

EX NO:1,2 Develop an application that uses GUI components, Font,Colours and
DATE: 03.08.2021 use Layout Managers and event listeners.

AIM: To Develop an application that uses GUI components, Font and Colours and
an application that uses Layout Managers and event listeners.

CODE:

Main.dart

```
import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    final appTitle = 'IcyRobins';

    return MaterialApp(
      title: appTitle,
      home: Scaffold(
        backgroundColor: Colors.cyanAccent,
        appBar: AppBar(
          title: Text(appTitle),
        ),
        body: AddTwoNumbers(),
      ),
    );
  }
}

class AddTwoNumbers extends StatefulWidget {
  @override
  _AddTwoNumbersState createState() => _AddTwoNumbersState();
}

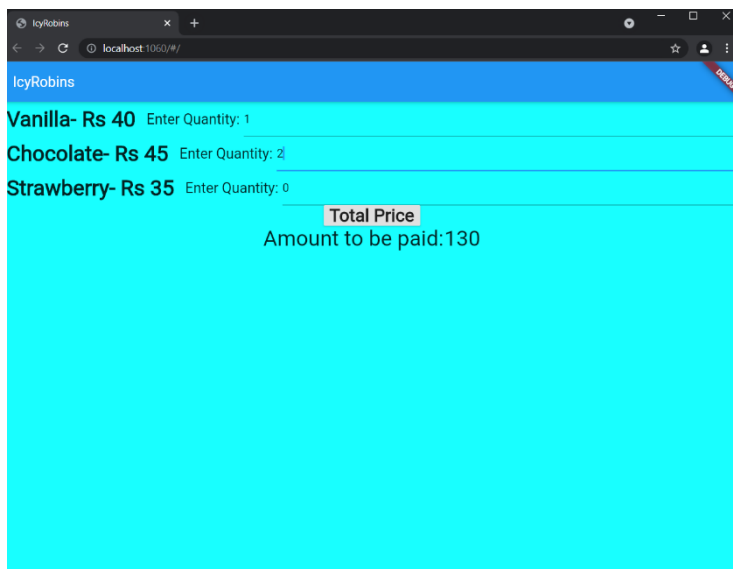
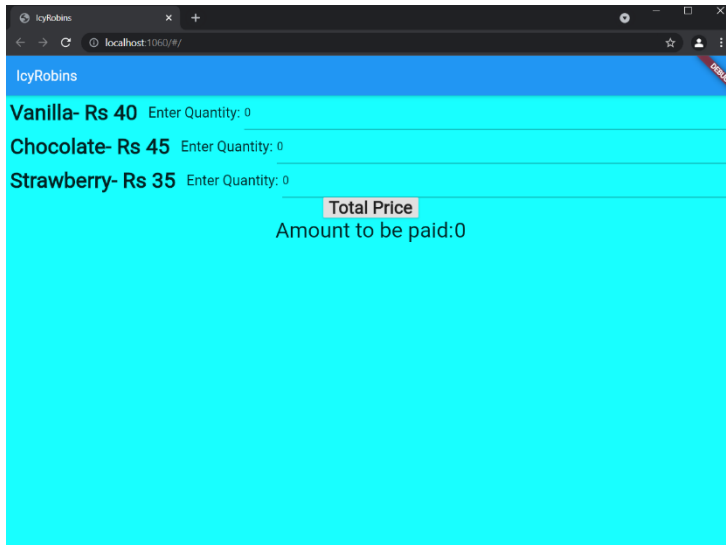
class _AddTwoNumbersState extends State<AddTwoNumbers> {
  TextEditingController num1controller = new TextEditingController()..text="0";
  TextEditingController num2controller = new TextEditingController()..text="0";
  TextEditingController num3controller = new TextEditingController()..text="0";

  String result = "0";
  @override
  Widget build(BuildContext context) {
```

```
return Container(  
  child: Column(  
    children: <Widget>[  
      Row(  
        children: <Widget>[  
  
          Text(" Vanilla- Rs 40 ",style:TextStyle(fontWeight: FontWeight.bold,fontSize:  
30)),  
          Text("Enter Quantity: ",style: TextStyle(fontSize: 20),),  
          new Flexible(  
            child: new TextField(  
              keyboardType: TextInputType.number,  
              controller: num1controller,  
            ),  
          ),  
        ],  
      ),  
      Row(  
        children: <Widget>[  
          Text(" Chocolate- Rs 45 ",style:TextStyle(fontWeight: FontWeight.bold,fontSize:  
30)),  
          Text("Enter Quantity: ",style: TextStyle(fontSize: 20),),  
          new Flexible(  
            child: new TextField(  
              keyboardType: TextInputType.number,  
              controller: num2controller,  
            ),  
          ),  
        ],  
      ),  
      Row(  
        children: <Widget>[  
          Text(" Strawberry- Rs 35 ",style:TextStyle(fontWeight: FontWeight.bold,fontSize:  
30)),  
          Text("Enter Quantity: ",style: TextStyle(fontSize: 20),),  
          new Flexible(  
            child: new TextField(  
              keyboardType: TextInputType.number,  
              controller: num3controller,  
            ),  
          ),  
        ],  
      ),  
  
      Row(  
        mainAxisAlignment: MainAxisAlignment.center,  
        children: <Widget>[
```

```
        RaisedButton(
          child: Text("Total Price",style: TextStyle(fontSize: 25,fontWeight:
FontWeight.bold),),
          onPressed : () {
            setState(() {
              int sum = int.parse(num1controller.text)*40 + int.parse(num2controller.text)*45
+int.parse(num3controller.text)*35;
              result = sum.toString();
            });
          },
        )
      ],
    ),
    Row(
      mainAxisAlignment: MainAxisAlignment.center,
      children: <Widget>[
        Text("Amount to be paid:",
          style: TextStyle(
            fontSize: 30,
          ),),
        Text(result,
          style: TextStyle(
            fontSize: 30,
          ),),
      ],
    ),
  ],
),
],
),
);
}
}
```

OUTPUT:



RESULT:

Thus the application that uses GUI components, Font and Colours and an application that uses Layout Managers and event listeners using flutter was created successfully.

EX NO:03 Develop a Native Calculator Application

DATE: 17.08.2021

AIM: To develop a native calculator application.

CODE:

Main.dart

```
import 'package:flutter/material.dart';
import 'package:math_expressions/math_expressions.dart';

void main(){
  runApp(Calculator());
}

class Calculator extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'Calculator',
      theme: ThemeData(primarySwatch: Colors.blue),
      home: SimpleCalculator(),
    );
  }
}

class SimpleCalculator extends StatefulWidget {
  @override
  _SimpleCalculatorState createState() => _SimpleCalculatorState();
}

class _SimpleCalculatorState extends State<SimpleCalculator> {

  String equation = "0";
  String result = "0";
  String expression = "";
  double equationFontSize = 38.0;
  double resultFontSize = 48.0;

  buttonPressed(String buttonText){
    setState() {
      if(buttonText == "C"){
        equation = "0";
        result = "0";
        equationFontSize = 38.0;
        resultFontSize = 48.0;
      }
    }
  }
}
```

```
else if(buttonText == "□"){
    equationFontSize = 48.0;
    resultFontSize = 38.0;
    equation = equation.substring(0, equation.length - 1);
    if(equation == ""){
        equation = "0";
    }
}

else if(buttonText == "="){
    equationFontSize = 38.0;
    resultFontSize = 48.0;

    expression = equation;
    expression = expression.replaceAll('×', '*');
    expression = expression.replaceAll('÷', '/');

    try{
        Parser p = Parser();
        Expression exp = p.parse(expression);

        ContextModel cm = ContextModel();
        result = '${exp.evaluate(EvaluationType.REAL, cm)}';
    }catch(e){
        result = "Error";
    }
}

else{
    equationFontSize = 48.0;
    resultFontSize = 38.0;
    if(equation == "0"){
        equation = buttonText;
    }else {
        equation = equation + buttonText;
    }
}
});
}

Widget buildButton(String buttonText, double buttonHeight, Color buttonColor){
    return Container(
        height: MediaQuery.of(context).size.height * 0.1 * buttonHeight,
        color: buttonColor,
        child: FlatButton(
```

```
shape: RoundedRectangleBorder(
  borderRadius: BorderRadius.circular(0.0),
  side: BorderSide(
    color: Colors.white,
    width: 1,
    style: BorderStyle.solid
  )
),
padding: EdgeInsets.all(16.0),
onPressed: () => buttonPressed(buttonText),
child: Text(
  buttonText,
  style: TextStyle(
    fontSize: 30.0,
    fontWeight: FontWeight.normal,
    color: Colors.white
  ),
),
);
}
@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(title: Text('Calculator')),
    body: Column(
      children: <Widget>[
        Container(
          alignment: Alignment.centerRight,
          padding: EdgeInsets.fromLTRB(10, 20, 10, 0),
          child: Text(equation, style: TextStyle(fontSize: equationFontSize)),
        ),
        Container(
          alignment: Alignment.centerRight,
          padding: EdgeInsets.fromLTRB(10, 30, 10, 0),
          child: Text(result, style: TextStyle(fontSize: resultFontSize)),
        ),
        Expanded(
          child: Divider(),
        ),
        Row(
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[
            Container(
              width: MediaQuery.of(context).size.width * .75,
              child: Table(
                children: [
```

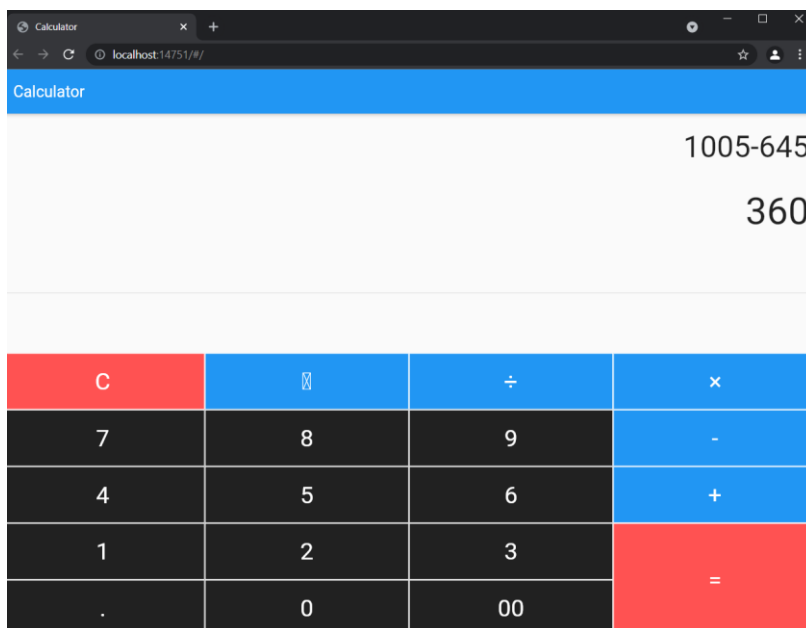
```
TableRow(  
  children: [  
    buildButton("C", 1, Colors.redAccent),  
    buildButton("□", 1, Colors.blue),  
    buildButton("÷", 1, Colors.blue),  
  ]  
)  
  
TableRow(  
  children: [  
    buildButton("7", 1, Colors.black87),  
    buildButton("8", 1, Colors.black87),  
    buildButton("9", 1, Colors.black87),  
  ]  
)  
  
TableRow(  
  children: [  
    buildButton("4", 1, Colors.black87),  
    buildButton("5", 1, Colors.black87),  
    buildButton("6", 1, Colors.black87),  
  ]  
)  
  
TableRow(  
  children: [  
    buildButton("1", 1, Colors.black87),  
    buildButton("2", 1, Colors.black87),  
    buildButton("3", 1, Colors.black87),  
  ]  
)  
TableRow(  
  children: [  
    buildButton(".", 1, Colors.black87),  
    buildButton("0", 1, Colors.black87),  
    buildButton("00", 1, Colors.black87),  
  ]  
)  
],  
)  
)  
Container(  
  width: MediaQuery.of(context).size.width * 0.25,  
  child: Table(  
    children: [  
      TableRow(  
        children: [  
          buildButton("C", 1, Colors.redAccent),  
          buildButton("□", 1, Colors.blue),  
          buildButton("÷", 1, Colors.blue),  
        ]  
      ),  
      TableRow(  
        children: [  
          buildButton("7", 1, Colors.black87),  
          buildButton("8", 1, Colors.black87),  
          buildButton("9", 1, Colors.black87),  
        ]  
      ),  
      TableRow(  
        children: [  
          buildButton("4", 1, Colors.black87),  
          buildButton("5", 1, Colors.black87),  
          buildButton("6", 1, Colors.black87),  
        ]  
      ),  
      TableRow(  
        children: [  
          buildButton("1", 1, Colors.black87),  
          buildButton("2", 1, Colors.black87),  
          buildButton("3", 1, Colors.black87),  
        ]  
      ),  
      TableRow(  
        children: [  
          buildButton(".", 1, Colors.black87),  
          buildButton("0", 1, Colors.black87),  
          buildButton("00", 1, Colors.black87),  
        ]  
      ),  
    ],  
  ),  
)
```



```
        buildButton("×", 1, Colors.blue),
      ],
    ),
    TableRow(
      children: [
        buildButton("-", 1, Colors.blue),
      ],
    ),
    TableRow(
      children: [
        buildButton("+", 1, Colors.blue),
      ],
    ),

    TableRow(
      children: [
        buildButton("=", 2, Colors.redAccent),
      ],
    ),
  ], ), ) ],
),
],
),
);
}
}
```

OUTPUT:



RESULT:

Thus the native calculator application using flutter has been created successfully.

EX NO:04 Develop an Application that draws basic Graphical Primitives on the

DATE: 24.08.2021 **screen**

AIM: To write an application that draws basic graphical primitives on the screen.

CODE:

Main.dart

```
import 'package:flutter/material.dart';

void main() => runApp(HomePage());

class HomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      theme: ThemeData(
        brightness: Brightness.dark,
        accentColor: Colors.teal,
      ),
      home: Scaffold(
        appBar: AppBar(
          title: Text('Custom Shapes'),
        ),
        body: Padding(
          padding: EdgeInsets.all(8.0),
          child: CustomPaint(
            painter: ShapesPainter(),
            child: Container(
              height: 700,
            ),
          ),
        ),
      ),
    );
  }
}
```

```
class ShapesPainter extends CustomPainter {
  @override
  void paint(Canvas canvas, Size size) {
    final paint = Paint();

    // set the paint color to be white
    paint.color = Colors.greenAccent;
```

```
// Create a rectangle with size and width same as the canvas
var rect = Rect.fromLTWH(0, 0, size.width, size.height);

// draw the rectangle using the paint
canvas.drawRect(rect, paint);

paint.color = Colors.teal;

// create a path
var path = Path();
path.lineTo(0, size.height);
path.lineTo(size.width, 0);
// close the path to form a bounded shape
path.close();

//canvas.drawPath(path, paint);

// set the color property of the paint
paint.color = Colors.teal;

// center of the canvas is (x,y) => (width/2, height/2)
var center = Offset(size.width / 2, size.height / 2);

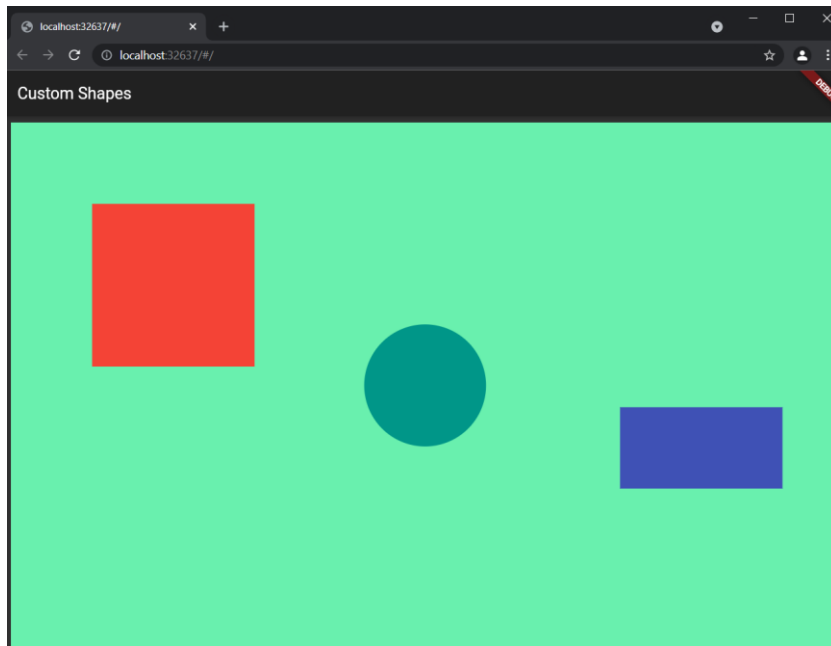
// draw the circle with center having radius 75.0
canvas.drawCircle(center, 75.0, paint);

paint.color = Colors.red;
canvas.drawRect(Offset(100,100) & Size(200,200), paint);
paint.color = Colors.indigo;
canvas.drawRect(Offset(750,350) & Size(200,100), paint);

}

@override
bool shouldRepaint(CustomPainter oldDelegate) => false;
}
```

OUTPUT:



RESULT:

Thus the flutter program to draw the basic primitives has been executed successfully.

EX NO:05 **Develop an application that makes use of database.**

DATE: 31.08.2021

AIM: To develop an application that makes use of database

CODE:

Mainactivity.java

```
package com.example.ex05;

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

public class MainActivity extends Activity implements OnClickListener {
    EditText Rollno, Name, Marks;
    Button Insert, Delete, Update, View, ViewAll;
    SQLiteDatabase db;

    /**
     * Called when the activity is first created.
     */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Rollno = (EditText) findViewById(R.id.Rollno);
        Name = (EditText) findViewById(R.id.Name);
        Marks = (EditText) findViewById(R.id.Marks);
        Insert = (Button) findViewById(R.id.Insert);
        Delete = (Button) findViewById(R.id.Delete);
        Update = (Button) findViewById(R.id.Update);
        View = (Button) findViewById(R.id.View);
        ViewAll = (Button) findViewById(R.id.ViewAll);

        Insert.setOnClickListener(this);
        Delete.setOnClickListener(this);
        Update.setOnClickListener(this);
    }
}
```

```
View.setOnClickListener(this);
ViewAll.setOnClickListener(this);

// Creating database and table
db = openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name
VARCHAR,marks VARCHAR);");
}

public void onClick(View view) {
// Inserting a record to the Student table
if (view == Insert) {
// Checking for empty fields
if (Rollno.getText().toString().trim().length() == 0 ||
    Name.getText().toString().trim().length() == 0 ||
    Marks.getText().toString().trim().length() == 0) {
    showMessage("Error", "Please enter all values");
    return;
}
db.execSQL("INSERT INTO student VALUES('\" + Rollno.getText() + \"',\" +
Name.getText() +
    \"\", \"\" + Marks.getText() + \"');");
showMessage("Success", "Record added");
clearText();
}
// Deleting a record from the Student table
if (view == Delete) {
// Checking for empty roll number
if (Rollno.getText().toString().trim().length() == 0) {
    showMessage("Error", "Please enter Rollno");
    return;
}
Cursor c = db.rawQuery("SELECT * FROM student WHERE rollno=\"\" +
Rollno.getText() + \"\"", null);
if (c.moveToFirst()) {
    db.execSQL("DELETE FROM student WHERE rollno=\"\" + Rollno.getText() +
    \"\"");
    showMessage("Success", "Record Deleted");
} else {
    showMessage("Error", "Invalid Rollno");
}
clearText();
}
// Updating a record in the Student table
if (view == Update) {
// Checking for empty roll number
if (Rollno.getText().toString().trim().length() == 0) {
```

```
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c = db.rawQuery("SELECT * FROM student WHERE rollno='" +
Rollno.getText() + "'", null);
    if (c.moveToFirst()) {
        db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" +
Marks.getText() +
        "' WHERE rollno='" + Rollno.getText() + "'");
        showMessage("Success", "Record Modified");
    } else {
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
// Display a record from the Student table
if (view == View) {
    // Checking for empty roll number
    if (Rollno.getText().toString().trim().length() == 0) {
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c = db.rawQuery("SELECT * FROM student WHERE rollno='" +
Rollno.getText() + "'", null);
    if (c.moveToFirst()) {
        Name.setText(c.getString(1));
        Marks.setText(c.getString(2));
    } else {
        showMessage("Error", "Invalid Rollno");
        clearText();
    }
}
// Displaying all the records
if (view == ViewAll) {
    Cursor c = db.rawQuery("SELECT * FROM student", null);
    if (c.getCount() == 0) {
        showMessage("Error", "No records found");
        return;
    }
    StringBuffer buffer = new StringBuffer();
    while (c.moveToNext()) {
        buffer.append("Rollno: " + c.getString(0) + "\n");
        buffer.append("Name: " + c.getString(1) + "\n");
        buffer.append("Marks: " + c.getString(2) + "\n\n");
    }
    showMessage("Student Details", buffer.toString());
}
```

```
}

public void showMessage(String title, String message) {
    Builder builder = new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}

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

Activity.main.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="#97FAE3">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="95dp"
        android:layout_y="22dp"
        android:text="Student Details"
        android:textColor="#009688"
        android:textSize="30sp"
        android:textStyle="bold" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="110dp"
        android:text="Enter Rollno:"
        android:textColor="#000000"
        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:textColor="#000000"  
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:textColor="#000000"  
    android:textSize="20sp" />
```

```
<EditText  
    android:id="@+id/Marks"  
    android:layout_width="152dp"  
    android:layout_height="wrap_content"  
    android:layout_x="174dp"  
    android:layout_y="198dp"  
    android:ems="10"  
    android:inputType="textPersonName"  
    android:textColor="#000000" />
```

```
<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:textColor="#000000"  
    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:textColor="#000000"  
    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:backgroundTint="#009688"
    android:text="Insert"
    android:textSize="20dp" />
```

```
<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="300dp"
    android:backgroundTint="#009688"
    android:text="Delete"
    android:textSize="20dp" />
```

```
<Button
    android:id="@+id/Update"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="400dp"
    android:backgroundTint="#009688"
    android:text="Update"
    android:textSize="20dp" />
```

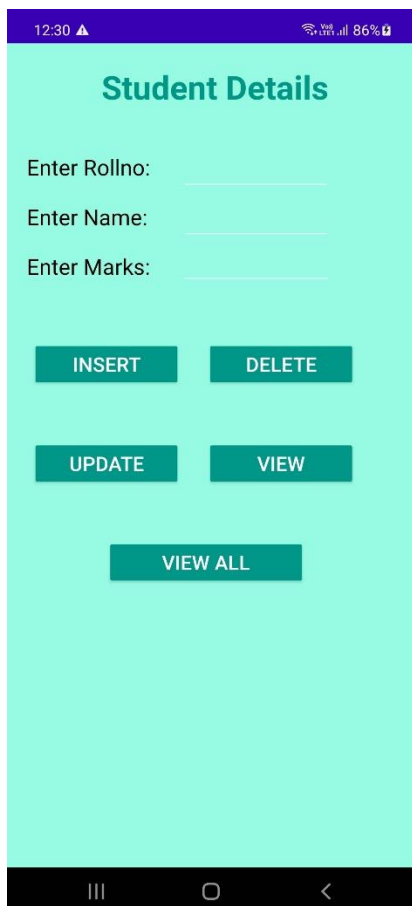
```
<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="400dp"
    android:backgroundTint="#009688"
    android:text="View"
    android:textSize="20dp" />
```

```
<Button
    android:id="@+id/ViewAll"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_x="100dp"
    android:layout_y="500dp"
    android:backgroundTint="#009688"
```

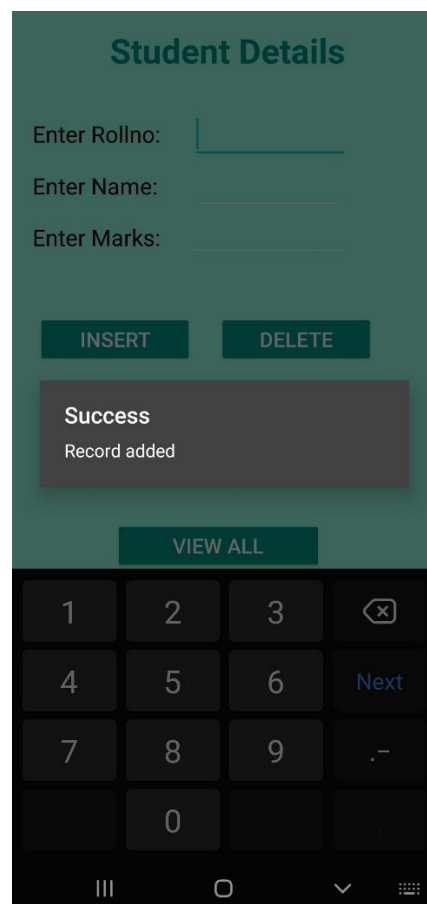
```
android:text="View All"  
android:textSize="20dp" />
```

```
</AbsoluteLayout>
```

OUTPUT:



Insert



ViewAll

Student Details

Enter Rollno:

Enter Name:

Enter Marks:

Student Details
Rollno: 112
Name: Swetha
Marks: 98

1

2

3

< x

4

5

6

Next

7

8

9

.-

0

III

O

∨

View

Student Details

Enter Rollno:

Enter Name:

Enter Marks:

1

2

3

< x

4

5

6

Next

7

8

9

.-

0

III

O

∨

Update

Student Details

Enter Rollno:

Enter Name:

Enter Marks:

Success
Record Modified

1

2

3

< x

4

5

6

Next

7

8

9

.-

0

III

O

∨

Student Details

Enter Rollno:

Enter Name:

Enter Marks:

Student Details
Rollno: 112
Name: Swetha
Marks: 100

1

2

3

< x

4

5

6

Next

7

8

9

.-

0

III

O

∨

Delete

The screenshot shows the 'Student Details' app interface. At the top, there's a title 'Student Details'. Below it are three input fields: 'Enter Rollno:', 'Enter Name:', and 'Enter Marks:'. There are two buttons, 'INSERT' and 'DELETE', below the input fields. A dark grey box with white text displays a 'Success' message: 'Record Deleted'. Below this is a 'VIEW ALL' button. At the bottom is a numeric keypad with digits 1-9, 0, a backspace icon, and a 'Next' button.

The screenshot shows the 'Student Details' app interface. At the top, there's a title 'Student Details'. Below it are three input fields: 'Enter Rollno:', 'Enter Name:', and 'Enter Marks:'. There are two buttons, 'INSERT' and 'DELETE', below the input fields. A dark grey box with white text displays an 'Error' message: 'No records found'. Below this is a 'VIEW ALL' button. At the bottom is a numeric keypad with digits 1-9, 0, a backspace icon, and a 'Next' button.

RESULT:

Thus the application making use of database has been created successfully.

EX NO:06 **Develop an application that makes use of RSS Feed.**

DATE: 01.09.2021

AIM: To develop an application that makes use of RSS Feed.

CODE:

Mainactivity.java

```
package com.example.ex06;

import android.app.ListActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.AsyncTask;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ListView;
import org.xmlpull.v1.XmlPullParser;
import org.xmlpull.v1.XmlPullParserException;
import org.xmlpull.v1.XmlPullParserFactory;
import java.io.IOException;
import java.io.InputStream;
import java.net.MalformedURLException;
import java.net.URL;
import java.util.ArrayList;
import java.util.List;

public class MainActivity extends ListActivity
{
    List headlines;
    List links;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        new MyAsyncTask().execute();
    }

    class MyAsyncTask extends AsyncTask<Object,Void,ArrayAdapter>
    {
        @Override
        protected ArrayAdapter doInBackground(Object[] params)
        {
            headlines = new ArrayList();
```

```
links = new ArrayList();
try
{
    URL url = new URL("https://codingconnect.net/feed");
    XmlPullParserFactory factory = XmlPullParserFactory.newInstance();
    factory.setNamespaceAware(false);
    XmlPullParser xpp = factory.newPullParser();

    // We will get the XML from an input stream
    xpp.setInput(getInputStream(url), "UTF_8");
    boolean insideItem = false;

    // Returns the type of current event: START_TAG, END_TAG, etc..
    int eventType = xpp.getEventType();
    while (eventType != XmlPullParser.END_DOCUMENT)
    {
        if (eventType == XmlPullParser.START_TAG)
        {
            if (xpp.getName().equalsIgnoreCase("item"))
            {
                insideItem = true;
            }
            else if (xpp.getName().equalsIgnoreCase("title"))
            {
                if (insideItem)
                    headlines.add(xpp.nextText()); //extract the headline
            }
            else if (xpp.getName().equalsIgnoreCase("link"))
            {
                if (insideItem)
                    links.add(xpp.nextText()); //extract the link of article
            }
        }
        else if(eventType==XmlPullParser.END_TAG &&
xpp.getName().equalsIgnoreCase("item"))
        {
            insideItem=false;
        }
        eventType = xpp.next(); //move to next element
    }

}
catch (MalformedURLException e)
{
    e.printStackTrace();
}
catch (XmlPullParserException e)
```

```
{
    e.printStackTrace();
}
catch (IOException e)
{
    e.printStackTrace();
}
return null;
}
protected void onPostExecute(ArrayAdapter adapter)
{
    adapter = new ArrayAdapter(MainActivity.this, android.R.layout.simple_list_item_1,
headlines);
    setListAdapter(adapter);
}
}

@Override
protected void onItemClick(ListView l, View v, int position, long id)
{
    Uri uri = Uri.parse((links.get(position)).toString());
    Intent intent = new Intent(Intent.ACTION_VIEW, uri);
    startActivity(intent);
}

public InputStream getInputStream(URL url)
{
    try
    {
        return url.openConnection().getInputStream();
    }
    catch (IOException e)
    {
        return null;
    }
}
}
```

activity_main.xml

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



```
<ListView  
    android:id="@+id/listView"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content" />
```

</LinearLayout>

OUTPUT:

C++ Program to find Prime Number or Not using While Loop

C++ program for Cosine Series

C++ program for Exponential Series

Android Application that implements Multi threading

C++ program for Sine Series

C Program for Selection Sort

C Program to check given String is Pangram or not

C Program to check whether two Strings are Anagram or not

C Program to Find Second Smallest Element in an Array

C Program to Find Smallest Element in an Array

RESULT:

Thus the application that uses RSS feed has been created successfully.

EX NO: 07 Implement an application that implements Multi-threading.

DATE: 06/09/21

AIM:

To Implement an application that implements Multi-threading.

SOURCE CODE:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical" >
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="250dp"
        android:layout_height="250dp"
        android:layout_margin="50dp"
        android:layout_gravity="center" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_gravity="center"
        android:text="Load Image 1" />
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_gravity="center"
```

```
        android:text="Load image 2" />
</LinearLayout>
```

MainActivity.java

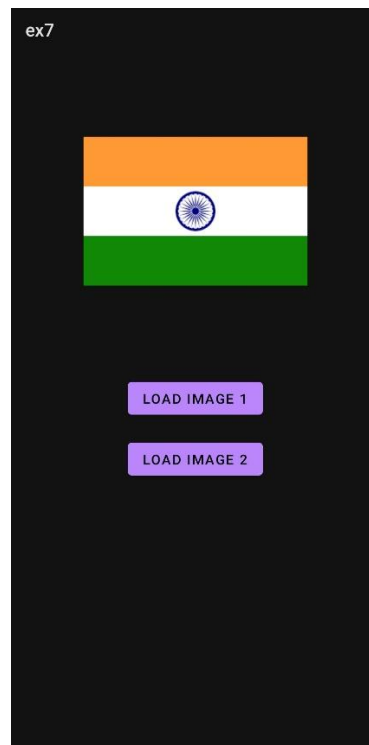
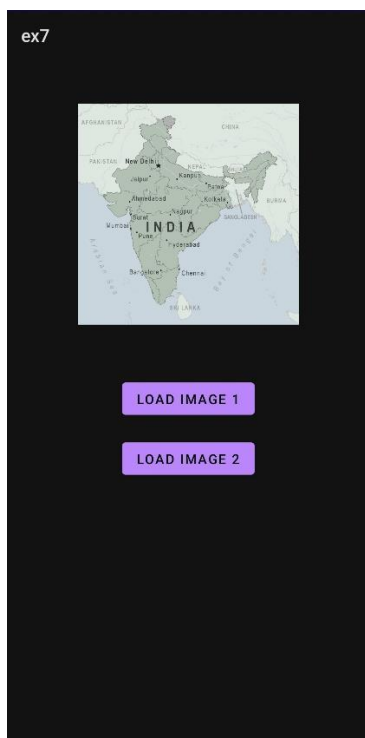
```
package com.example.ex7;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity
{
    ImageView img;
    Button bt1, bt2;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        bt1 = (Button)findViewById(R.id.button);
        bt2 = (Button)findViewById(R.id.button2);
        img = (ImageView)findViewById(R.id.imageView);

        bt1.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                new Thread(new Runnable()
                {
                    @Override
                    public void run()
                    {
                        img.post(new Runnable()
                        {
                            @Override
                            public void run()
                            {
                                img.setImageResource(R.drawable.india1);
                            }
                        });
                    }
                }).start();
            }
        });
    }
}
```

```
bt2.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        new Thread(new Runnable()
        {
            @Override
            public void run()
            {
                img.post(new Runnable()
                {
                    @Override
                    public void run()
                    {
                        img.setImageResource(R.drawable.india2);
                    }
                });
            }
        }).start();
    }
});
}}
```

OUTPUT:



RESULT:

Thus an application that implements Multi-threading has been developed and executed.

EX NO: 08 Develop a native application that uses GPS location information

DATE: 13/09/21

AIM:

To develop a native application that uses GPS location information.

SOURCE CODE:

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">

<LinearLayout
    android:id="@+id/linearLayout"
    android:layout_width="0dp"
    android:layout_height="0dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="1dp"
    android:layout_marginEnd="1dp"
    android:layout_marginRight="1dp"
    android:layout_marginBottom="1dp"
    android:orientation="vertical"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="30dp"
        android:text="Latitude" />

    <TextView
        android:id="@+id/txtlat"
        android:layout_width="match_parent"
        android:layout_height="35dp"
        android:text="" />

</LinearLayout>
</ConstraintLayout>
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="35dp"
    android:text="Longitude" />

<TextView
    android:id="@+id/txtlong"
    android:layout_width="match_parent"
    android:layout_height="35dp"
    android:text="" />
</LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java:

```
package com.example.gps;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.content.ContextCompat;
import android.Manifest;
import android.content.Context;
import android.content.pm.PackageManager;
import android.location.Criteria;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Build;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity implements LocationListener {
    LocationManager lmanager;
    String provider;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        if (Build.VERSION.SDK_INT >= 23) {
            if (ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED ||
                ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {
```

```
        requestPermissions(new
String[]{Manifest.permission.ACCESS_COARSE_LOCATION,
Manifest.permission.ACCESS_FINE_LOCATION}, 0);
    }
    else init();

    } else {
        init();
    }
}

private void init() {
    Imanager= (LocationManager)getSystemService(Context.LOCATION_SERVICE);
    Criteria criteria=new Criteria();
    provider= Imanager.getBestProvider(criteria,false);

    if (ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION)!=
PackageManager.PERMISSION_GRANTED ||
        ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION)!=
PackageManager.PERMISSION_GRANTED)
        return;

    if(provider!=null && !provider.equals("")){
        Location location= Imanager.getLastKnownLocation(provider);
        Imanager.requestLocationUpdates(provider, 100, 1, this);
        if(location!=null){
            onLocationChanged(location);
        }
        else{
            Toast.makeText(getBaseContext(), "Location not available!!",
Toast.LENGTH_LONG).show();
        }
    }
    else{
        Toast.makeText(getBaseContext(), "No Provider found!!",
Toast.LENGTH_LONG).show();
    }
}

@Override
public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions,
@NonNull int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);
    if (requestCode == 0 && grantResults.length == 2) {
        init();
    }
}
```

```
    }  
    else Toast.makeText(getBaseContext(), "Required permissions not granted!",  
Toast.LENGTH_SHORT).show();  
    }  
  
    @Override  
    public void onLocationChanged(@NonNull Location location) {  
        TextView T1= (TextView)findViewById(R.id.txtlat);  
        TextView T2= (TextView)findViewById(R.id.txtlong);  
  
        T1.setText(""+ location.getLatitude());  
        T2.setText(""+ location.getLongitude());  
  
    }  
  
    @Override  
    public void onStatusChanged(String provider, int status, Bundle extras) {  
  
    }  
  
    @Override  
    public void onProviderEnabled(@NonNull String provider) {  
    }  
    @Override  
    public void onProviderDisabled(@NonNull String provider) {  
  
    }  
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
    package="com.example.gps">  
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>  
    <uses-permission  
android:name="android.permission.ACCESS_COARSE_LOCATION"/>  
    <uses-permission android:name="android.permission.INTERNET"/>  
  
    <application  
        android:allowBackup="true"  
        android:icon="@mipmap/ic_launcher"  
        android:label="@string/app_name"  
        android:roundIcon="@mipmap/ic_launcher_round"  
        android:supportRtl="true"
```

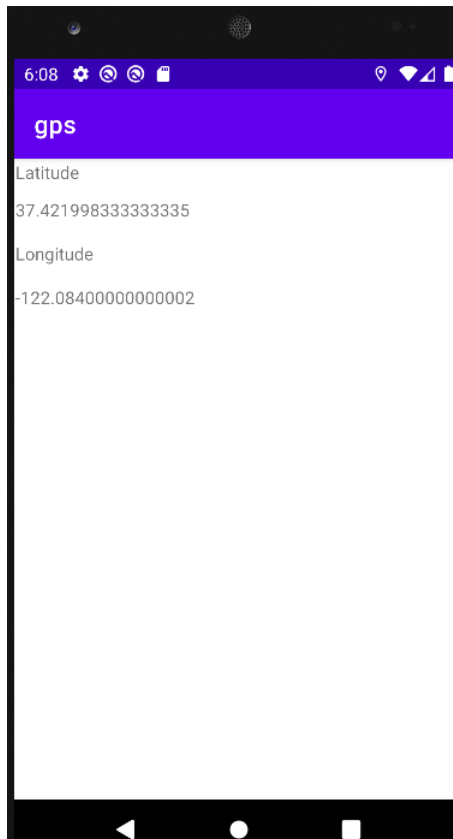


```
        android:theme="@style/Theme.Gps">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

OUTPUT:



RESULT:

Thus a native application that uses GPS location information has been developed and executed.

EX NO: 09 Develop a Android Application that writes data to the SD Card.

DATE: 20/09/21

AIM:

To develop a Android Application that writes data to the SD Card.

SOURCE CODE:

MainActivity.java:

```
package com.example.sdcard;
import android.content.Context;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;
public class MainActivity extends AppCompatActivity {
    EditText editTextFileName,editTextData,e1;
    Button saveButton,readButton;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextFileName=findViewById(R.id.editText1);
        editTextData=findViewById(R.id.editText2);
        saveButton=findViewById(R.id.button1);
        readButton=findViewById(R.id.button2);
        e1 = findViewById(R.id.editText4);

        //Performing Action on Read Button
        saveButton.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View arg0) {
                String filename=editTextFileName.getText().toString();
```

```
String data=editTextData.getText().toString();
FileOutputStream fos;
try {
    fos = openFileOutput(filename, Context.MODE_APPEND);
//default mode is PRIVATE, can be APPEND etc.
    fos.write(data.getBytes());
    fos.close();
    Toast.makeText(getApplicationContext(),filename + " saved",
        Toast.LENGTH_LONG).show();
} catch (FileNotFoundException e) {e.printStackTrace();}
catch (IOException e) {e.printStackTrace();}
} });
//Performing Action on Read Button
readButton.setOnClickListener(new View.OnClickListener(){
@Override
public void onClick(View arg0) {
    String filename=editTextFileName.getText().toString();
    StringBuffer stringBuffer = new StringBuffer();
    try {
//Attaching BufferedReader to the FileInputStream by the help of InputStreamReader
        BufferedReader inputReader = new BufferedReader(new InputStreamReader(
            openFileInput(filename)));
        String inputString;
//Reading data line by line and storing it into the stringbuffer
        while ((inputString = inputReader.readLine()) != null) {
            stringBuffer.append(inputString + "\n");
        }
    } catch (IOException e) {
        e.printStackTrace();
    }

    Toast.makeText(getApplicationContext(),stringBuffer.toString(),Toast.LENGTH_LONG).show();
    e1.setText(stringBuffer.toString().trim());

}
}
); }
}
```

Activity_main.xml:

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

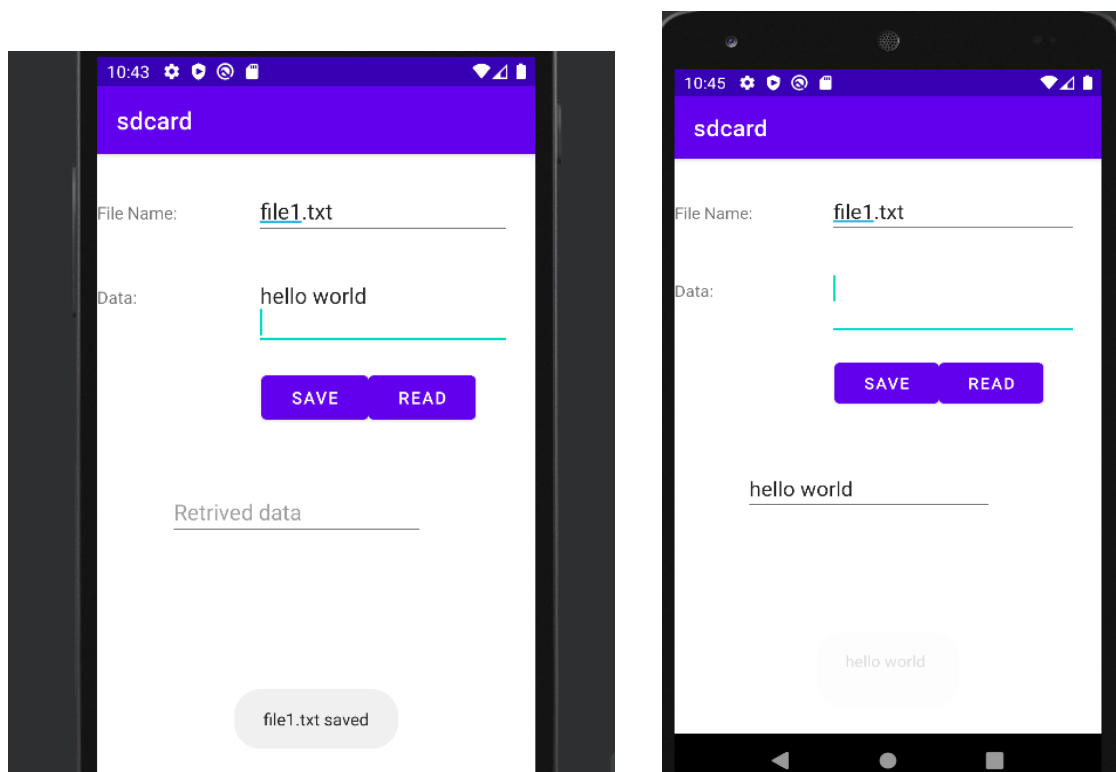
```
android:layout_height="match_parent"
tools:context=".MainActivity">
<EditText
    android:id="@+id/editText1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentRight="true"
    android:layout_alignParentTop="true"
    android:layout_marginRight="20dp"
    android:layout_marginTop="24dp"
    android:ems="10" >
    <requestFocus />
</EditText>
<EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignRight="@+id/editText1"
    android:layout_below="@+id/editText1"
    android:layout_marginTop="24dp"
    android:ems="10" />
<TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/editText1"
    android:layout_alignBottom="@+id/editText1"
    android:layout_alignParentLeft="true"
    android:text="File Name:" />
<TextView
    android:id="@+id/textView2"
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/editText2"
        android:layout_alignBottom="@+id/editText2"
        android:layout_alignParentLeft="true"
        android:text="Data:" />
<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/editText2"
    android:layout_below="@+id/editText2"
    android:layout_marginLeft="5dp"
    android:layout_marginTop="16dp"
    android:text="save" />
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/button1"
    android:layout_alignBottom="@+id/button1"
    android:layout_toRightOf="@+id/button1"
    android:text="read" />
<EditText
    android:id="@+id/editText4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Retrived data"

    android:layout_alignParentTop="true"
    android:layout_alignParentRight="true"
```

```
android:layout_marginTop="271dp"  
android:layout_marginRight="91dp"  
android:ems="10">  
<requestFocus />  
</EditText>  
</RelativeLayout>
```

OUTPUT:



RESULT:

Thus Android Application that writes data to the SD Card is developed and executed successfully.

EX NO: 10 Implement an application that creates an alert upon receiving a message.

DATE: 20/09/21

AIM:

To Implement an application that creates an alert upon receiving a message.

SOURCE CODE:

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_margin="10dp"
    android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Message"
        android:textSize="30sp" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
        android:textSize="30sp" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:layout_gravity="center"
        android:text="Notify"
        android:textSize="30sp"/>
</LinearLayout>
```

MainActivity.java:

```
package com.example.ex10;

import android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
```

```
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity
{
    Button notify;
    EditText e;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        notify= (Button) findViewById(R.id.button);
        e= (EditText) findViewById(R.id.editText);

        notify.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v)
            {
                Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                PendingIntent pending = PendingIntent.getActivity(MainActivity.this, 0, intent, 0);
                Notification noti = new
                Notification.Builder(MainActivity.this).setContentTitle("New
                Message").setContentText(e.getText().toString()).setSmallIcon(R.mipmap.ic_launcher).setC
                ontentIntent(pending).build();
                NotificationManager manager = (NotificationManager)
                getSystemService(NOTIFICATION_SERVICE);
                noti.flags |= Notification.FLAG_AUTO_CANCEL;
                manager.notify(1, noti);
            }
        });
    }
}
```

SecondActivity.java:

```
package com.example.ex10;
import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;
public class SecondActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
    }
}
```

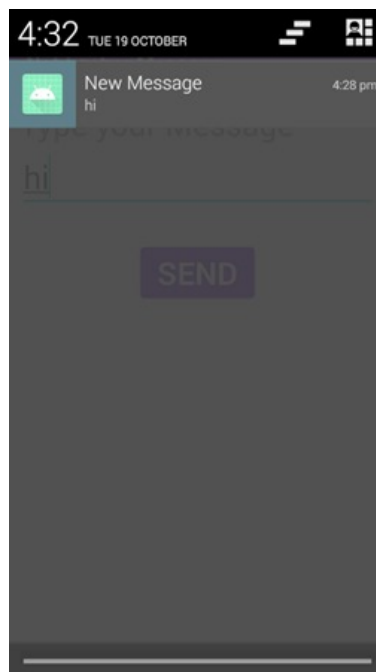
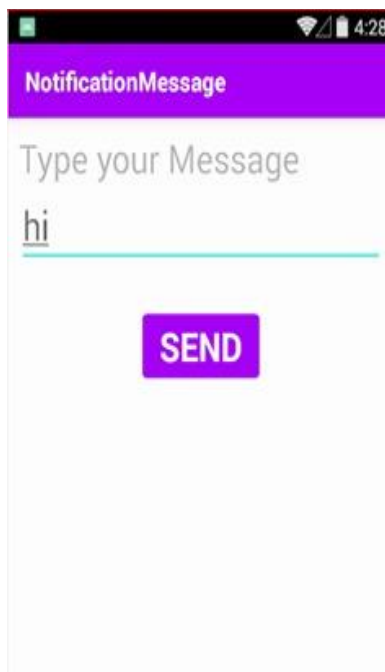


```
}  
}
```

activity_second.java:

```
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:layout_margin="10dp"  
    android:orientation="vertical">  
  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="hi"  
        android:textSize="30sp" />  
</LinearLayout>
```

OUTPUT:



RESULT:

Thus an application that creates an alert upon receiving a message has been developed and executed successfully.

EX NO: 11 Write a mobile application that creates an alarm clock.

DATE: 04/10/21

AIM:

To Implement a mobile application that creates an alarm clock.

SOURCE CODE:

AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.ex11">

    <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.Ex11">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Activity_main:

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

    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"  
        android:layout_gravity="center" />
```

```
<ToggleButton  
    android:id="@+id/toggleButton"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:layout_margin="20dp"  
    android:checked="false"  
    android:onClick="OnToggleClicked" />
```

```
</LinearLayout>
```

MainActivity.java:

```
package com.example.ex11;
```

```
import android.app.AlarmManager;  
import android.app.PendingIntent;  
import android.content.Intent;  
import android.os.Bundle;
```

```
import android.view.View;  
import android.widget.TimePicker;  
import android.widget.Toast;  
import android.widget.ToggleButton;
```

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

```
import java.util.Calendar;
```

```
public class MainActivity extends AppCompatActivity
```

```
{  
    TimePicker alarmTimePicker;  
    PendingIntent pendingIntent;  
    AlarmManager alarmManager;  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState)  
    {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        alarmTimePicker = (TimePicker) findViewById(R.id.timePicker);  
        alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);  
    }  
}
```

```
public void OnToggleClicked(View view)
{
    long time;
    if (((ToggleButton) view).isChecked())
    {
        Toast.makeText(MainActivity.this, "ALARM ON", Toast.LENGTH_SHORT).show();
        Calendar calendar = Calendar.getInstance();
        calendar.set(Calendar.HOUR_OF_DAY, alarmTimePicker.getCurrentHour());
        calendar.set(Calendar.MINUTE, alarmTimePicker.getCurrentMinute());
        Intent intent = new Intent(this, AlarmReceiver.class);
        pendingIntent = PendingIntent.getBroadcast(this, 0, intent, 0);

        time=(calendar.getTimeInMillis()-(calendar.getTimeInMillis()%60000));
        if(System.currentTimeMillis()>time)
        {
            if (calendar.AM_PM == 0)
                time = time + (1000*60*60*12);
            else
                time = time + (1000*60*60*24);
        }
        alarmManager.setRepeating(AlarmManager.RTC_WAKEUP, time, 10000,
pendingIntent);
    }
    else
    {
        alarmManager.cancel(pendingIntent);
        Toast.makeText(MainActivity.this, "ALARM OFF",
Toast.LENGTH_SHORT).show();
    }
}
}
```

AlarmReceiver.java

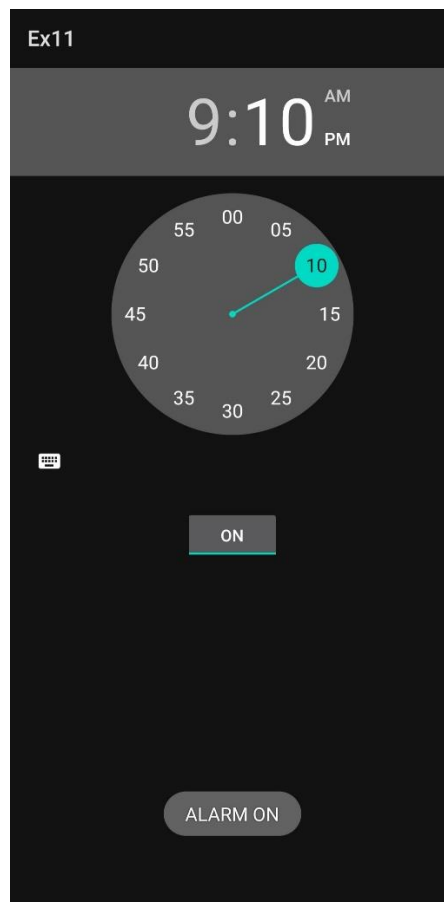
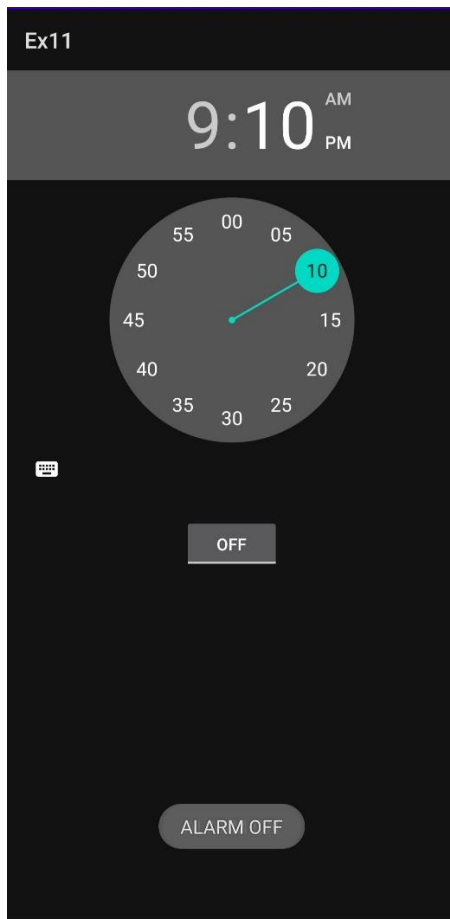
```
package com.example.ex11;

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.widget.Toast;

public class AlarmReceiver extends BroadcastReceiver
{
    @Override
    public void onReceive(Context context, Intent intent)
```

```
{  
    Toast.makeText(context, "Alarm! Wake up! Wake up!",  
Toast.LENGTH_LONG).show();  
    Uri alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);  
    if (alarmUri == null)  
    {  
        alarmUri =  
RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION);  
    }  
    Ringtone ringtone = RingtoneManager.getRingtone(context, alarmUri);  
    ringtone.play();  
}  
}
```

OUTPUT:



RESULT:

Thus an application that creates an alarm clock has been developed and executed successfully.