P24CS1P2

MOBILE APPLICATION DEVELOPMENT LAB

Lab Record Notebook

Roll No.	
Name	
Class	

DEPARTMENT OF COMPUTER SCIENCE (SF I)

BISHOP HEBER COLLEGE (AUTONOMOUS)

TIRUCHIRAPPALLI - 620 017

NOVEMBER 2024

P24CS1P2 Mobile Application Development Lab

Record Notebook

Roll No	
Name	
Class	

Department of Computer Science (SF 1)

Bishop Heber College (Autonomous)

Tiruchirappalli 620017, INDIA

November 2024

Department of Computer Science (SF I)

Bishop Heber College (Autonomous),

Tiruchirappalli – 620017

BONAFIDE CERTIFICATE

Name: _____

Reg. No:_____ **Class:**_____

Course Title _____

Course Code _____

Certified that this is the bonafide record of work done by me during **Odd** Semester of **2024-2025** and submitted for the Practical Examination on

_____

Staff In-Charge **Head of the Department**

Examiners

1._____

2._____

Preface

This laboratory manual is written to accompany the lab course titled, *P24CS1P2 Mobile Application Development Lab*. The aim of this laboratory manual is to help students to enhance the understanding of concepts presented in class and to solve problems outlined in the syllabus of a lab course.

The lab exercises have been grouped into 10 weeks of activity for a semester. The weekly lab sheets include: input, output, source code and extra credit activities. Students using these lab sheets should note the following:

1. Fill out your roll no and name in all required places.

2. Read carefully all details of an exercise of a week.

3. Understand the source code which may be a complete code or just a code snippet.

4. The required updates would have been included as comments inside the source code. You need to update them so that your code is ready for execution.

5. Once your code is executable, run your code with the test case inputs and get the results. Verify your obtained output against the expected output.

6. Now, carefully read all extra credit activities, revise your code accordingly, rerun your source code and obtain new outputs.

7. Upon solving all exercises including extra credit activities, approach your lab instructor, demonstrate your experiments and get your grades for the lab.

Final note, attend your weekly lab session with your lab manual without fail. Also, it is your responsibility to keep your lab manual safe as it records the grade you received every week. Comments about the laboratory exercises presented in this Lab manual are welcomed and encouraged. We hope that you will overlook any misspellings, omissions, errors and inconsistencies and report such issues to us. Happy coding!

B. Karthikeyan

Grade Sheet

Roll No		Name	
Year		Semester	
Instructor Name			

Lab	Date	Activity	Grading Details	Signature
1		Develop a native calculator mobile app for arithmetic operations		
2		Develop an application that makes use of student database for end semester mark list		
3		Design a mobile app for hotel menu card using list view activity		
4		Develop a mobile app for expense tracker monitoring system of monthly budget		
5		Implement a mobile app for digital diary for creating alert message for our day to day activity		
6		Develop a mobile app for bus ticket reservation system		
7		Develop an application that draws basic graphical primitives (Line, Circle, Rectangle, ellipse) on the screen		
8		Implement an application to change the back ground activity using multi-threading		
9		Develop an application that writes data to the SD card		
10		Design a mobile app for marriage Invitation that uses GUI components, Font and colors		

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #1 Laboratory: Native calculator mobile app for arithmetic operations

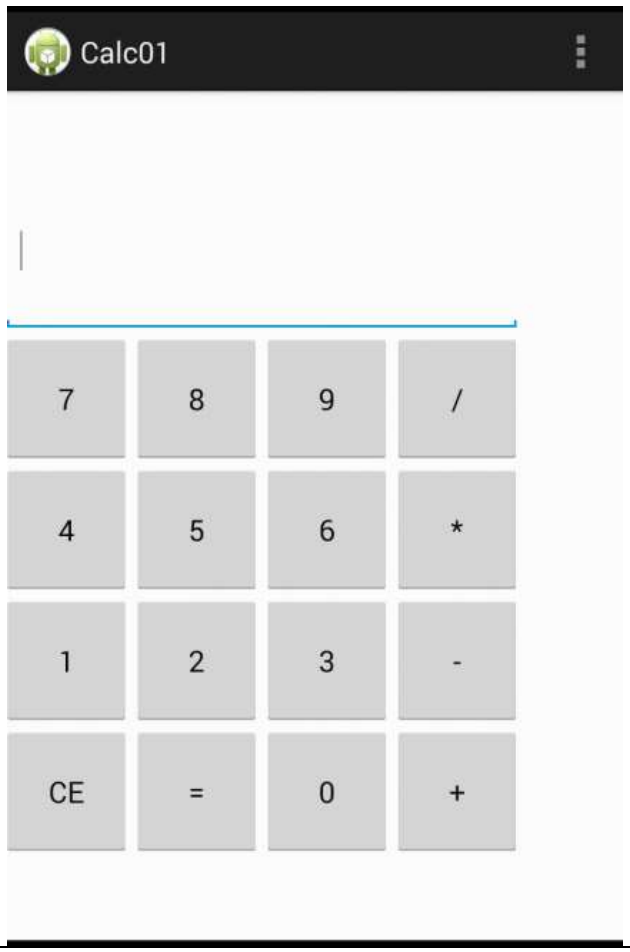
Exercise 1: Develop a mobile application for native calculator that has to do the basic arithmetic operations like addition, Subtraction, etc…

Input	Basic arithmetic operation
Output	Arithmetic operation's result.
Process	Look like normal calculator enter the number and operator then show the result.

Test cases	Input	Expected Output	Obtained Output
1	4+4.2	8.2	
2	8-4	4	
3	3*4	12	
4	12+4-3	13	

Source Code

Screen Layout



Activity_main.XML

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical" >
    <TextView
        android:id="@+id/textView1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text=""
        android:textAppearance="?android:attr/textAppearanceMedium" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text=""
        android:textAppearance="?android:attr/textAppearanceMedium" />
    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >
        <TableRow
            android:id="@+id/tableRow1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
           <EditText
                android:id="@+id/editText1"
                android:layout_width="320dp"
                android:layout_height="100dp"
                android:ems="10" >
                <requestFocus />
            </EditText>
        </TableRow>
        <TableRow
            android:id="@+id/tableRow2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
            <GridLayout
                android:layout_width="wrap_content"
                android:layout_height="wrap_content">
                <Button
                    android:id="@+id/button1"
                    android:width="80dp"
                    android:height="80dp"
                    android:layout_gravity="left"
                    android:onClick="btnSeven"
                    android:text="7" />
                <Button
                    android:id="@+id/button2"
                    android:width="80dp"
                    android:height="80dp"
                    android:layout_gravity="left"
```

```
                    android:onClick="btnEight"
                    android:text="8" />
                <Button
                    android:id="@+id/button3"
                    android:width="80dp"
                    android:height="80dp"
                    android:layout_gravity="left"
                    android:onClick="btnNine"
                    android:text="9" />
                <Button
                    android:id="@+id/button4"
                    android:width="80dp"
                    android:height="80dp"
                    android:layout_gravity="left|top"
                    android:onClick="btnDiv"
                    android:text="/" />
            </GridLayout>
        </TableRow>
        .
        .
        .
        .
        .
    </TableLayout>
</LinearLayout>
```

MainActivity.java

```
public class MainActivity extends Activity {
       EditText A;
       TextView B,C;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        A=(EditText)findViewById(R.id.editText1);
        B=(TextView)findViewById(R.id.textView1);
        C=(TextView)findViewById(R.id.textView2);

       Button butZero=(Button)findViewById(R.id.button51);
        butZero.setOnClickListener(new View.OnClickListener() {

                    @Override
                    public void onClick(View v) {

                           if(A.getText().toString()== null)
                           {
                                  A.setText('0');
                           }
                           else
                           {
                                  A.setText(A.getText().toString()+'0');
                           }

                    }
             });
             .
             .
             .
             .
             .

       Button butNine=(Button)findViewById(R.id.button3);
        butNine.setOnClickListener(new View.OnClickListener() {

                    @Override
                    public void onClick(View v) {

                           if(A.getText().toString()== null)
                           {
                                  A.setText('9');
                           }
                           else
                           {
```

```
                                A.setText(A.getText().toString()+'9');
                        }

                }
                        });
        Button butAdd=(Button)findViewById(R.id.button4);
          butAdd.setOnClickListener(new View.OnClickListener() {

                @Override
                public void onClick(View v) {

                try{
                        double AA=Double.parseDouble(A.getText().toString());
                        double BB=Double.parseDouble(B.getText().toString());
                        AA=AA+BB;
                        B.setText(Double.toString(AA));
                        C.setText("+");
                        A.setText("0");
                }catch(NumberFormatException ex){
                B.setText(A.getText().toString());
                C.setText("+");
                A.setText("0");
                }
        }
        });
        .
        .
        .
        .
        Button butEqu=(Button)findViewById(R.id.button14);
          butEqu.setOnClickListener(new View.OnClickListener() {

                @Override
                public void onClick(View v) {

                double AA=Double.parseDouble(A.getText().toString());
                double BB=Double.parseDouble(B.getText().toString());
                char CC=C.getText().charAt(0);
                double val=0;
                if(CC=='+'){
                        val=AA+BB;
                }
                else if(CC=='-'){
                        val=BB-AA;
                }
                else if(CC=='*'){
                        val=BB*AA;
                }
                else if(CC=='/'){
                        val=BB/AA;
                }
                else if(CC=='0'){
                        val=AA;
                }
```

```
                    A.setText(Double.toString(val));
                    B.setText("0");
                    C.setText("0");
                } }); }
```

Extra Credit

This native calculator is working properly with whole numbers and decimal numbers positive and negative numbers

This app will work properly in the Test Cases from 1 to 3. It will not work and produce error in the Test Case 4.

By the use of this coding can do the following single operation

12+12=24 , 33/3=11, 12*3=36, 10-5=5,
12.2*2=24.4

The following operations cannot do by the use of this application

12+1+5+/8=2

I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #1 Laboratory: Native Calculator Mobile App for Arithmetic Operations

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #2 Laboratory: Students Semester Mark List

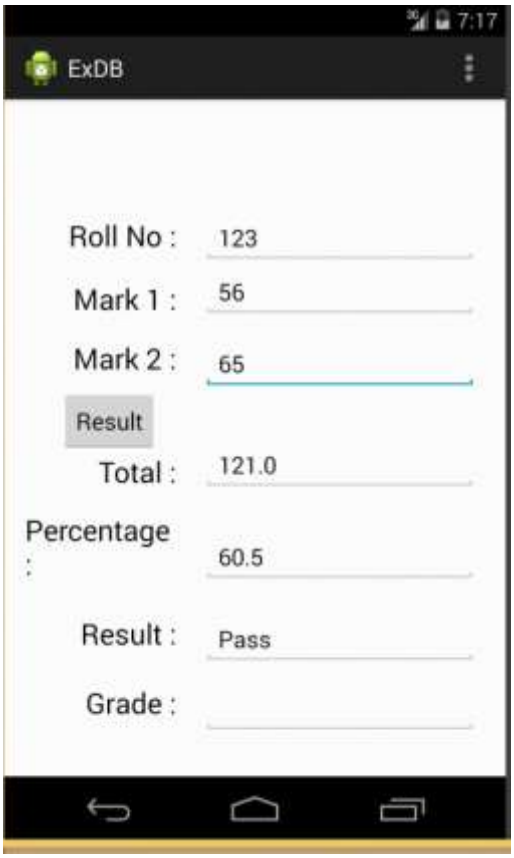
Exercise 2: Develop a mobile application for student database for end semester mark list.

Input	Student end semester marks
Output	Total, Percentage, result and grade.
Process	Enter end semester mark and click the result button show total, percentage, result and grade.

Test cases	**Input**	**Expected Output**	**Obtained Output**
1	Mark 1 = 60 Mark 2 = 40	Total =100.0 Percentage=50 .0 Result = Pass	
2	Mark 1 = 39 Mark 2 = 65	Total =104.0 Percentage=52 .0 Result = Fail	

Source Code

Screen Layout



Activity_main.XML

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context=".MainActivity" >

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginLeft="27dp"
        android:text="Large Text"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView1"
        android:layout_below="@+id/textView1"
        android:layout_marginTop="18dp"
        android:text="Roll No :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/textView2"
        android:layout_alignBottom="@+id/textView2"
        android:layout_marginLeft="20dp"
        android:layout_toRightOf="@+id/textView2"
        android:ems="10" >

        <requestFocus />
    </EditText>

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView2"
        android:layout_below="@+id/editText1"
        android:layout_marginTop="19dp"
        android:text="Mark 1 :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView3"
        android:layout_alignLeft="@+id/editText1"
        android:ems="10" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView3"
        android:layout_marginTop="16dp"
        android:layout_toLeftOf="@+id/editText1"
        android:text="Mark 2 :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <EditText
        android:id="@+id/editText3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/editText2"
        android:layout_alignTop="@+id/textView4"
        android:ems="10" />

    <EditText
        android:id="@+id/editText4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView5"
        android:layout_alignLeft="@+id/editText3"
        android:ems="10" />

    <EditText
        android:id="@+id/editText5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView6"
        android:layout_alignLeft="@+id/editText4"
        android:ems="10" />

    <TextView
        android:id="@+id/textView5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView4"
        android:layout_below="@+id/button1"
        android:text="Total :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/textView1"
        android:layout_below="@+id/editText3"
        android:onClick="btnResult"
        android:text="Result" />
```

```
    <TextView
        android:id="@+id/textView6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView5"
        android:layout_below="@+id/textView5"
        android:layout_marginTop="15dp"
        android:text="Percentage :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <TextView
        android:id="@+id/textView7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView6"
        android:layout_below="@+id/textView6"
        android:layout_marginTop="24dp"
        android:text="Result :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <EditText
        android:id="@+id/editText6"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/editText5"
        android:layout_alignTop="@+id/textView7"
        android:ems="10" />

    <TextView
        android:id="@+id/textView8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView7"
        android:layout_below="@+id/editText6"
        android:layout_marginTop="14dp"
        android:text="Grade :"
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <EditText
        android:id="@+id/editText7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/editText6"
        android:layout_alignTop="@+id/textView8"
        android:ems="10" />

</RelativeLayout>
```

MainActivity.java

```
package com.example.exdb;
```

```
import android.os.Bundle;
import android.R.string;
import android.app.Activity;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.view.Menu;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends Activity {

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

        SQLiteDatabase db = openOrCreateDatabase("Ex.db",MODE_PRIVATE,
null);

        TextView tv=(TextView)findViewById(R.id.textView1);

        db.execSQL("create table if not exists exTable(name text,age
text)");
        db.execSQL("insert into exTable values('example','34')");

        Cursor cu=db.rawQuery("select * from exTable", null);
        cu.moveToFirst();

        String na=cu.getString(0);
        String ag=cu.getString(1);

        tv.setText(na+"\n"+ag);

    }

    public void btnResult(View v){
      SQLiteDatabase db = openOrCreateDatabase("StuMark.db",MODE_PRIVATE,
null);
       EditText rollno= (EditText)findViewById(R.id.editText1);
         EditText M1= (EditText)findViewById(R.id.editText2);
         EditText M2= (EditText)findViewById(R.id.editText3);
         EditText total= (EditText)findViewById(R.id.editText4);
         EditText per= (EditText)findViewById(R.id.editText5);
         EditText result= (EditText)findViewById(R.id.editText6);
         EditText grade= (EditText)findViewById(R.id.editText7);

         db.execSQL("create table if not exists taStu(Rollno text,m1 text,m2
text)");
         String rn= rollno.getText().toString();
         String ma1=M1.getText().toString();
         String ma2=M2.getText().toString();
         db.execSQL("insert into taStu values('"+ rn  +"','"+ ma1 +"','"+
ma2 +"')");
         Cursor cuStu=db.rawQuery("select * from taStu", null);
```

```
          cuStu.moveToFirst();

          Double mark1=Double.parseDouble( cuStu.getString(1));
          Double mark2=Double.parseDouble( cuStu.getString(2));

          Double tot=mark1+mark2;
          total.setText(Double.toString(tot));

          Double perc=tot/2;
          per.setText(Double.toString(perc));

          if ((mark1>40) &&(mark2>40) )
          {
             result.setText("Pass");
          }
          else{
             result.setText("Fail");
          }
          db.close();
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is
present.
        getMenuInflater().inflate(R.menu.main, menu);
        return true;
    }
   }
```

Extra Credit

This Student mark database is working properly with total, percentage, and result.
This app will work properly in the Test Cases 1 & 2. By the use of this coding can do the following operation

Mark 1 = 60
Mark 2 = 60
Total =120.0
Percentage=60 .0
Result = Pass

The following operations cannot do by the use of this application

Mark 1 = 60
Mark 2 = -60
Total =0
Percentage=0
Result = Pass

I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #2 Laboratory: Students Semester Mark List

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #3 Laboratory: Hotel Menu Card using ListView Activity

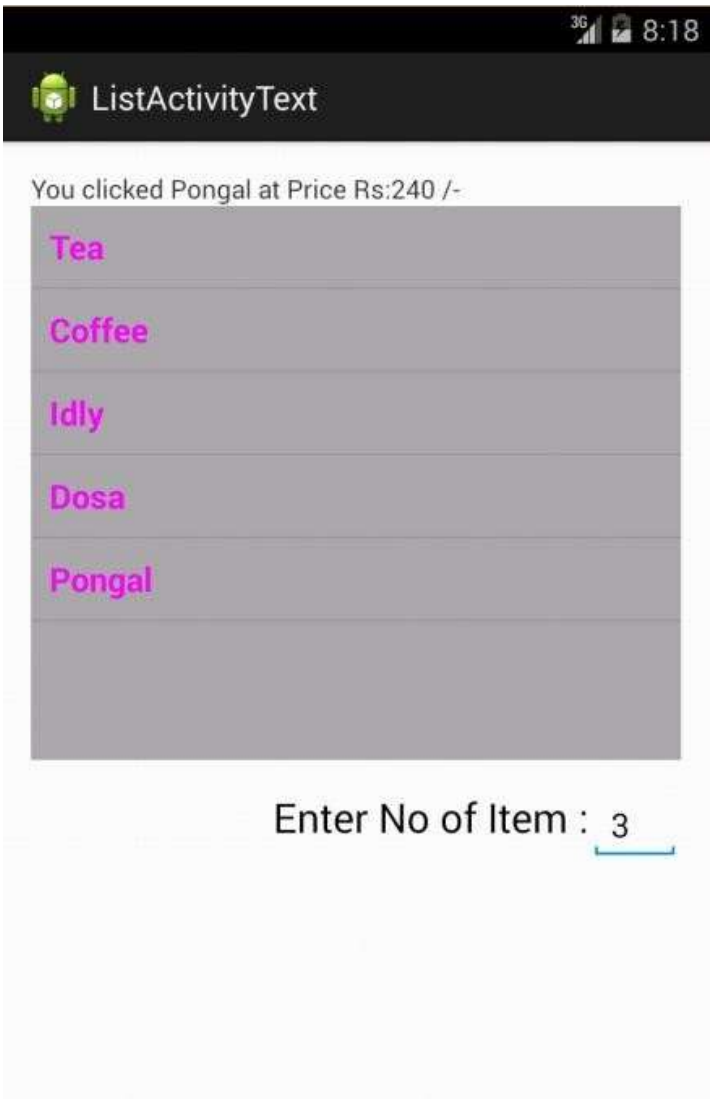
Exercise 3: Develop a mobile application for Hotel Menu card.

Input	Hotel Menu Items and No. of items
Output	Total Bill Amount
Process	Enter No of Items and choose the item get bill amount

Test cases	Input	Expected Output	Obtained Output
1	No. Of Item :2 Choose Coffee	Coffee at Price Rs: 40/-	
2	No. Of Item:3 Choose Pongal	Pongal at Price Rs:240/-	

Source Code

Screen Layout



Activity_main.XML

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent"
android:layout_height="match_parent" android:paddingBottom="@dimen/activity_vertical_margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin" tools:context=".MainActivity" >

<TextView
android:layout_width="wrap_content" android:layout_height="wrap_content"
android:id="@+id/mainText" android:text="My list" />

<TextView
android:layout_width="wrap_content" android:layout_height="wrap_content"
android:layout_below="@+id/mainText" android:id="@android:id/empty" android:text="There is no
data" android:textStyle="bold" />
<ListView
android:id="@android:id/list" android:layout_width="wrap_content" android:layout_height="300dp"
android:layout_alignLeft="@+id/mainText" android:layout_below="@+id/mainText"
android:background="#aaaaaa" >
</ListView>

<TextView
android:id="@+id/textView1" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:layout_below="@android:id/list"
android:layout_marginTop="16dp" android:layout_toLeftOf="@+id/editText1" android:text="Enter No
of Item :"
android:textAppearance="?android:attr/textAppearanceLarge" />

<EditText
android:id="@+id/editText1" android:layout_width="50dp" android:layout_height="wrap_content"
android:layout_alignRight="@android:id/list" android:layout_alignTop="@+id/textView1"
android:ems="10" >

<requestFocus />
</EditText>

</RelativeLayout>
```

row_layout.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" >

<TextView
android:id="@+id/listText" android:layout_width="wrap_content"
android:layout_height="wrap_content" android:padding="10dp" android:textSize="18sp"
android:textStyle="bold" android:textColor="#ff00ff" />

</LinearLayout>
```

MainActivity.java

```
package com.example.exdb;

import android.os.Bundle; import android.R.string; import android.app.Activity;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.view.Menu; import android.view.View; import android.widget.EditText; import
android.widget.TextView;

public class MainActivity extends ListActivity {

private TextView text;
private List<String> listValues;
private EditText ET;

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

text = (TextView) findViewById(R.id.mainText); ET=(EditText)findViewById(R.id.editText1);
ET.setText("1");

listValues = new ArrayList<String>(); listValues.add("Tea"); listValues.add("Coffee");
listValues.add("Idly"); listValues.add("Dosa"); listValues.add("Pongal");
```

```
// initiate the listadapter
ArrayAdapter<String> myAdapter = new ArrayAdapter <String>(this, R.layout.row_layout, R.id.listText,
listValues);

// assign the list adapter setListAdapter(myAdapter);

}

// when an item of the list is clicked @Override
protected void onListItemClick(ListView list, View view, int position,
long id) {
super.onListItemClick(list, view, position, id);

String selectedItem = (String)
getListView().getItemAtPosition(position);
if(selectedItem=="Tea"){
int no= Integer.parseInt(ET.getText().toString()); text.setText("You clicked " + selectedItem + " at Price
Rs: " + (no*10) +" /-");
}
else if(selectedItem=="Coffee"){
int no= Integer.parseInt(ET.getText().toString()); text.setText("You clicked " + selectedItem + " at Price
Rs:" + (no*20) +" /-");
}
else if(selectedItem=="Idly"){
int no= Integer.parseInt(ET.getText().toString()); text.setText("You clicked " + selectedItem + " at Price
Rs:" + (no*30)+" /-");
}
else if(selectedItem=="Dosa"){
int no= Integer.parseInt(ET.getText().toString()); text.setText("You clicked " + selectedItem + " at Price
Rs:" + (no*60)+" /-");
}
else if(selectedItem=="Pongal"){
int no= Integer.parseInt(ET.getText().toString()); text.setText("You clicked " + selectedItem + " at Price
Rs:" + (no*80)+" /-");
} }
}
```

Extra Credit

With this application add 3 more textview and editview control to get more than one items with its Nos. Calculate total amount of ordered items.

I MSc CS A – P24CS1P2 - Mobile Application Development LAB
Week #1 Laboratory: Native calculator mobile app for arithmetic operations

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #4 Laboratory: Monthly Budget

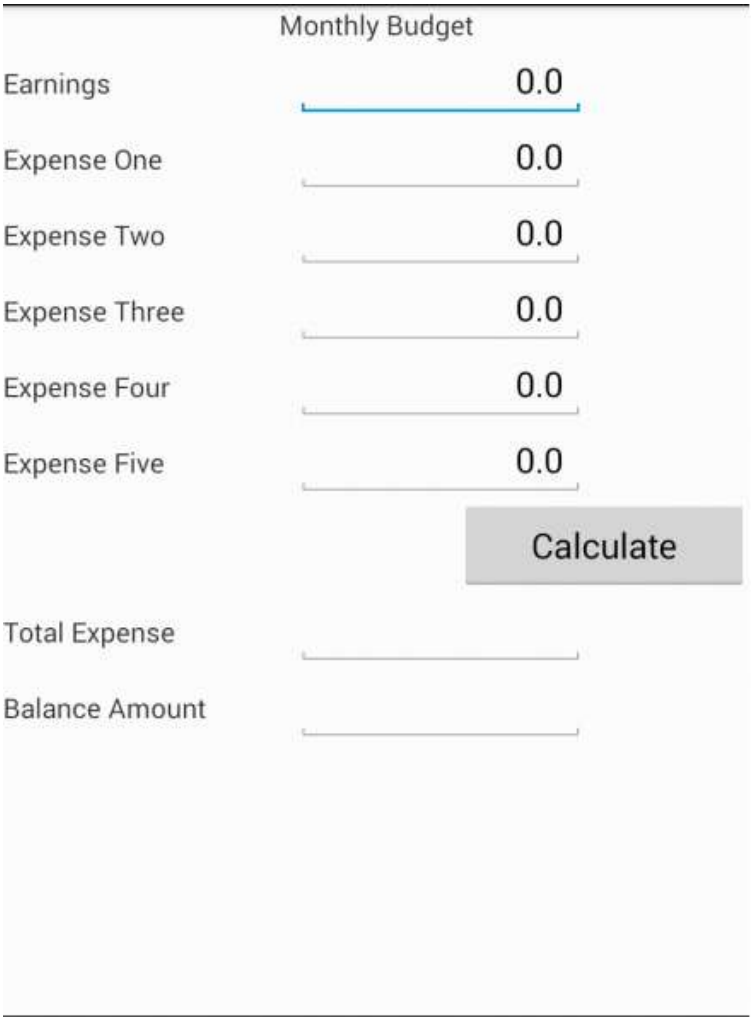
Exercise 04: Develop an android application for Monthly Budget.

Input	Monthly expense
Output	Balance amount
Process	Enter Earnings and expense and find the total expense and balance amount

Test cases	Input	Expected Output	Obtained Output
1	Earnings : 3500.00 Expense One : 350.00 Expense Two : 450.00	Total Expense : 800.00 Balance Amount : 2700.00	

Source Code

Screen Layout



Activity_budget.XML

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical" >
    <TextView
        android:id="@+id/textView1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="@string/title" />
    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >
        <TableRow
            android:id="@+id/tableRow1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                <TextView
                    android:id="@+id/textView2"
                          android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:text="@string/in" />
                    <EditText
                    android:id="@+id/editText1"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:gravity="right">
                    <requestFocus />
                    </EditText>
        </TableRow>
        <TableRow
            android:id="@+id/tableRow2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                    <TextView
                    android:id="@+id/textView3"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:text="@string/eone" />
                    <EditText
                    android:id="@+id/editText2"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:gravity="right">
                    <requestFocus />
                    </EditText>
        </TableRow>
```

```
        <TableRow
            android:id="@+id/tableRow3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                    <TextView
                    android:id="@+id/textView4"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:text="@string/etwo" />
                    <EditText
                    android:id="@+id/editText3"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:gravity="right">
                    <requestFocus />
                    </EditText>
        </TableRow>
        <TableRow
            android:id="@+id/tableRow4"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                    <TextView
                    android:id="@+id/textView5"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:text="@string/ethree" />
                    <EditText
                    android:id="@+id/editText4"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:gravity="right">
                    <requestFocus />
                    </EditText>
        </TableRow>
        <TableRow
            android:id="@+id/tableRow5"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                    <TextView
                    android:id="@+id/textView6"
                           android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:text="@string/efour" />
                    <EditText
                    android:id="@+id/editText5"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:gravity="right">
```

```
                <requestFocus />
                </EditText>
        </TableRow>
        <TableRow
            android:id="@+id/tableRow6"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                <TextView
                android:id="@+id/textView7"
                android:layout_width="150dp"
                android:layout_height="wrap_content"
                android:text="@string/efive" />
                <EditText
                android:id="@+id/editText6"
                android:layout_width="150dp"
                android:layout_height="wrap_content"
                android:ems="10"
                android:inputType="numberDecimal"
                android:gravity="right">
                <requestFocus />
                </EditText>
        </TableRow>
        <TableRow
            android:id="@+id/tableRow7"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="right">
            <Button
               android:id="@+id/button1"
               android:text="@string/btn"
               android:layout_width="wrap_content"
               android:layout_height="wrap_content"
               android:onClick="cal"/>
      </TableRow>
      <TableRow
            android:id="@+id/tableRow8"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" >
                <TextView
                android:id="@+id/textView13"
                android:layout_width="150dp"
                android:layout_height="wrap_content"
                android:text="@string/tot" />

                <EditText
                android:id="@+id/editText12"
                android:layout_width="150dp"
                android:layout_height="wrap_content"
                android:ems="10"
                android:inputType="numberDecimal"
                android:gravity="right">
                <requestFocus />
                </EditText>
        </TableRow>
```

```
          <TableRow
             android:id="@+id/tableRow9"
             android:layout_width="wrap_content"
             android:layout_height="wrap_content" >
         </TableRow>
         <TableRow
             android:id="@+id/tableRow16"
             android:layout_width="wrap_content"
             android:layout_height="wrap_content" >
                    <TextView
                    android:id="@+id/textView14"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:text="@string/ba" />
                    <EditText
                    android:id="@+id/editText13"
                    android:layout_width="150dp"
                    android:layout_height="wrap_content"
                    android:ems="10"
                    android:inputType="numberDecimal"
                    android:gravity="right">
                    <requestFocus />
                    </EditText>
         </TableRow>
    </TableLayout>
</LinearLayout>
```

String.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string name="app_name">Budget</string>
    <string name="action_settings">Settings</string>
    <string name="title">Monthly Budget</string>
    <string name="in">Earnings</string>
    <string name="eone">Expense One</string>
    <string name="etwo">Expense Two</string>
    <string name="ethree">Expense Three</string>
    <string name="efour">Expense Four</string>
    <string name="efive">Expense Five</string>
    <string name="btn">Calculate</string>
    <string name="tot">Total Expense</string>
    <string name="ba">Balance Amount</string>
</resources>
```

BudgetActivity.java

```
package com.example.budget;
```

```
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.view.View;
import android.widget.EditText;


public class BudgetActivity extends Activity {

       EditText in, eone, etwo, ethree, efour, efive, te,bal;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_budget);
        in= (EditText)findViewById(R.id.editText1);
        in.requestFocus();
        eone=(EditText)findViewById(R.id.editText2);
         etwo=(EditText)findViewById(R.id.editText3);
         ethree=(EditText)findViewById(R.id.editText4);
         efour=(EditText)findViewById(R.id.editText5);
         efive=(EditText)findViewById(R.id.editText6);
        te=(EditText)findViewById(R.id.editText12);
        bal=(EditText)findViewById(R.id.editText13);

        in.setText("0.0");
        eone.setText("0.0");
        etwo.setText("0.0");
        ethree.setText("0.0");
        efour.setText("0.0");
        efive.setText("0.0");
    }

    public void cal(View v){

       double income= Double.parseDouble(in.getText().toString());
       double exone= Double.parseDouble(eone.getText().toString());
       double extwo= Double.parseDouble(etwo.getText().toString());
       double exthree= Double.parseDouble(ethree.getText().toString());
       double exfour= Double.parseDouble(efour.getText().toString());
       double exfive= Double.parseDouble(efive.getText().toString());

       double total = exone+extwo+exthree+exfour+exfive;
       double balance= income-total;

       te.setText(Double.toString(total));
       bal.setText(Double.toString(balance));

    }


    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
```

```
        getMenuInflater().inflate(R.menu.budget, menu);
        return true;
    }

}
```

Extra Credit

Create the android application for the following Expense Tracker Monitor

Expense Tracker Monitor

Monthly Income

Category #1 Budget

Category #2 Budget

Category #1 Expense

Enter expense amount

Expense Amount

Next

Category #2 Expense

Enter expense amount

Expense Amount

Next

.
.
.

Total expense amount

Balance amount

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #5 Laboratory: Digital Diary

Exercise 05: Develop an android application for Digital Diary.

Input	Events
Output	Events remainder
Process	Enter Events list and recall events with its appropriate Date and time

Test cases	Input	Expected Output	Obtained Output
1			

Source Code

Screen Layout

Activity_DD.XML

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

  <ListView android:id="@+id/android:list"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" />
  <TextView android:id="@+id/android:empty"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:text="" />
</LinearLayout>

//diary_now.xml

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout android:id="@+id/row"
```

```
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="fill_parent"
  android:layout_height="fill_parent">

  <TextView android:id="@+id/text1"
    android:layout_width="wrap_content" android:layout_height="30px"
    android:maxWidth="200dip"
    android:textSize="22sp"
    android:layout_marginTop="10dip"
    android:text="??????" />
  <TextView android:id="@+id/created" android:layout_width="wrap_content"
    android:layout_height="35px" android:layout_alignParentRight="true"
    android:layout_marginLeft="10dip"
    android:layout_marginTop="10dip"
    android:text="1999?12?3?" />

</RelativeLayout>
```

diary_now.xml

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

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

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

```
    <TextView android:layout_width="wrap_content"
      android:layout_height="wrap_content" android:text="@string/title"
      android:padding="2px" />
    <EditText android:id="@+id/title"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content" android:layout_weight="1" />
  </LinearLayout>

  <TextView android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:text="@string/body" />
  <EditText android:id="@+id/body" android:layout_width="fill_parent"
    android:layout_height="fill_parent" android:layout_weight="1"
    android:scrollbars="vertical" android:gravity="top" />

  <Button android:id="@+id/confirm" android:text="@string/confirm"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" />

</LinearLayout>
```

String.xml

```
-------No data------
```

DDActivity.java

```
package com.eoeAndroid.SQLite;
```

```
import android.app.ListActivity;
import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.ListView;
import android.widget.SimpleCursorAdapter;



import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import java.util.Calendar;
import java.util.Date;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;

 class DiaryDbAdapter {
```

```
  public static final String KEY_TITLE = "title";
  public static final String KEY_BODY = "body";
  public static final String KEY_ROWID = "_id";
  public static final String KEY_CREATED = "created";

  private static final String TAG = "DiaryDbAdapter";
  private DatabaseHelper mDbHelper;
  private SQLiteDatabase mDb;

  private static final String DATABASE_CREATE = "create table diary (_id integer primary key autoincre
ment, "
    + "title text not null, body text not null, created text not null);";

  private static final String DATABASE_NAME = "database";
  private static final String DATABASE_TABLE = "diary";
  private static final int DATABASE_VERSION = 1;

  private final Context mCtx;

  private static class DatabaseHelper extends SQLiteOpenHelper {

   DatabaseHelper(Context context) {
    super(context, DATABASE_NAME, null, DATABASE_VERSION);
   }

   @Override
   public void onCreate(SQLiteDatabase db) {
    db.execSQL(DATABASE_CREATE);
   }
```

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

public DiaryDbAdapter(Context ctx) {
  this.mCtx = ctx;
}

public DiaryDbAdapter open() throws SQLException {
  mDbHelper = new DatabaseHelper(mCtx);
  mDb = mDbHelper.getWritableDatabase();
  return this;
}

public void closeclose() {
  mDbHelper.close();
}

public long createDiary(String title, String body) {
  ContentValues initialValues = new ContentValues();
  initialValues.put(KEY_TITLE, title);
  initialValues.put(KEY_BODY, body);
  Calendar calendar = Calendar.getInstance();
  String created = calendar.get(Calendar.YEAR) + ""
     + calendar.get(Calendar.MONTH) + ""
     + calendar.get(Calendar.DAY_OF_MONTH) + ""
     + calendar.get(Calendar.HOUR_OF_DAY) + ""
```

```
      + calendar.get(Calendar.MINUTE) + "";
   initialValues.put(KEY_CREATED, created);
   return mDb.insert(DATABASE_TABLE, null, initialValues);
 }

 public boolean deleteDiary(long rowId) {

   return mDb.delete(DATABASE_TABLE, KEY_ROWID + "=" + rowId, null) > 0;
 }

public Cursor getAllNotes() {

   return mDb.query(DATABASE_TABLE, new String[] { KEY_ROWID, KEY_TITLE,
      KEY_BODY, KEY_CREATED }, null, null, null, null, null);
 }

 public Cursor getDiary(long rowId) throws SQLException {

   Cursor mCursor =

   mDb.query(true, DATABASE_TABLE, new String[] { KEY_ROWID, KEY_TITLE,
      KEY_BODY, KEY_CREATED }, KEY_ROWID + "=" + rowId, null, null,
      null, null, null);
   if (mCursor != null) {
     mCursor.moveToFirst();
   }
   return mCursor;

 }
```

```
 public boolean updateDiary(long rowId, String title, String body) {
   ContentValues args = new ContentValues();
   args.put(KEY_TITLE, title);
   args.put(KEY_BODY, body);
   Calendar calendar = Calendar.getInstance();
   String created = calendar.get(Calendar.YEAR) + ""
      + calendar.get(Calendar.MONTH) + ""
      + calendar.get(Calendar.DAY_OF_MONTH) + ""
      + calendar.get(Calendar.HOUR_OF_DAY) + ""
      + calendar.get(Calendar.MINUTE) + "";
   args.put(KEY_CREATED, created);

   return mDb.update(DATABASE_TABLE, args, KEY_ROWID + "=" + rowId, null) > 0;
 }
}

class ActivityDiaryEdit extends Activity {

 private EditText mTitleText;
 private EditText mBodyText;
 private Long mRowId;
 private DiaryDbAdapter mDbHelper;

 @Override
 protected void onCreate(Bundle savedInstanceState) {
  super.onCreate(savedInstanceState);
  mDbHelper = new DiaryDbAdapter(this);
  mDbHelper.open();
  setContentView(R.layout.diary_edit);
```

```
mTitleText = (EditText) findViewById(R.id.title);
mBodyText = (EditText) findViewById(R.id.body);

Button confirmButton = (Button) findViewById(R.id.confirm);

mRowId = null;
Bundle extras = getIntent().getExtras();
if (extras != null) {
 String title = extras.getString(DiaryDbAdapter.KEY_TITLE);
 String body = extras.getString(DiaryDbAdapter.KEY_BODY);
 mRowId = extras.getLong(DiaryDbAdapter.KEY_ROWID);

 if (title != null) {
  mTitleText.setText(title);
 }
 if (body != null) {
  mBodyText.setText(body);
 }
}

confirmButton.setOnClickListener(new View.OnClickListener() {
 public void onClick(View view) {
  String title = mTitleText.getText().toString();
  String body = mBodyText.getText().toString();
  if (mRowId != null) {
   mDbHelper.updateDiary(mRowId, title, body);
  } else
   mDbHelper.createDiary(title, body);
  Intent mIntent = new Intent();
  setResult(RESULT_OK, mIntent);
```

```
        finish();
      }

    });
  }
}

public class ActivityMain extends ListActivity {
  private static final int ACTIVITY_CREATE = 0;
  private static final int ACTIVITY_EDIT = 1;

  private static final int INSERT_ID = Menu.FIRST;
  private static final int DELETE_ID = Menu.FIRST + 1;

  private DiaryDbAdapter mDbHelper;
  private Cursor mDiaryCursor;

  @Override
  public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.diary_list);
    mDbHelper = new DiaryDbAdapter(this);
    mDbHelper.open();
    renderListView();

  }

  private void renderListView() {
    mDiaryCursor = mDbHelper.getAllNotes();
    startManagingCursor(mDiaryCursor);
```

```
  String[] from = new String[] { DiaryDbAdapter.KEY_TITLE,
      DiaryDbAdapter.KEY_CREATED };
  int[] to = new int[] { R.id.text1, R.id.created };
  SimpleCursorAdapter notes = new SimpleCursorAdapter(this,
      R.layout.diary_row, mDiaryCursor, from, to);
  setListAdapter(notes);
 }

 @Override
 public boolean onCreateOptionsMenu(Menu menu) {
  super.onCreateOptionsMenu(menu);
  menu.add(0, INSERT_ID, 0, R.string.menu_insert);
  menu.add(0, DELETE_ID, 0, R.string.menu_delete);
  return true;
 }

 @Override
 public boolean onMenuItemSelected(int featureId, MenuItem item) {
  switch (item.getItemId()) {
  case INSERT_ID:
    createDiary();
    return true;
  case DELETE_ID:
    mDbHelper.deleteDiary(getListView().getSelectedItemId());
    renderListView();
    return true;
  }
  return super.onMenuItemSelected(featureId, item);
 }
```

```
  private void createDiary() {
    Intent i = new Intent(this, ActivityDiaryEdit.class);
    startActivityForResult(i, ACTIVITY_CREATE);
  }

  @Override

  protected void onListItemClick(ListView l, View v, int position, long id) {
    super.onListItemClick(l, v, position, id);
    Cursor c = mDiaryCursor;
    c.moveToPosition(position);
    Intent i = new Intent(this, ActivityDiaryEdit.class);
    i.putExtra(DiaryDbAdapter.KEY_ROWID, id);
    i.putExtra(DiaryDbAdapter.KEY_TITLE, c.getString(c
        .getColumnIndexOrThrow(DiaryDbAdapter.KEY_TITLE)));
    i.putExtra(DiaryDbAdapter.KEY_BODY, c.getString(c
        .getColumnIndexOrThrow(DiaryDbAdapter.KEY_BODY)));
    startActivityForResult(i, ACTIVITY_EDIT);
  }
  @Override
  protected void onActivityResult(int requestCode, int resultCode,
      Intent intent) {
    super.onActivityResult(requestCode, resultCode, intent);
    renderListView();
  }
}
```

Extra Credit

I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #4 Laboratory: Native calculator mobile app for Monthly Budget

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #6 Laboratory: Monthly Budget

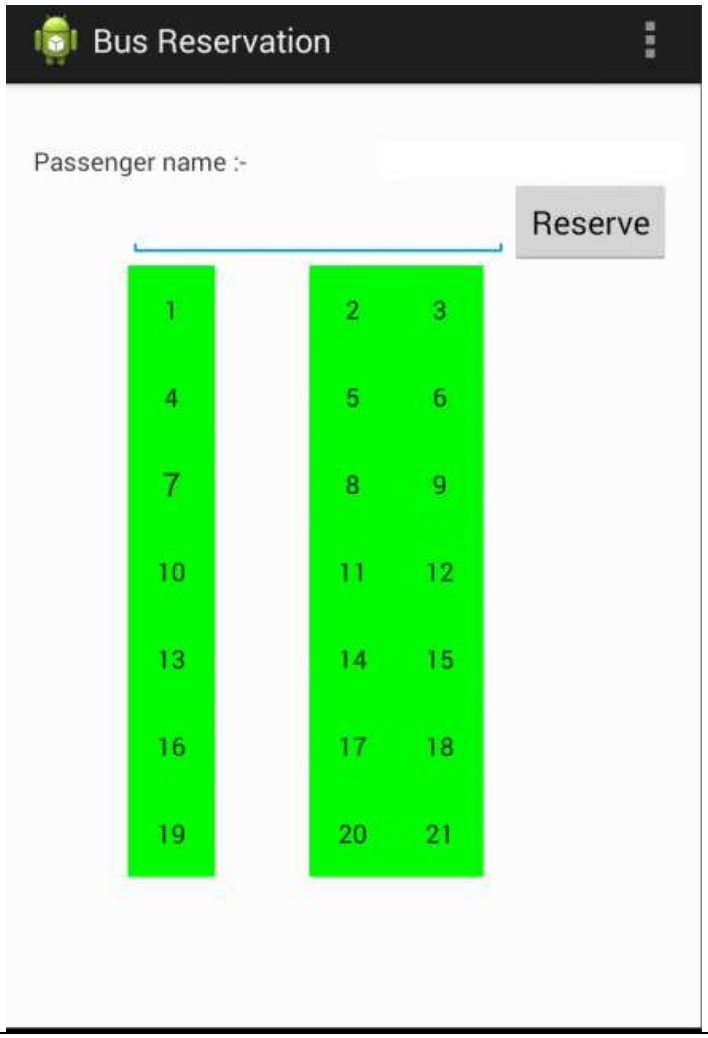
Exercise 06: Develop an android application for Bus Ticket Reservation.

Input	Passenger Name
Output	Reserved Seat with color change
Process	Enter the passenger name and click reserve and get the reservation

Test cases	Input	Expected Output	Obtained Output
1	Passenger name = BHC	Seat no 1 change to red color, when click seat no 1 It shows passenger name	
2	Passenger name =Null	'Please enter Passenger Name'	

Source Code

Screen Layout



activity_bus_reservation.XML

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:paddingBottom="@dimen/activity_vertical_margin"
   android:paddingLeft="@dimen/activity_horizontal_margin"
   android:paddingRight="@dimen/activity_horizontal_margin"
   android:paddingTop="@dimen/activity_vertical_margin"
   tools:context=".BusReservationActivity" >

   <Button
      android:id="@+id/button6"
      style="?android:attr/buttonStyleSmall"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignLeft="@+id/button3"
      android:layout_alignRight="@+id/button3"
      android:layout_alignTop="@+id/button5"
      android:text="@string/five"
      android:onClick="btnfive"/>

   <Button
      android:id="@+id/button7"
      style="?android:attr/buttonStyleSmall"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignBaseline="@+id/button6"
      android:layout_alignBottom="@+id/button6"
      android:layout_alignLeft="@+id/button4"
      android:layout_alignRight="@+id/button4"
      android:text="@string/six"
      android:onClick="btnsix"/>

   <Button
      android:id="@+id/button13"
      style="?android:attr/buttonStyleSmall"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignBaseline="@+id/button12"
      android:layout_alignBottom="@+id/button12"
      android:layout_alignLeft="@+id/button10"
      android:layout_alignRight="@+id/button10"
      android:text="@string/twelve"
      android:onClick="btntwelve" />
```

```
<Button
   android:id="@+id/button15"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button14"
   android:layout_alignBottom="@+id/button14"
   android:layout_alignLeft="@+id/button12"
   android:layout_alignRight="@+id/button12"
   android:text="@string/fourteen"
   android:onClick="btnfourteen" />

<Button
   android:id="@+id/button16"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button15"
   android:layout_alignBottom="@+id/button15"
   android:layout_alignLeft="@+id/button13"
   android:layout_alignRight="@+id/button13"
   android:text="@string/fifteen"
   android:onClick="btnfifteen"/>

<Button
   android:id="@+id/button18"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignLeft="@+id/button15"
   android:layout_alignRight="@+id/button15"
   android:layout_alignTop="@+id/button17"
   android:text="@string/seventeen"
   android:onClick="btnseventeen" />

<Button
   android:id="@+id/button19"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button17"
   android:layout_alignBottom="@+id/button17"
   android:layout_alignLeft="@+id/button16"
   android:layout_alignRight="@+id/button16"
   android:text="@string/eighteen"
   android:onClick="btneighteen" />
```

```
<Button
   android:id="@+id/button1"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignParentRight="true"
   android:layout_below="@+id/textView1"
   android:text="@string/btn"
   android:onClick="reserve"   />

<EditText
   android:id="@+id/editText2"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button1"
   android:layout_alignBottom="@+id/button1"
   android:layout_toLeftOf="@+id/button1"
   android:ems="10"
    />

<TextView
   android:id="@+id/textView1"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignParentLeft="true"
   android:layout_alignParentTop="true"
   android:layout_marginTop="17dp"
   android:text="@string/name" />

<Button
   android:id="@+id/button2"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignLeft="@+id/editText2"
   android:layout_below="@+id/button1"
   android:text="@string/one"
   android:onClick="btnone"/>

<Button
   android:id="@+id/button3"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button2"
   android:layout_alignBottom="@+id/button2"
   android:layout_centerHorizontal="true"
   android:text="@string/two"
   android:onClick="btntwo"/>
```

```
<Button
   android:id="@+id/button4"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignBaseline="@+id/button3"
   android:layout_alignBottom="@+id/button3"
   android:layout_toRightOf="@+id/button3"
   android:text="@string/three"
   android:onClick="btnthree" />

<Button
   android:id="@+id/button5"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignLeft="@+id/button2"
   android:layout_below="@+id/button2"
   android:text="@string/four"
   android:onClick="btnfour"/>

<Button
   android:id="@+id/button8"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignLeft="@+id/button5"
   android:layout_alignRight="@+id/button5"
   android:layout_below="@+id/button5"
   android:text="@string/seven"
   android:onClick="btnseven"/>

<Button
   android:id="@+id/button11"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_alignLeft="@+id/button8"
   android:layout_below="@+id/button9"
   android:text="@string/ten"
   android:onClick="btnten" />

<Button
   android:id="@+id/button12"
   style="?android:attr/buttonStyleSmall"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_below="@+id/button8"
```

```
    android:layout_toLeftOf="@+id/button10"
    android:text="@string/eleven"
    android:onClick="btneleven"/>

  <Button
    android:id="@+id/button14"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button11"
    android:layout_below="@+id/button11"
    android:text="@string/thirteen"
    android:onClick="btnthirteen"/>

  <Button
    android:id="@+id/button17"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button14"
    android:layout_below="@+id/button14"
    android:text="@string/sixteen"
    android:onClick="btnsixteen" />
  <Button
    android:id="@+id/button20"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button17"
    android:layout_below="@+id/button17"
    android:text="@string/Nineteen"
    android:onClick="btnnineteen"/>

  <Button
    android:id="@+id/button21"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button18"
    android:layout_below="@+id/button18"
    android:text="@string/Twenty"
    android:onClick="btntwenty" />

  <Button
    android:id="@+id/button22"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
    android:layout_alignLeft="@+id/button19"
    android:layout_below="@+id/button19"
    android:text="@string/TwentyOne"
    android:onClick="btntwentyone" />

  <Button
    android:id="@+id/button10"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button6"
    android:layout_toRightOf="@+id/button6"
    android:text="@string/nine"
    android:onClick="btnnine" />

  <Button
    android:id="@+id/button9"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button6"
    android:layout_toLeftOf="@+id/button7"
    android:text="@string/eight"
    android:onClick="btneight" />

  <EditText
    android:id="@+id/editText1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/textView1"
    android:layout_toRightOf="@+id/button3"
    android:ems="10" />

</RelativeLayout>
```

String.xml

```
--- No change---
```

BusReservationActivity.java

```
int seatno=1;
        EditText name, seat;
        Button reg, one, two, three, four, five, six, seven, eitht, nine, ten, eleven, twelve, thirteen,
fourteen, fifteen, sixteen, seventeen, eithteen, ninteen, twenty, twentyone;
        String [] res = new String[21];


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

    name=(EditText)findViewById(R.id.editText2);
    seat=(EditText)findViewById(R.id.editText1);

    reg=(Button)findViewById(R.id.button1);
    one=(Button)findViewById(R.id.button2);
    two=(Button)findViewById(R.id.button3);
    three=(Button)findViewById(R.id.button4);
    four=(Button)findViewById(R.id.button5);
    five=(Button)findViewById(R.id.button6);
    six=(Button)findViewById(R.id.button7);
    seven=(Button)findViewById(R.id.button8);
    eitht=(Button)findViewById(R.id.button9);
    nine=(Button)findViewById(R.id.button10);
    ten=(Button)findViewById(R.id.button11);
    eleven=(Button)findViewById(R.id.button12);
    twelve=(Button)findViewById(R.id.button13);
    thirteen=(Button)findViewById(R.id.button14);
    fourteen=(Button)findViewById(R.id.button15);
    fifteen=(Button)findViewById(R.id.button16);
    sixteen=(Button)findViewById(R.id.button17);
    seventeen=(Button)findViewById(R.id.button18);
    eithteen=(Button)findViewById(R.id.button19);
    ninteen=(Button)findViewById(R.id.button20);
    twenty=(Button)findViewById(R.id.button21);
    twentyone=(Button)findViewById(R.id.button22);


    one.setBackgroundColor(Color.GREEN);
    two.setBackgroundColor(Color.GREEN);
    three.setBackgroundColor(Color.GREEN);
    four.setBackgroundColor(Color.GREEN);
    five.setBackgroundColor(Color.GREEN);
    six.setBackgroundColor(Color.GREEN);
```

```
    seven.setBackgroundColor(Color.GREEN);
    eitht.setBackgroundColor(Color.GREEN);
    nine.setBackgroundColor(Color.GREEN);
    ten.setBackgroundColor(Color.GREEN);
    eleven.setBackgroundColor(Color.GREEN);
    twelve.setBackgroundColor(Color.GREEN);
    thirteen.setBackgroundColor(Color.GREEN);
    fourteen.setBackgroundColor(Color.GREEN);
    fifteen.setBackgroundColor(Color.GREEN);
    sixteen.setBackgroundColor(Color.GREEN);
    seventeen.setBackgroundColor(Color.GREEN);
    eithteen.setBackgroundColor(Color.GREEN);
    ninteen.setBackgroundColor(Color.GREEN);
    twenty.setBackgroundColor(Color.GREEN);
    twentyone.setBackgroundColor(Color.GREEN);

}


public void reserve (View v)
{
        String na;
        na=name.getText().toString();

        if (na.length()==0)
        {
                Toast.makeText(this, "Please Enter the Name !", Toast.LENGTH_SHORT)
                 .show();
        }
        else
        {
                 res[seatno]=na.toString();
                 switch(seatno)
                 {
                 case 1:
                 {
                          one.setBackgroundColor(Color.RED);
                          break;
                 }
                 case 2:
                 {
                          two.setBackgroundColor(Color.RED);
                          break;
                 }
                 case 3:
                 {
                          three.setBackgroundColor(Color.RED);
                          break;
```

```
                }
                case 4:
                {
                        four.setBackgroundColor(Color.RED);
                        break;
                }
                case 5:
                {
                        five.setBackgroundColor(Color.RED);
                        break;
                }
                case 6:
                {
                        six.setBackgroundColor(Color.RED);
                        break;
                }
                case 7:
                {
                        seven.setBackgroundColor(Color.RED);
                        break;
                }
                case 8:
                {
                        eitht.setBackgroundColor(Color.RED);
                        break;
                }
                case 9:
                {
                        nine.setBackgroundColor(Color.RED);
                        break;
                }
                case 10:
                {
                        ten.setBackgroundColor(Color.RED);
                        break;
                }
                case 11:
                {
                        eleven.setBackgroundColor(Color.RED);
                        break;
                }
                case 12:
                {
                        twelve.setBackgroundColor(Color.RED);
                        break;
                }
                case 13:
                {
```

```
                    thirteen.setBackgroundColor(Color.RED);
                    break;
                }
                case 14:
                {
                    fourteen.setBackgroundColor(Color.RED);
                    break;
                }
                case 15:
                {
                    fifteen.setBackgroundColor(Color.RED);
                    break;
                }
                case 16:
                {
                    sixteen.setBackgroundColor(Color.RED);
                    break;
                }
                case 17:
                {
                    seventeen.setBackgroundColor(Color.RED);
                    break;
                }
                case 18:
                {
                    eithteen.setBackgroundColor(Color.RED);
                    break;
                }
                case 19:
                {
                    nine.setBackgroundColor(Color.RED);
                    break;
                }
                case 20:
                {
                    twenty.setBackgroundColor(Color.RED);
                    break;
                }
                case 21:
                {
                    twentyone.setBackgroundColor(Color.RED);
                    break;
                }
                }
                seatno++;

        }
    }
```

```
public void btnone(View v){
        Toast.makeText(this, res[1], Toast.LENGTH_SHORT)
                .show();
}
public void btntwo(View v){
        Toast.makeText(this, res[2], Toast.LENGTH_SHORT)
                .show();
}
public void btnthree(View v){
        Toast.makeText(this, res[3], Toast.LENGTH_SHORT)
                .show();
}
public void btnfour(View v){
        Toast.makeText(this, res[4], Toast.LENGTH_SHORT)
                .show();
}
public void btnfive(View v){
        Toast.makeText(this, res[5], Toast.LENGTH_SHORT)
                .show();
}
public void btnsix(View v){
        Toast.makeText(this, res[6], Toast.LENGTH_SHORT)
                .show();
}
public void btnseven(View v){
        Toast.makeText(this, res[7], Toast.LENGTH_SHORT)
                .show();
}
public void btneight(View v){
        Toast.makeText(this, res[8], Toast.LENGTH_SHORT)
                .show();
}
public void btnnine(View v){
        Toast.makeText(this, res[9], Toast.LENGTH_SHORT)
                .show();
}
public void btnten(View v){
        Toast.makeText(this, res[10], Toast.LENGTH_SHORT)
                .show();
}
public void btneleven(View v){
        Toast.makeText(this, res[11], Toast.LENGTH_SHORT)
                .show();
}
public void btntwelve(View v){
        Toast.makeText(this, res[12], Toast.LENGTH_SHORT)
                .show();
```

```
}
public void btnthirteen(View v){
        Toast.makeText(this, res[13], Toast.LENGTH_SHORT)
                .show();
}
public void btnfourteen(View v){
        Toast.makeText(this, res[14], Toast.LENGTH_SHORT)
                .show();
}
public void btnfifteen(View v){
        Toast.makeText(this, res[15], Toast.LENGTH_SHORT)
                .show();
}
public void btnsixteen(View v){
        Toast.makeText(this, res[16], Toast.LENGTH_SHORT)
                .show();
}
public void btnseventeen(View v){
        Toast.makeText(this, res[17], Toast.LENGTH_SHORT)
                .show();
}
public void btneighteen(View v){
        Toast.makeText(this, res[18], Toast.LENGTH_SHORT)
                .show();
}
public void btnninteen(View v){
        Toast.makeText(this, res[19], Toast.LENGTH_SHORT)
                .show();
}
public void btntwenty(View v){
        Toast.makeText(this, res[20], Toast.LENGTH_SHORT)
                .show();
}
public void btntwentyone(View v){
        Toast.makeText(this, res[21], Toast.LENGTH_SHORT)
                .show();
}
```

Extra Credit

Create facility to enter desire seat number. If the desire seat is not available, show available seats list. From the available list they can choose.

I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #6 Laboratory: Bus Ticket Reservation

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #7 Laboratory: Basic Graphical Primitives

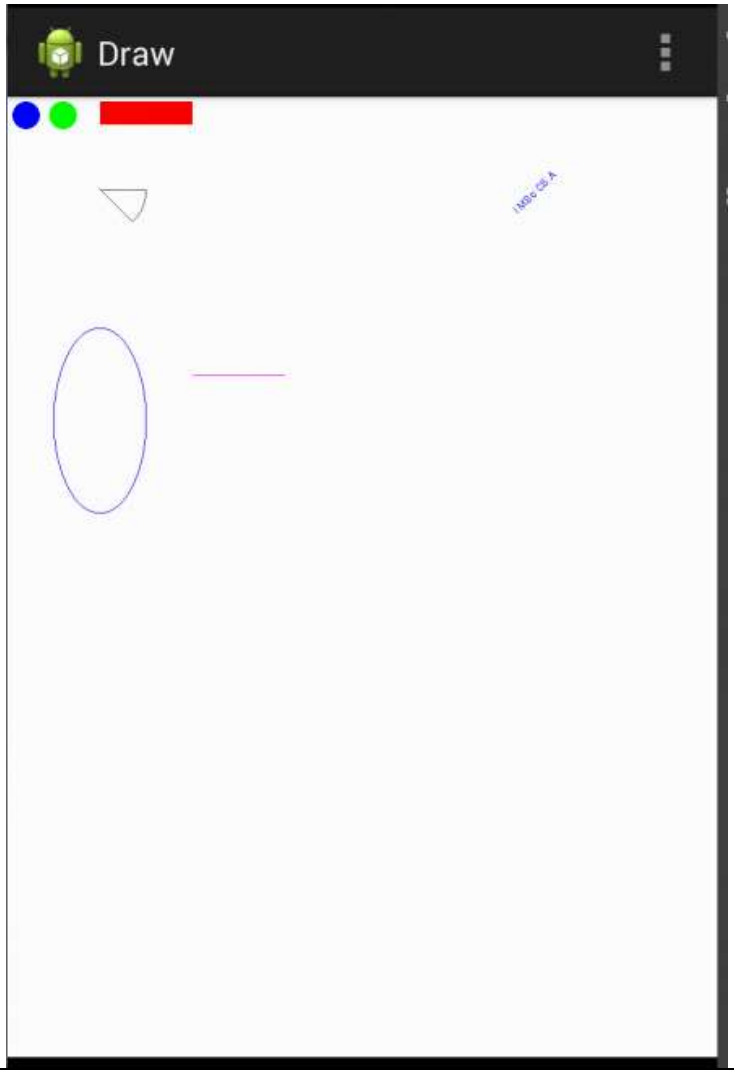
1. Exercise 07: Develop an application that draws basic graphical primitives (Line, Circle, Rectangle, ellipse) on the screen

Input	
Output	
Process	

Test cases	Input	Expected Output	Obtained Output

Source Code

Screen Layout



Activity_main.XML

```
--- No change---
```

String.xml

```
--- No change---
```

MainActivity.java

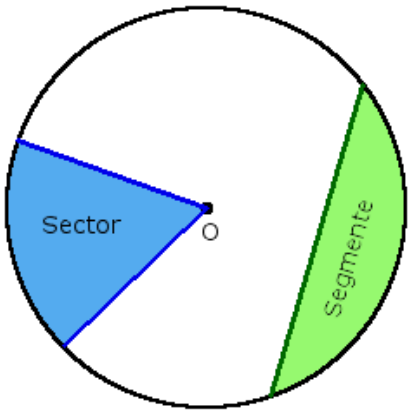
```
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.RectF;
import android.view.View;

@SuppressWarnings("unused")
public class MainActivity extends Activity {

    DemoView demoview;
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        demoview = new DemoView(this);
        setContentView(demoview);
    }

    private class DemoView extends View{

             public DemoView(Context context){
             super(context);
        }
      @Override protected void onDraw(Canvas canvas) {
            super.onDraw(canvas);

            // custom drawing code here
            Paint paint = new Paint();
            paint.setStyle(Paint.Style.FILL);

            // make the entire canvas white
            paint.setColor(Color.WHITE);
            canvas.drawPaint(paint);

            // draw blue circle with anti aliasing turned off
```

```
            paint.setAntiAlias(false);
            paint.setColor(Color.BLUE);
            canvas.drawCircle(20, 20, 15, paint);

            // draw green circle with anti aliasing turned on
            paint.setAntiAlias(true);
            paint.setColor(Color.GREEN);
            canvas.drawCircle(60, 20, 15, paint);

            // draw red rectangle with anti aliasing turned off
            paint.setAntiAlias(false);
            paint.setColor(Color.RED);
            canvas.drawRect(100, 5, 200, 30, paint);


            //draw arc
            paint.setColor(Color.DKGRAY);
            final RectF oval = new RectF();
            paint.setStyle(Paint.Style.STROKE);
            oval.set(50, 50, 150, 150);
            canvas.drawArc(oval, 0, 45, true, paint);

            //draw line
            paint.setColor(Color.MAGENTA);
            canvas.drawLine(200, 300, 300, 300, paint);

            //draw Oval
            paint.setStyle(Paint.Style.STROKE);
            paint.setColor(Color.BLUE);
            RectF oval2 = new RectF(50, 250, 150, 450);
            Paint p2 = new Paint();
            p2.setColor(Color.GREEN);

            //canvas.drawText("Child", 75, 75, p2);
            canvas.drawOval(oval2, paint);

            // draw the rotated text
            canvas.rotate(-45);

            paint.setStyle(Paint.Style.FILL);
            canvas.drawText("I MSc CS A", 300, 480, paint);

            //undo the rotate
            canvas.restore();
        }
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.main, menu);
        return true;
    }
}
```

s

Extra Credit

Create following diagram using basic primitives



I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #7 Laboratory: Basic Graphical Primitives

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #8 Laboratory: **Back Ground Activity using Multithreading**

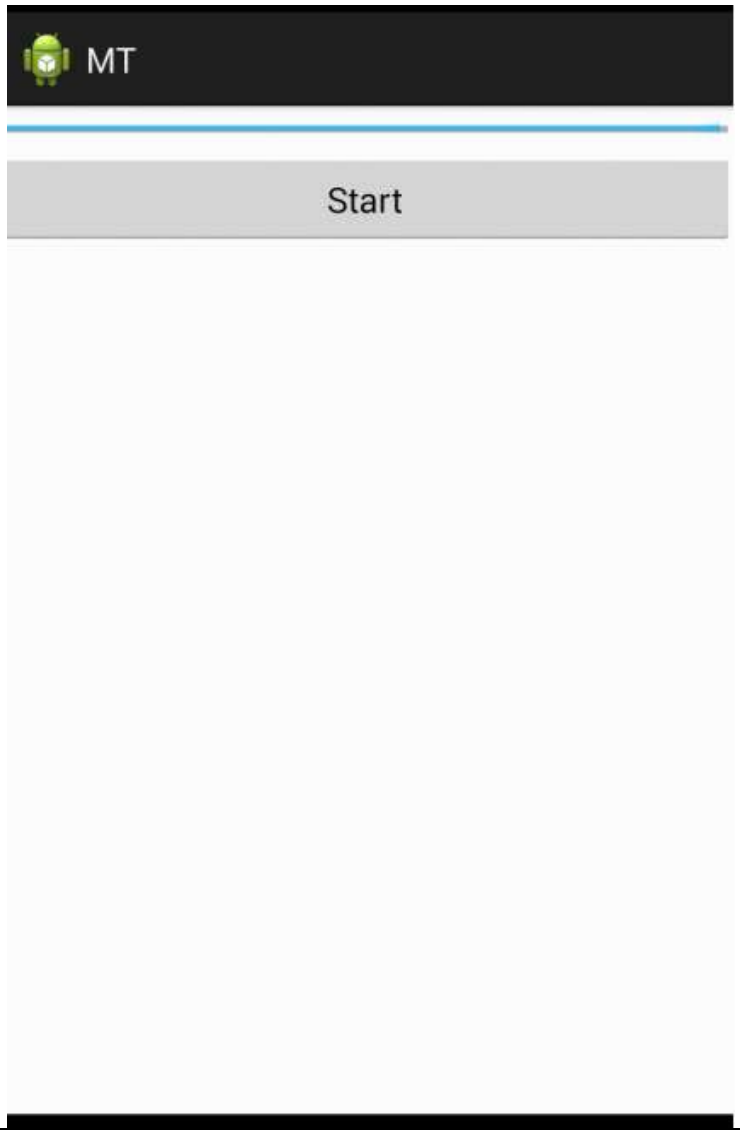
1. Exercise 08: Implement an application to change the back ground activity using multithreading

Input	
Output	
Process	

Test cases	Input	Expected Output	Obtained Output

Source Code

Screen Layout



activity_mt.XML

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

    <ProgressBar
        android:id="@+id/progressBar1"
        style="?android:attr/progressBarStyleHorizontal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:indeterminate="false"
        android:max="10"
        android:padding="4dip" >
    </ProgressBar>

    <Button
        android:id="@+id/button1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="startProgress"
        android:text="Start" />
</LinearLayout>
```

String.xml

```
--- No change---
```

MTActivity.java

```
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;

import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.ProgressBar;

public class MTActivity extends Activity {
    private ProgressBar bar;

    /** Called when the activity is first created. */

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_mt);
        //setContentView(R.layout.main);
        bar = (ProgressBar) findViewById(R.id.progressBar1);

    }
```

```
    public void startProgress(View view) {

        bar.setProgress(0);
        new Thread(new Task()).start();
    }

    class Task implements Runnable {
        @Override
        public void run() {
            for (int i = 0; i <= 10; i++) {
                final int value = i;
                try {
                    Thread.sleep(1000);
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }
                bar.setProgress(value);

            }
        }

    }

}
```

Extra Credit

I MSc CS A - P24CS1P2 - Mobile Application Development LAB **Week #8 Laboratory: Back Ground Activity using Multithreading**

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #9 Laboratory: **SD card Read & Write**

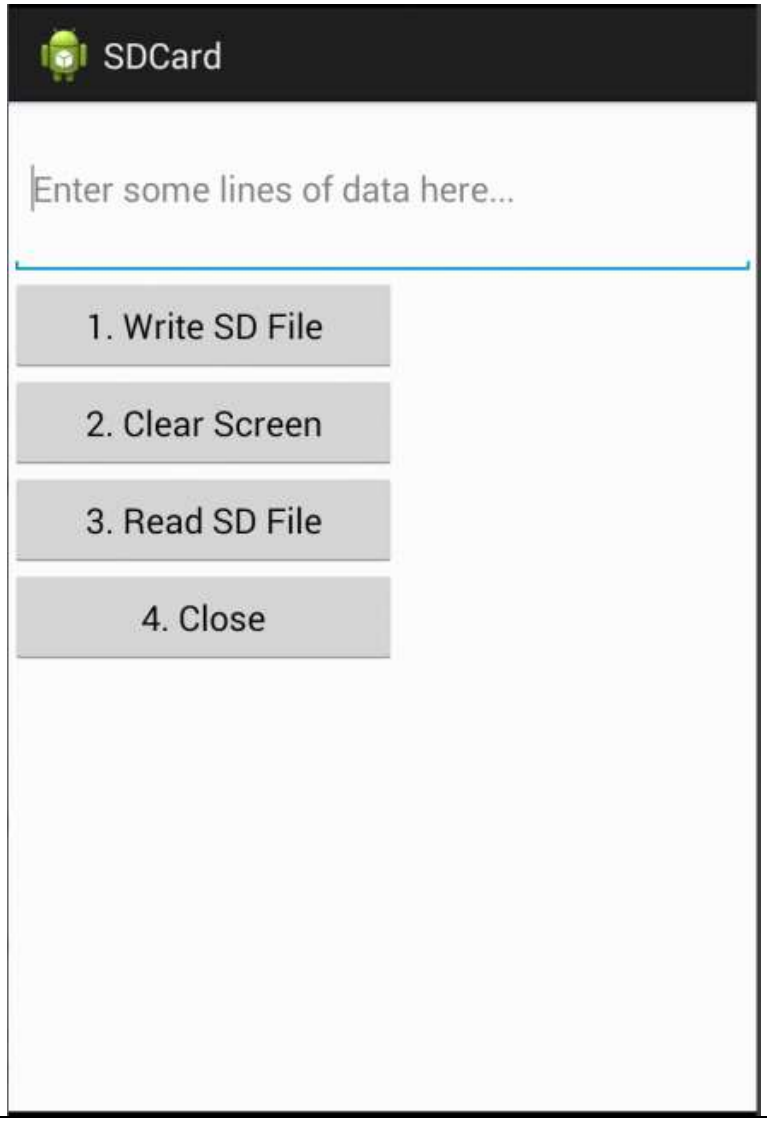
1. Exercise 09: Develop an application that writes data to the SD card

Input	
Output	
Process	

Test cases	Input	Expected Output	Obtained Output

Source Code

Screen Layout



Activity_sdcard.XML

```
<LinearLayout
android:id="@+id/widget28"
android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:orientation="vertical"
xmlns:android="http://schemas.android.com/apk/res/android"
>
<EditText
android:id="@+id/txtData"
android:layout_width="fill_parent"
android:layout_height="180px"
android:textSize="18sp"  />

<Button
android:id="@+id/btnWriteSDFile"
android:layout_width="400px"
android:layout_height="100px"
android:text="1. Write SD File"  />

<Button
android:id="@+id/btnClearScreen"
android:layout_width="400px"
android:layout_height="100px"
android:text="2. Clear Screen"  />

<Button
android:id="@+id/btnReadSDFile"
android:layout_width="400px"
android:layout_height="100px"
android:text="3. Read SD File"  />

<Button
android:id="@+id/btnClose"
android:layout_width="400px"
android:layout_height="100px"
android:text="4. Close" />

</LinearLayout>
```

String.xml

```
--- No change---
```

SDCardActivity.java

```
package com.example.sdcard;

import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import java.io.*;
import android.app.Activity;
```

```
import android.os.Bundle;
import android.view.*;
import android.view.View.OnClickListener;
import android.widget.*;
public class SDCardActivity extends Activity {

      // GUI controls
            EditText txtData;
            Button btnWriteSDFile;
            Button btnReadSDFile;
            Button btnClearScreen;
            Button btnClose;

            @Override
            public void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            setContentView(R.layout.activity_sdcard);
            // bind GUI elements with local controls
            txtData = (EditText) findViewById(R.id.txtData);
            txtData.setHint("Enter some lines of data here...");

            btnWriteSDFile = (Button) findViewById(R.id.btnWriteSDFile);
            btnWriteSDFile.setOnClickListener(new OnClickListener() {

            public void onClick(View v) {
                  // write on SD card file data in the text box
                  try {
                        File myFile = new File("/sdcard/mysdfile.txt");
                        myFile.createNewFile();
                        FileOutputStream fOut = new FileOutputStream(myFile);
                        OutputStreamWriter myOutWriter = new
OutputStreamWriter(fOut);
                        myOutWriter.append(txtData.getText());
                        myOutWriter.close();
                        fOut.close();
                        Toast.makeText(getBaseContext(),
                                    "Done writing SD 'mysdfile.txt'",
                                    Toast.LENGTH_SHORT).show();
                  } catch (Exception e) {
                        Toast.makeText(getBaseContext(), e.getMessage(),
                                    Toast.LENGTH_SHORT).show();
                  }
            }// onClick
            }); // btnWriteSDFile

                  btnReadSDFile = (Button) findViewById(R.id.btnReadSDFile);
                  btnReadSDFile.setOnClickListener(new OnClickListener() {

                  public void onClick(View v) {
                        // write on SD card file data in the text box
                  try {
                        File myFile = new File("/sdcard/mysdfile.txt");
                        FileInputStream fIn = new FileInputStream(myFile);
                        BufferedReader myReader = new BufferedReader(
                                    new InputStreamReader(fIn));
```

```
                        String aDataRow = "";
                        String aBuffer = "";
                        while ((aDataRow = myReader.readLine()) != null) {
                              aBuffer += aDataRow + "\n";
                        }
                        txtData.setText(aBuffer);
                        myReader.close();
                        Toast.makeText(getBaseContext(),
                                    "Done reading SD 'mysdfile.txt'",
                                    Toast.LENGTH_SHORT).show();
                  } catch (Exception e) {
                        Toast.makeText(getBaseContext(), e.getMessage(),
                                    Toast.LENGTH_SHORT).show();
                  }
                  }// onClick
                  }); // btnReadSDFile

                  btnClearScreen = (Button) findViewById(R.id.btnClearScreen);
                  btnClearScreen.setOnClickListener(new OnClickListener() {

                        public void onClick(View v) {
                              // clear text box
                              txtData.setText("");
                        }
                  }); // btnClearScreen

                  btnClose = (Button) findViewById(R.id.btnClose);
                  btnClose.setOnClickListener(new OnClickListener() {

                        public void onClick(View v) {
                              // clear text box
                              finish();
                        }
                  }); // btnClose

            }// onCreate

}
```

Extra Credit
Add internal storage read and write with this SD Card manipulation

I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #9 Laboratory: Basic Graphical Primitives

P24CS1P2 - Mobile Application Development LAB – I MSc CS A

Week #10 Laboratory: Marriage Invitation

Exercise 10: Design a mobile app for marriage Invitation that uses GUI components, Font and colors.

Input	
Output	
Process	

Test cases	Input	Expected Output	Obtained Output

Source Code

Screen Layout

activity_main.XML

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
```

```
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context=".MainActivity" >
 <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="36dp"
        android:text="Jane and Ray"
        android:textSize="20dp"/>
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView1"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="26dp"
        android:text="Request The Pleasure Of Your company at the wedding
      celebration of" />
    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/textView1"
        android:layout_below="@+id/textView2"
        android:layout_marginTop="21dp"
        android:text="Ed Warren"
        android:textSize="25dp"
        android:textStyle="italic"
        android:textAppearance="?android:attr/textAppearanceLarge" />
    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView3"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"
        android:text="AND"
        android:textAppearance="?android:attr/textAppearanceMedium" />
    <TextView
        android:id="@+id/textView5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView4"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="18dp"
        android:text="Lorraine"
        android:textSize="25dp"
        android:textStyle="italic"
        android:textAppearance="?android:attr/textAppearanceLarge" />
    <TextView
        android:id="@+id/textView6"
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/textView2"
        android:layout_below="@+id/textView5"
        android:layout_marginTop="16dp"
        android:text="Saturday October25 at 2 O clock in Afternoon"
        android:textSize="18dp"
        android:textStyle="bold" />
</RelativeLayout>
```

String.xml

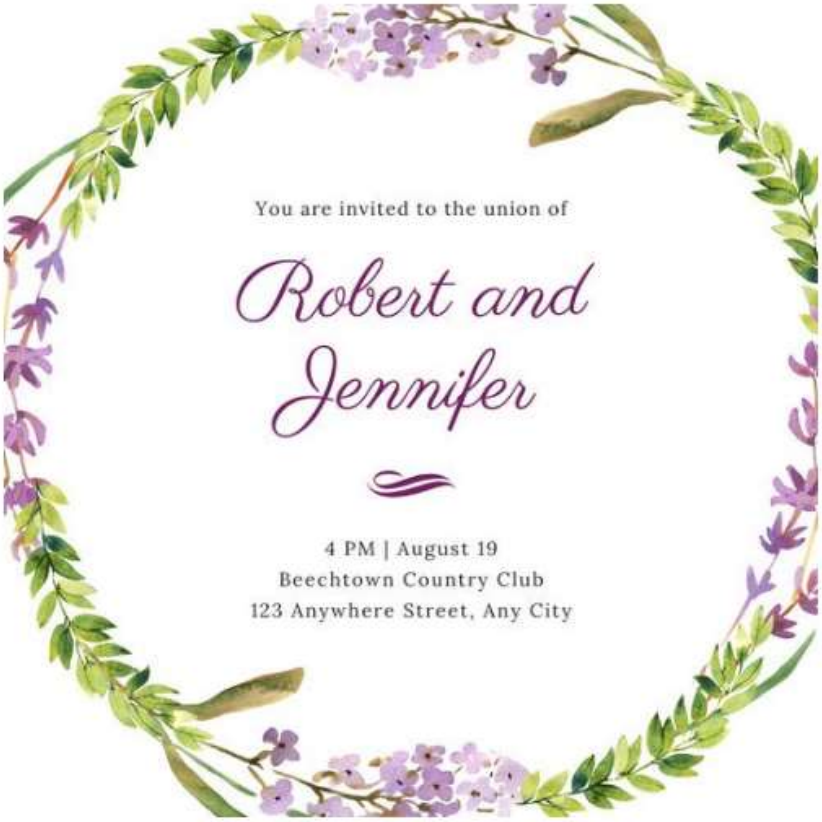
```
--- No change---
```

BusReservationActivity.java

```
--- No change---
```

Extra Credit

Create Marriage Invitation as per the following image



I MSc CS A - P24CS1P2 - Mobile Application Development LAB
Week #6 Laboratory: Bus Ticket Reservation

DEPARTMENT OF COMPUTER SCIENCE (SF I)

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