s == null || e == null) {
            Toast.makeText(MainActivity.this, "Unable to get location",
Toast.LENGTH_SHORT).show();
        } else {
            Routing routing = new Routing.Builder()
                    .travelMode(AbstractRouting.TravelMode.DRIVING)
                    .withListener(this)
                    .alternativeRoutes(true)
                    .waypoints(s, e)
                    .key("AIzaSyBqXOzJpvCZje0eLRWgSylDuPTUAcUu05k") //also define
your api key here.
                    .build();
            routing.execute();
        }
    }
    // Routing call back functions.
    @Override
    public void onRoutingFailure(RouteException e) {
        View parentLayout = findViewById(android.R.id.content);
        Snackbar snackbar = Snackbar.make(parentLayout, e.toString(),
Snackbar.LENGTH_LONG);
        snackbar.show();
    }
    @Override
    public void onRoutingStart() {
        Toast.makeText(MainActivity.this, "Finding Route...",
Toast.LENGTH_LONG).show();
    }
    //If Route finding success..
    @Override
    public void onRoutingSuccess(ArrayList<Route> route, int shortestRouteIndex) {
        if (polyLines != null) {
            polyLines.clear();
        }
        PolylineOptions polyOptions = new PolylineOptions();
        LatLng polylineStartLatLng = null;
        LatLng polylineEndLatLng = null;
        polyLines = new ArrayList<>();
//add route(s) to the map using polyline
        for (int i = 0; i < route.size(); i++) {
            if (i == shortestRouteIndex) {
```

```
polyOptions.color(getResources().getColor(R.color.design_default_color_primary));
                polyOptions.width(7);
                polyOptions.addAll(route.get(shortestRouteIndex).getPoints());
                Polyline polyline = googleMap.addPolyline(polyOptions);
                polylineStartLatLng = polyline.getPoints().get(0);
                int k = polyline.getPoints().size();
                polylineEndLatLng = polyline.getPoints().get(k - 1);
                polyLines.add(polyline);
            }
        }
//Add Marker on route starting position
        MarkerOptions startMarker = new MarkerOptions();
        startMarker.position(polylineStartLatLng);
        startMarker.title("My Location");
        googleMap.addMarker(startMarker);
//Add Marker on route ending position
        MarkerOptions endMarker = new MarkerOptions();
        endMarker.position(polylineEndLatLng);
        endMarker.title("Destination");
        googleMap.addMarker(endMarker);
    }
    @Override
    public void onRoutingCancelled() {
        findRoutes(start, end);
    }
}
```

activity_main.xml :-

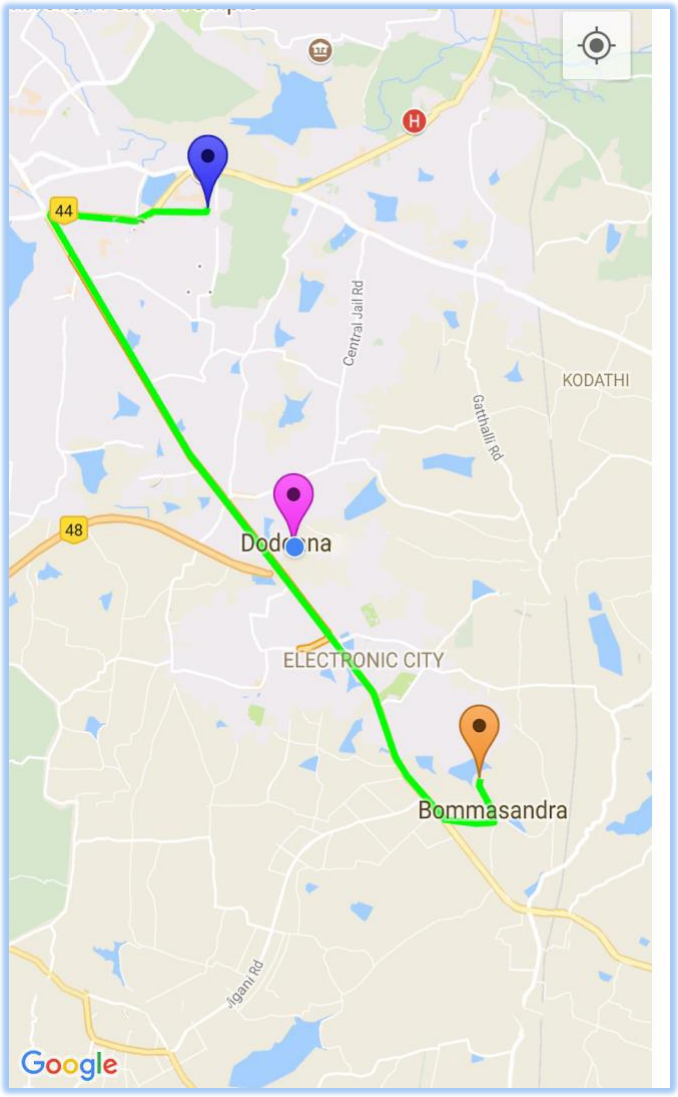
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <fragment
        android:id="@+id/map"
        android:name="com.google.android.gms.maps.SupportMapFragment"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity" />
</LinearLayout>
```

AndroidManifest.xml :-

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

```
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.trackyourpath ">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <meta-data
            android:name="com.google.android.geo.API_KEY"
            android:value="DfnsfbddfBKPj30TdungOZdDyK8AAS7wgnQQic" />
        <meta-data android:name="com.google.android.gms.version"
            android:value="@integer/google_play_services_version" />
    </application>
</manifest>
    android_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">
<fragment
    android:id="@+id/map"
    android:name="com.google.android.gms.maps.SupportMapFragment"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" />
</LinearLayout>
```

OUTPUT –


44
48
Central Jail Rd
KODATHI
Garthalli Rd
Dodd na
ELECTRONIC CITY
Bommasandra
Google

Practical – 9

AIM: Write an application to record video and audio on topic “Intent” and play the audio and video.

MainActivity.java:-

```
package com.example.videoplayer;
import android.annotation.SuppressLint;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.media.MediaPlayer;
import android.media.MediaRecorder;
import android.net.Uri;
import android.os.Bundle;
import android.os.Environment;
import android.provider.MediaStore;
import android.widget.Button;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import java.io.IOException;
import java.util.Random;
import static android.Manifest.permission.RECORD_AUDIO;
import static android.Manifest.permission.WRITE_EXTERNAL_STORAGE;
public class MainActivity extends AppCompatActivity {
    public static final int RequestPermissionCode = 1;
    private final static int VIDEO_CAPTURE_CODE = 101;
    Button btnRecordVideo, btnPlayVideo, btnRecordAudio, btnStopRecordingAudio,
btnPlayAudio, btnStopPlayingAudio;
    Uri videoUri = null;
    String audioSavePathInDevice = null;
    MediaRecorder audioRecorder;
    MediaPlayer audioPlayer;
    Random random;
    String RandomAudioFileName = "ABCDEFGHIJKLMNOP";
    @SuppressLint("QueryPermissionsNeeded")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btnRecordVideo = findViewById(R.id.recordVideo);
        btnPlayVideo = findViewById(R.id.playVideo);
        btnRecordAudio = findViewById(R.id.recordAudio);
        btnStopRecordingAudio = findViewById(R.id.stopRecordAudio);
        btnPlayAudio = findViewById(R.id.playAudio);
        btnStopPlayingAudio = findViewById(R.id.stopPlayingAudio);
        btnPlayVideo.setEnabled(false);
```

```
        btnStopRecordingAudio.setEnabled(false);
        btnPlayAudio.setEnabled(false);
        random = new Random();
        btnRecordVideo.setOnClickListener(v -> {
            Intent intent = new Intent(MediaStore.ACTION_VIDEO_CAPTURE);
            if (intent.resolveActivity(getPackageManager()) != null) {
                startActivityForResult(intent, VIDEO_CAPTURE_CODE);
            }
        });
        btnPlayVideo.setOnClickListener(v -> {
            if (videoUri != null) {
                Intent intent = new Intent(this, VideoPlayer.class);
                intent.putExtra("videoUri", videoUri.toString());
                startActivity(intent);
            }
        });
        btnRecordAudio.setOnClickListener(v -> {
            if (checkPermission()) {
                audioSavePathInDevice =
Environment.getExternalStorageDirectory().getAbsolutePath() + "/" +
                        createRandomAudioFileName(5) + "AudioRecording.3gp";
                makeAudioRecorder();
                try {
                    audioRecorder.prepare();
                    audioRecorder.start();
                    btnRecordAudio.setEnabled(false);
                    btnStopRecordingAudio.setEnabled(true);
                    Toast.makeText(this, "Recording started...",
Toast.LENGTH_SHORT).show();
                } catch (IllegalStateException | IOException e) {
                    e.printStackTrace();
                }
            } else {
                requestPermission();
            }
        });
        btnStopRecordingAudio.setOnClickListener(v -> {
            audioRecorder.stop();
            btnRecordAudio.setEnabled(true);
            btnStopRecordingAudio.setEnabled(false);
            btnPlayAudio.setEnabled(true);
            btnStopPlayingAudio.setEnabled(false);
            Toast.makeText(this, "Audio Recorded Successfully!!",
Toast.LENGTH_SHORT).show();
        });
        btnPlayAudio.setOnClickListener(v -> {
            btnRecordAudio.setEnabled(false);
            btnStopRecordingAudio.setEnabled(false);
            btnStopPlayingAudio.setEnabled(true);
            audioPlayer = new MediaPlayer();
            try {
                audioPlayer.setDataSource(audioSavePathInDevice);
                audioPlayer.prepare();
            } catch (IOException e) {
                e.printStackTrace();
```

```
            }
            audioPlayer.start();
            Toast.makeText(this, "Playing audio...", Toast.LENGTH_SHORT).show();
        });
        btnStopPlayingAudio.setOnClickListener(v -> {
            btnStopRecordingAudio.setEnabled(false);
            btnRecordAudio.setEnabled(true);
            btnStopPlayingAudio.setEnabled(false);
            btnPlayAudio.setEnabled(true);
            if (audioPlayer != null) {
                audioPlayer.stop();
                audioPlayer.release();
                makeAudioRecorder();
            }
        });
    }
    public void makeAudioRecorder() {
        audioRecorder = new MediaRecorder();
        audioRecorder.setAudioSource(MediaRecorder.AudioSource.MIC);
        audioRecorder.setOutputFormat(MediaRecorder.OutputFormat.THREE_GPP);
        audioRecorder.setAudioEncoder(MediaRecorder.OutputFormat.AMR_NB);
        audioRecorder.setOutputFile(audioSavePathInDevice);
    }
    public String createRandomAudioFileName(int string) {
        StringBuilder stringBuilder = new StringBuilder(string);
        int i = 0;
        while (i < string) {
            stringBuilder.append(RandomAudioFileName.
                    charAt(random.nextInt(RandomAudioFileName.length())));
            i++;
        }
        return stringBuilder.toString();
    }
    @Override
    protected void onActivityResult(int requestCode, int resultCode, @Nullable Intent
data) {
        super.onActivityResult(requestCode, resultCode, data);
        if (requestCode == VIDEO_CAPTURE_CODE && resultCode == RESULT_OK) {
            videoUri = data.getData();
            if (videoUri != null) {
                btnPlayVideo.setEnabled(true);
            }
        }
    }
    private void requestPermission() {
        ActivityCompat.requestPermissions(MainActivity.this, new
                String[]{WRITE_EXTERNAL_STORAGE, RECORD_AUDIO},
RequestPermissionCode);
    }
    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[]
permissions, @NonNull int[] grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);
        if (requestCode == RequestPermissionCode) {
            if (grantResults.length > 0) {
```

```
                boolean storagePermission = grantResults[0] ==
PackageManager.PERMISSION_GRANTED;
                boolean recordPermission = grantResults[1] ==
PackageManager.PERMISSION_GRANTED;
                if (!storagePermission && !recordPermission) {
                    Toast.makeText(MainActivity.this, "Permission Denied",
Toast.LENGTH_LONG).show();
                }
            }
        }
    }
    public boolean checkPermission() {
        int result = ContextCompat.checkSelfPermission(getApplicationContext(),
                WRITE_EXTERNAL_STORAGE);
        int result1 = ContextCompat.checkSelfPermission(getApplicationContext(),
                RECORD_AUDIO);
        return result == PackageManager.PERMISSION_GRANTED &&
                result1 == PackageManager.PERMISSION_GRANTED;
    }
}
```

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:gravity="center"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/recordVideo"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginEnd="50dp"
        android:text="@string/record_video" />
    <Button
        android:id="@+id/playVideo"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="50dp"
        android:text="@string/play_video" />
    <Button
        android:id="@+id/recordAudio"
        android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="30dp"
        android:layout_marginEnd="50dp"
        android:text="@string/record_audio" />
    <Button
        android:id="@+id/stopRecordAudio"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="50dp"
        android:text="@string/stop_recording_audio" />
    <Button
        android:id="@+id/playAudio"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="50dp"
        android:text="@string/play_audio" />
    <Button
        android:id="@+id/stopPlayingAudio"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="50dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="50dp"
        android:text="@string/stop_playing_audio" />
</LinearLayout>
```

AndroidManifest.xml :-

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

    <uses-permission android:name="android.permission.RECORD_AUDIO" />
    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE" />
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.VideoPlayer">
        <activity android:name=".VideoPlayer" />
        <activity android:name=".MainActivity">
            <intent-filter>
```

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

activity_video_player.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:padding="16dp"
    tools:context=".VideoPlayer">
    <VideoView
        android:id="@+id/videoView"
        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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

strings.java:-

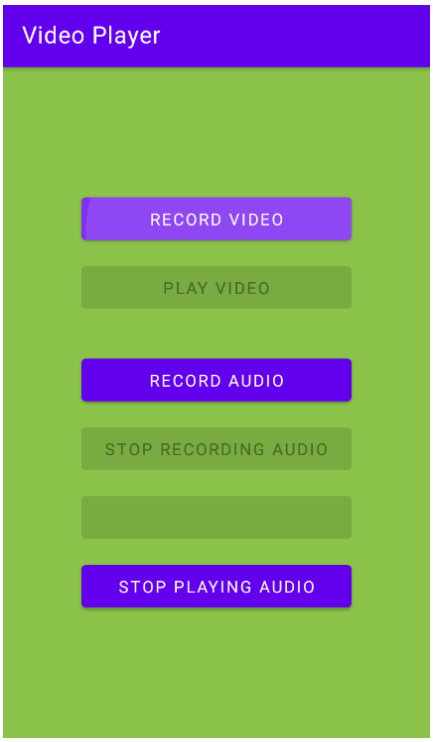
```
<resources>
    <string name="app_name">Video Player</string>
    <string name="play_audio" />
    <string name="record_video">Record Video</string>
    <string name="play_video">Play Video</string>
    <string name="record_audio">Record Audio</string>
    <string name="stop_recording_audio">Stop Recording Audio</string>
    <string name="stop_playing_audio">Stop Playing Audio</string>
</resources>
```

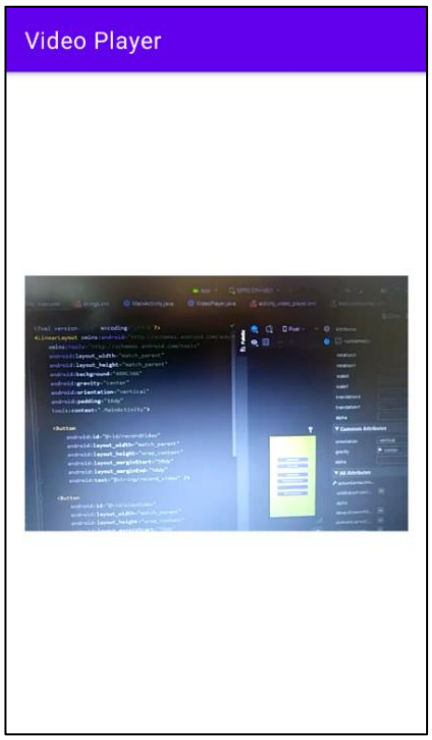
VideoPlayer.java :-

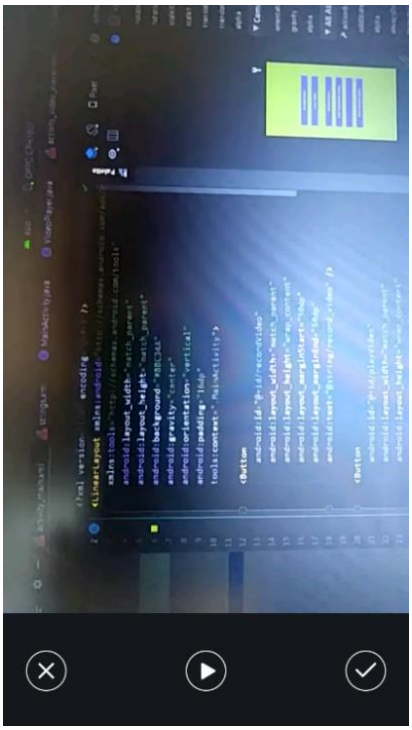
```
package com.example.videoplayer;

import androidx.appcompat.app.AppCompatActivity;
import android.net.Uri;
import android.os.Bundle;
import android.widget.VideoView;
public class VideoPlayer extends AppCompatActivity {
```

```
    VideoView videoView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_video_player);
        videoView = findViewById(R.id.videoView);
        Uri videoUri = Uri.parse(getIntent().getExtras().getString("videoUri"));
        videoView.setVideoURI(videoUri);
        videoView.start();
    }
}
```

OUTPUT –


Video Player
RECORD VIDEO
PLAY VIDEO
RECORD AUDIO
STOP RECORDING AUDIO
STOP PLAYING AUDIO


Video Player



Practical – 10

AIM: Write an android application to insert Customer Details (cID, cName, cOrderID) in SQLite Database in Android.

MainActivity.java:-

```
package com.example.myapplication;

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

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
         DBHelper myDatabse;
         EditText etName,etSname,etMark;
         Button insertdata;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate (savedInstanceState);
        setContentView (R.layout.activity_main);
        myDatabse=new DBHelper (this);

        etName=(EditText)findViewById (R.id.a);
        etSname=(EditText)findViewById (R.id.b);
        etMark=(EditText)findViewById (R.id.ptmark);
        insertdata=(Button)findViewById (R.id.add);
        Add ();
    }
    public void Add(){
        insertdata.setOnClickListener (new View.OnClickListener () {
            @Override
            public void onClick(View view) {
                boolean isInserted= myDatabse.Insert (etName.getText ().toString (),
etSname.getText ().toString (),etMark.getText ().toString ());
                if(isInserted=true)
                    Toast.makeText (MainActivity.this,"data
inserted",Toast.LENGTH_LONG).show ();
                else
                    Toast.makeText (MainActivity.this,"not
inserted",Toast.LENGTH_LONG).show ();
```

```
            }
        });
    }
}
```

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">

    <Button
        android:id="@+id/add"
        android:layout_width="174dp"
        android:layout_height="96dp"
        android:layout_marginBottom="296dp"
        android:text="insert"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent" />

    <EditText
        android:id="@+id/b"
        android:layout_width="139dp"
        android:layout_height="59dp"
        android:layout_marginTop="44dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.742"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/a" />

    <EditText
        android:id="@+id/ptmark"
        android:layout_width="145dp"
        android:layout_height="56dp"
        android:layout_marginTop="40dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.728"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/b"
        app:layout_constraintVertical_bias="0.015" />
```

```
    <EditText
        android:id="@+id/a"
        android:layout_width="146dp"
        android:layout_height="59dp"
        android:layout_marginTop="32dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.742"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/tvsname"
        android:layout_width="142dp"
        android:layout_height="60dp"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginTop="44dp"
        android:text="cName"
        android:textColor="#2196F3"
        android:textSize="30sp"
        app:layout_constraintEnd_toStartOf="@+id/b"
        app:layout_constraintHorizontal_bias="0.469"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/tvname" />

    <TextView
        android:id="@+id/tvmark"
        android:layout_width="142dp"
        android:layout_height="48dp"
        android:layout_marginStart="8dp"
        android:layout_marginLeft="8dp"
        android:layout_marginBottom="432dp"
        android:text="cOrderID"
        android:textColor="#CDDC39"
        android:textSize="30sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/ptmark"
        app:layout_constraintHorizontal_bias="0.659"
        app:layout_constraintStart_toStartOf="parent" />

    <TextView
        android:id="@+id/tvname"
        android:layout_width="118dp"
        android:layout_height="57dp"
        android:layout_marginStart="16dp"
        android:layout_marginLeft="16dp"
        android:layout_marginTop="28dp"
        android:rotationX="-12"
        android:shadowColor="#E310DF"
        android:shadowDx="1"
        android:text="cID"
        android:textColor="#FFEB3B"
        android:textSize="30sp"
```

```
        app:layout_constraintEnd_toStartOf="@+id/a"
        app:layout_constraintHorizontal_bias="0.355"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

DBHelper.java:-

```
package com.example.myapplication;
import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {

    public static final String DATABASE_NAME="SAL.db";
    public static final String TABLE_NAME="std.db";
    public static final String  COL_1 = "cID";
    public static final String COL_2 = "cNAME";
    public static final String COL_3 = "cOrderID";

    public DBHelper(@Nullable Context context) {
        super (context, DATABASE_NAME, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL ("CREATE TABLE " + TABLE_NAME + "(ID INTEGER PRIMARY KEY
AUTOINCREMENT,cNAME TEXT, cOrderID TEXT)");

    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL ("DROP TABLE IF EXISTS " + TABLE_NAME);
        onCreate (db);

    }

    public boolean Insert(Number id,String name,String surname,String marks){
        SQLiteDatabase db=this.getWritableDatabase ();
        ContentValues contentValues=new ContentValues ();
        contentValues.put (COL_1,id);
        contentValues.put (COL_2,name);
        contentValues.put (COL_3,surname);
        long results= db.insert (TABLE_NAME,null,contentValues);
        if(results==-1)
```

```
            return false;
        else
            return true;
    }
}
```

OUTPUT –