EXCEL ENGINEERING COLLEGE
(Autonomous)
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KOMARAPALAYAM - 637303

DEPARTMENT OF

INFORMATION TECHNOLOGY

20IT505- MOBILE APPLICATION

DEVELOPMENT LABORATORY

V SEMESTER

Excel

ENGINEERING COLLEGE (AUTONOMOUS)

KOMARAPALAYAM-637 303

DEPARTMENT OF INFORMATION TECHNOLOGY

LABORATORY RECORD NOTE BOOK

This is to certify that bonafide record of work done by _____

Register No._____ Fiveth semester of INFORMATION TECHNOLOGY

branch during the year 2023-2024 in the _____

LABORATORY.

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

Submitted for the Practical Examination held on: _____

**Internal Examiner**   **External Examiner**

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EX NO: 1	**Develop an application that uses GUI components, Font and Colors**
DATE:	

Simple application to change font size and color of textview

1) Open eclipse or android studio and select new android project
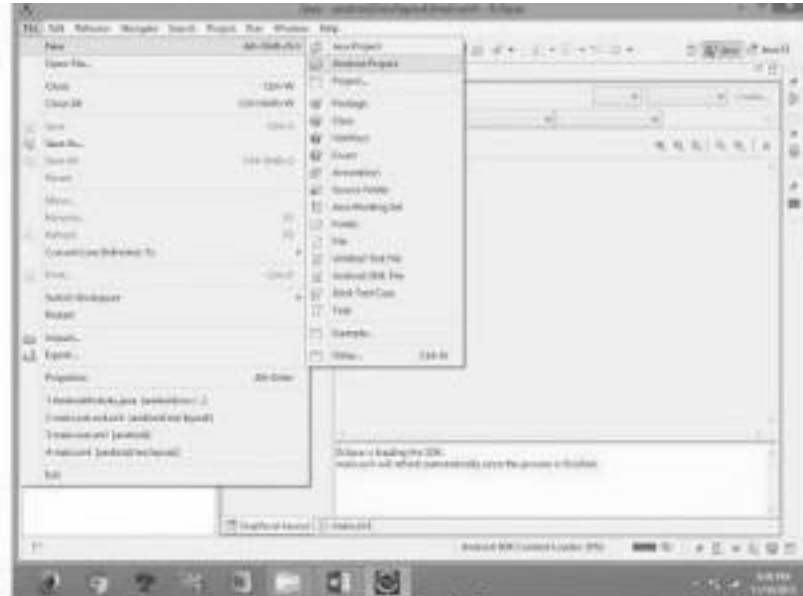
2) Give project name and select next

3) Choose the android version.Choose the lowest android version(Android 2.2) and select next

4) Enter the package name.package name must be two word separated by comma and click finish

5) Go to the package explorer on the left hand side.select our project.

6) Go to res folder and select layout.Double click the main.xml file

7) Now you can see the Graphics layout window.
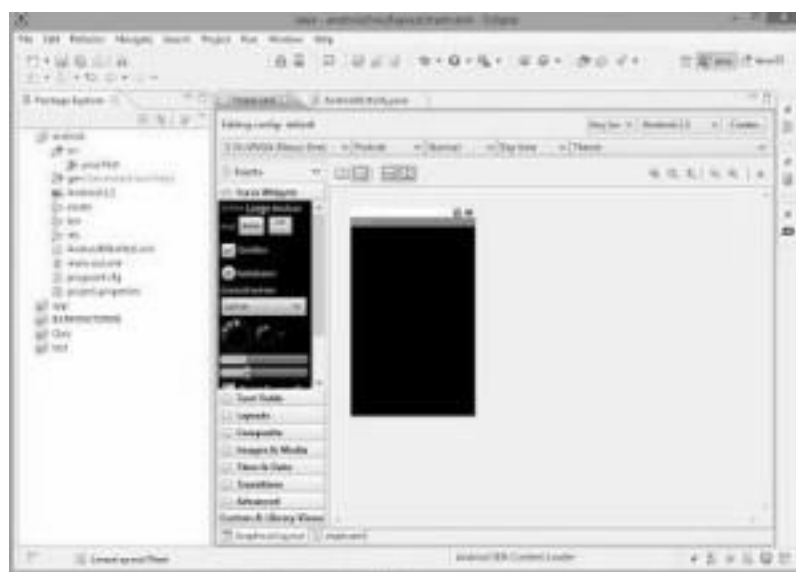
8) Click the main.xml file and type the code below

```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" >
    <TextView
        android:id="@+id/textView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20sp"
        android:gravity="center"
        android:text="HELLO WORLD"
        android:textSize="20sp"
        android:textStyle="bold" />
    <Button
        android:id="@+id/button1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="Change font size"
        android:textSize="20sp" />
    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="Change color"
        android:textSize="20sp" />
    <Button
        android:id="@+id/button3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="Change font"
        android:textSize="20sp" />
</LinearLayout>
```

9) Again click the graphics layout tab and screen layout is look like below

4
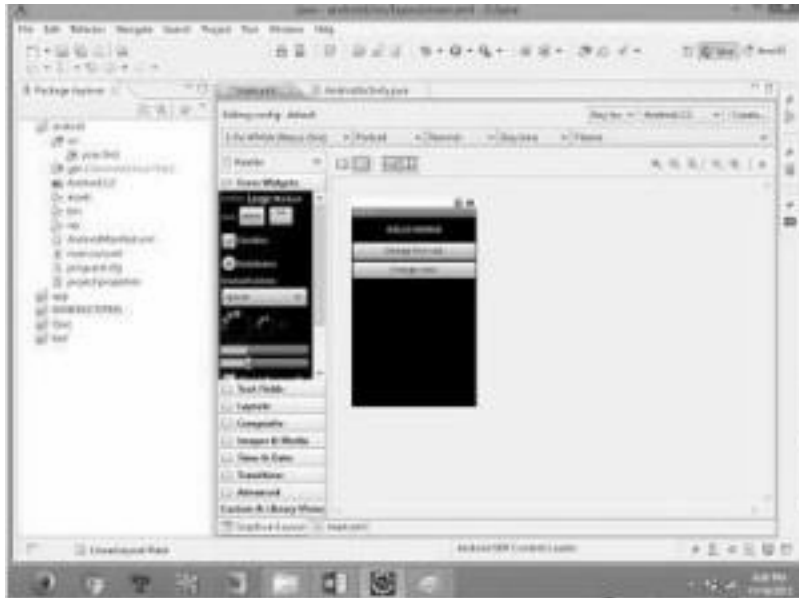
10) Go to project explorer and select src folder.Now select mainactivity.java file and type the following code

PROGRAM

```
//import android.R;
import android.app.Activity;
import android.graphics.Color;
import android.graphics.Typeface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class AndroidActivity extends Activity {
    float font =24;
    int i=1;

    @Override
    public void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);
        final TextView t1=(TextView) findViewById(R.id.textView1);
      Button b1 = (Button) findViewById(R.id.button1);

        b1.setOnClickListener(new View.OnClickListener() {
            public void onClick(View view) {
                t1.setTextSize(font);
                font=font+4;
```

```java
            if(font==40)
                font=20;
        }
    });
    Button b2 = (Button) findViewById(R.id.button2);
    b2.setOnClickListener(new View.OnClickListener() {
        public void onClick(View view) {
            switch(i)
            {
            case 1:
                t1.setTextColor(Color.parseColor("#0000FF"));
                break;
            case 2:
                t1.setTextColor(Color.parseColor("#00FF00"));
                break;
            case 3:
                t1.setTextColor(Color.parseColor("#FF0000"));
                break;
            case 4:
                t1.setTextColor(Color.parseColor("#800000"));
                break;
            }
            i++;
            if(i==5)
                i=1;

        }

    });

}
}
```
11) Now go to main.xml and right click .select run as option and select run configuration

12) Android output is present in the android emulator as shown below.

RESULT :

Thus the android program has been successfully executed.

EX NO: 2	**Develop an application that uses Layout Managers and Event listeners**
DATE:	

1)Open eclipse or android studio and select new android project
2)Give project name and select next
3) Choose the android version.Choose the lowest android version(Android 2.2) and select
next 4) Enter the package name.package name must be two words separated by comma and
click finish 5)Go to package explorer in the left hand side.select our project.
6)Go to res folder and select layout.Double click the main.xml file.Add the code below

```
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/relativeLayout1"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent" >

<LinearLayout
        android:id="@+id/linearLayout1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentRight="true"
        android:layout_alignParentTop="true" >

        <TextView
          android:layout_width="wrap_content"
          android:layout_height="wrap_content"
          android:layout_gravity="center"
          android:text="ADDITION"
          android:textSize="20dp" >

        </TextView>
      </LinearLayout>
<LinearLayout
    android:id="@+id/linearLayout2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/linearLayout1" >
    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="ENTER NO 1" >
    </TextView>
<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
      android:layout_weight="0.20"
      android:id="@+id/edittext1"
      android:inputType="number">
    </EditText>
</LinearLayout>

<LinearLayout
    android:id="@+id/linearLayout3"
    android:layout_width="wrap_contnt"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/linearLayou 2" >
    <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="ENTER NO 2" >
    </TextView>
<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="0.20"
    android:id="@+id/edittext2"
    android:inputType="number">
    </EditText>
</LinearLayout>

<LinearLayout
    android:id="@+id/linearLayout4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/linearLayout3" >

<Button
      android:layout_width="wrap_content"
      android:id="@+id/button1"
      android:layout_height="wrap_content"
      android:text="Addition"
      android:layout_weight="0.50" />
<Button
      android:layout_width="wrap_content"
      android:id="@+id/button3"
      android:layout_height="wrap_content"
      android:text="subtraction"
      android:layout_weight="0.50" />
```

```xml
<Button
    android:layout_width="wrap_content"
    android:id="@+id/button2"
    android:layout_height="wrap_content"
    android:text="CLEAR"
    android:layout_weight="0.50" />
</LinearLayout>

<View
        android:layout_height="2px"
        android:layout_width="fill_parent"
        android:layout_below="@+id/linearLayout4"
        android:background="#DDFFDD"/>
</RelativeLayout>
```

7) Now select mainactivity.java file and type the following code.
```java
package layout.ne;


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

public class LAYOUTActivity extends Activity {
  /** Called when the activity is first created. */
  EditText txtData1,txtData2;
  float num1,num2,result1,result2;
  @Override
  public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.main);


    Button add = (Button) findViewById(R.id.button1);
    add.setOnClickListener(new OnClickListener() {
    public void onClick(View v) {
      try
      {
        txtData1 = (EditText) findViewById(R.id.edittext1);
          txtData2 = (EditText) findViewById(R.id.edittext2);
        num1 = Float.parseFloat(txtData1.getText().toString());
        num2 = Float.parseFloat(txtData2.getText().toString());
      result1=num1+num2;

Toast.makeText(getBaseContext(),"ANSWER:"+result1,Toast.LENGTH_SHORT).show();
```

```java
          }
        catch(Exception e)
        {
          Toast.makeText(getBaseContext(), e.getMessage(),
              Toast.LENGTH_SHORT).show();
        }
      }
    });
    Button sub = (Button) findViewById(R.id.button3);
    sub.setOnClickListener(new OnClickListener() {

    public void onClick(View v) {
      try
      {
          txtData1 = (EditText) findViewById(R.id.edittext1);
          txtData2 = (EditText) findViewById(R.id.edittext2);
        num1 = Float.parseFloat(txtData1.getText().toString());
        num2 = Float.parseFloat(txtData2.getText().toString());
         result2=num1-num2;

Toast.makeText(getBaseContext(),"ANSWER:"+result2,Toast.LENGTH_SHORT).sho
      w(); }
      catch(Exception e)
      {
        Toast.makeText(getBaseContext(), e.getMessage(),
            Toast.LENGTH_SHORT).show();
      }
    }
    });

    Button clear = (Button) findViewById(R.id.button2);
    clear.setOnClickListener(new OnClickListener() {

    public void onClick(View v) {
      try
      {
      txtData1.setText("");
      txtData2.setText("");
      }
      catch(Exception e)
      {
        Toast.makeText(getBaseContext(), e.getMessage(),
            Toast.LENGTH_SHORT).show();
    }}
    });

  }
}
```

8)Now go to main.xml and right click .select run as option and select run configuration

9) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed.

Main.xml coding

```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:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/linearLayout1"
android:layout_marginLeft="10pt"
android:layout_marginRight="10pt"
android:layout_marginTop="3pt">
<EditText
android:layout_weight="1"
android:layout_height="wrap_content"
android:layout_marginRight="5pt"
android:id="@+id/etNum1"
android:layout_width="match_parent"
android:inputType="numberDecimal">
</EditText>
<EditText
android:layout_height="wrap_content"
android:layout_weight="1"
android:layout_marginLeft="5pt"
android:id="@+id/etNum2"
android:layout_width="match_parent"
android:inputType="numberDecimal">
</EditText>
</LinearLayout>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/linearLayout2"
android:layout_marginTop="3pt"
android:layout_marginLeft="5pt"
android:layout_marginRight="5pt">
<Button
android:layout_height="wrap_content"
android:layout_width="match_parent"
```

```xml
        android:layout_weight="1"
        android:text="+"
        android:textSize="15pt"
        android:id="@+id/btnAdd">
    </Button>
    <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="-"
        android:textSize="15pt"
        android:id="@+id/btnSub">
    </Button>
    <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="*"
        android:textSize="15pt"
        android:id="@+id/btnMult">
    </Button>
    <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="/"
        android:textSize="15pt"
        android:id="@+id/btnDiv">
    </Button>
    </LinearLayout>
    <TextView
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_marginLeft="5pt"
        android:layout_marginRight="5pt"
        android:textSize="12pt"
        android:layout_marginTop="3pt"
        android:id="@+id/tvResult"
        android:gravity="center_horizontal">
    </TextView>
    </LinearLayout>
```

MainActivity.java coding

```java
package CALCU.CALU;

import android.app.Activity;
```

```java
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class CALCULATORActivity extends Activity implements
    OnClickListener {  EditText input1;
    EditText input2;

    Button addition;
    Button subtraction;
    Button multiplication;
    Button division;

    TextView tvResult;

    String oper = "";

  @Override
  public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.main);
     input1 = (EditText) findViewById(R.id.etNum1);
     input2 = (EditText) findViewById(R.id.etNum2);

     addition = (Button) findViewById(R.id.btnAdd);
     subtraction = (Button) findViewById(R.id.btnSub);
     multiplication = (Button) findViewById(R.id.btnMult);
     division = (Button) findViewById(R.id.btnDiv);

     tvResult = (TextView) findViewById(R.id.tvResult);

     // set a listener
     addition.setOnClickListener(this);
     subtraction.setOnClickListener(this);
     multiplication.setOnClickListener(this);
     division.setOnClickListener(this);

   }

   @Override
   public void onClick(View v) {
     // TODO Auto-generated method stub
```

```java
    float num1 = 0;
    float num2 = 0;
    float result = 0;

    // check if the fields are empty
    if (TextUtils.isEmpty(input1.getText().toString())
        || TextUtils.isEmpty(input2.getText().toString())) {
     return;
     }

    // read EditText and fill variables with numbers
    num1 = Float.parseFloat(input1.getText().toString());
    num2 = Float.parseFloat(input2.getText().toString());

    // defines the button that has been clicked and performs the corresponding
    operation // write operation into oper, we will use it later for output
    switch (v.getId()) {
    case R.id.btnAdd:
      oper = "+";
      result = num1 + num2;
      break;
    case R.id.btnSub:
      oper = "-";
      result = num1 - num2;
      break;
    case R.id.btnMult:
      oper = "*";
      result = num1 * num2;
      break;
    case R.id.btnDiv:
      oper = "/";
      result = num1 / num2;
      break;
    default:
      break;
     }

    // form the output line
    tvResult.setText(num1 + " " + oper + " " + num2 + " = " + result);
    }

}
```

Output

RESULT

Thus the android program has been successfully executed.

EX NO: 4	Write an application that draws basic graphical primitives on the
DATE:	screen in android

1. Open eclipse or android studio and select new android project
2. Give project name and select next
3. Choose the android version. Choose the lowest android version(Android 2.2) andselect next
4. Enter the package name. Package name must be two word separated by comma andclick finish
5. Go to package explorer on the left hand side. Select our project.
6. Go to the res folder and select layout. Double click the main.xml file. Don't changeanything in layout. Leave as default.
7. Now select mainactivity.java file and type the following code.

```java
package Basic.primitive;
import android.app.Activity;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.view.View;

public class BasicprimitiveActivity extends Activity {
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(new myview(this));
            }
    private class myview extends View
    {
        public myview(Context context)
        {
        super(context);
        }
        @Override

        protected void onDraw(Canvas canvas)
        {
            super.onDraw(canvas);
            Paint paint=new Paint();
            paint.setTextSize(40);
            paint.setColor(Color.GREEN);
            canvas.drawText("Circle", 55, 30, paint);
```
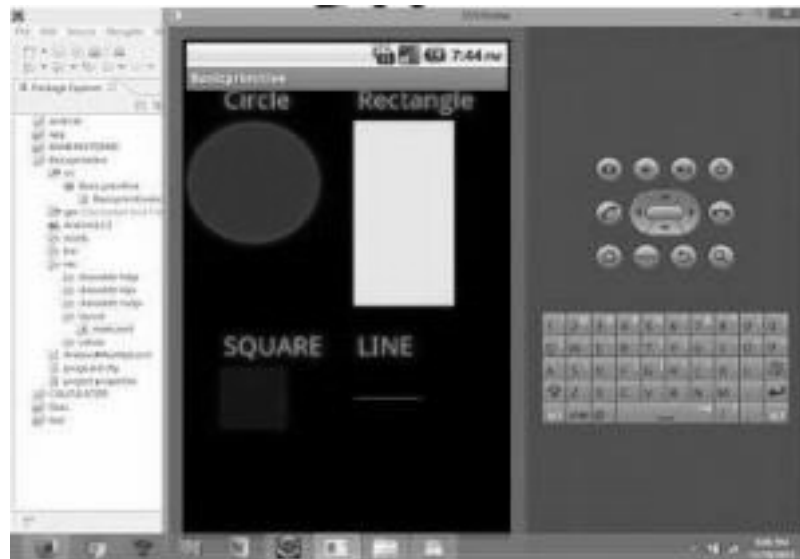
```
        paint.setColor(Color.RED);
        canvas.drawCircle(100, 150,100, paint);
        paint.setColor(Color.GREEN);
        canvas.drawText("Rectangle", 255, 30, paint);
        paint.setColor(Color.YELLOW);
        canvas.drawRect(250, 50,400,350, paint);
        paint.setColor(Color.GREEN);
        canvas.drawText("SQUARE", 55, 430, paint);
        paint.setColor(Color.BLUE);
        canvas.drawRect(50, 450,150,550, paint);
        paint.setColor(Color.GREEN);
        canvas.drawText("LINE", 255, 430, paint);
        paint.setColor(Color.CYAN);
        canvas.drawLine(250, 500, 350, 500, paint);
        }
      }
 }
```

8) Now go to main.xml and right click .select run as option and select run configuration

9) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed.

1)Open eclipse or android studio and select new android project

2)Give project name and select next

3) Choose the android version.Choose the lowest android version(Android 2.2) and select next

4) Enter the package name.package name must be two word separated by comma and click finish

5)Go to the package explorer on the left hand side.select our project.

6)Go to res folder and select layout.Double click the main.xml file.Add the code below

```xml
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        android:id="@+id/myLayout"
        android:stretchColumns="0"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent">
    <TextView android:text="@string/title"
        android:layout_x="110dp"
        android:layout_y="10dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
    <TextView android:text="@string/empid"
        android:layout_x="30dp"
        android:layout_y="50dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
    <EditText android:id="@+id/editEmpid"
        android:inputType="number"
        android:layout_x="150dp"
        android:layout_y="50dp"
        android:layout_width="150dp"
        android:layout_height="40dp"/>
    <TextView android:text="@string/name"
        android:layout_x="30dp"
        android:layout_y="100dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
    <EditText android:id="@+id/editName"
        android:inputType="text"
        android:layout_x="150dp"
        android:layout_y="100dp"
        android:layout_width="150dp"
        android:layout_height="40dp"/>
    <TextView android:text="@string/salary"
        android:layout_x="30dp"
        android:layout_y="150dp"
        android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"/>
    <EditText android:id="@+id/editsalary"
        android:inputType="number"
        android:layout_x="150dp"
        android:layout_y="150dp"
        android:layout_width="150dp"
        android:layout_height="40dp"/>
    <Button android:id="@+id/btnAdd"
        android:text="@string/add"
        android:layout_x="30dp"
        android:layout_y="200dp"
        android:layout_width="130dp"
        android:layout_height="40dp"/>
    <Button android:id="@+id/btnDelete"
        android:text="@string/delete"
        android:layout_x="160dp"
        android:layout_y="200dp"
        android:layout_width="130dp"
        android:layout_height="40dp"/>n
    <Button android:id="@+id/btnModify"
        android:text="@string/modify"
        android:layout_x="30dp"
        android:layout_y="250dp"
        android:layout_width="130dp"
        android:layout_height="40dp"/>
    <Button android:id="@+id/btnView"
        android:text="@string/view"
        android:layout_x="160dp"
        android:layout_y="250dp"
        android:layout_width="130dp"
        android:layout_height="40dp"/>
    <Button android:id="@+id/btnViewAll"
        android:text="@string/view_all"
        android:layout_x="85dp"
        android:layout_y="300dp"
        android:layout_width="150dp"
        android:layout_height="40dp"/>

</AbsoluteLayout>
```

7) Go to values folder and select string.xml file.Replace the code

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

    <string name="app_name">Employee detail1</string>
    <string name="hello">Hello World, Employee detail Activity!</string>
```

```xml
<string name="title">Employee Details</string>
<string name="empid">Enter Employee ID: </string>
<string name="name">Enter Name: </string>
<string name="salary">Enter salary: </string>
<string name="add">Add Employee</string>
<string name="delete">Delete Employee</string>
<string name="modify">Modify Employee</string>
<string name="view">View Employee</string>
<string name="view_all">View All Employee</string>

</resources>
```
8) Now select mainactivity.java file and type the following code.In my coding mainactivity
name is EmployeedetailActivity.

```java
package employee.detail;
//import android.R;
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 EmployeedetailActivity extends Activity implements
    OnClickListener { EditText editEmpid,editName,editsalary;
    Button btnAdd,btnDelete,btnModify,btnView,btnViewAll;
    SQLiteDatabase db;
    /** Called when the activity is first created. */
     @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);
        editEmpid=(EditText)findViewById(R.id.editEmpid);
        editName=(EditText)findViewById(R.id.editName);
        editsalary=(EditText)findViewById(R.id.editsalary);
        btnAdd=(Button)findViewById(R.id.btnAdd);
        btnDelete=(Button)findViewById(R.id.btnDelete);
        btnModify=(Button)findViewById(R.id.btnModify);
        btnView=(Button)findViewById(R.id.btnView);
        btnViewAll=(Button)findViewById(R.id.btnViewAll);
        btnAdd.setOnClickListener(this);
        btnDelete.setOnClickListener(this);
```

```
      btnModify.setOnClickListener(this);
      btnView.setOnClickListener(this);
      btnViewAll.setOnClickListener(this);
      db=openOrCreateDatabase("EmployeeDB", Context.MODE_PRIVATE, null);
db.execSQL("CREATE TABLE IF NOT EXISTS employee(empid VARCHAR,name
VARCHAR,salary VARCHAR);");
   }
   public void onClick(View view)
   {
     if(view==btnAdd)
     {
       if(editEmpid.getText().toString().trim().length()==0||
         editName.getText().toString().trim().length()==0||
         editsalary.getText().toString().trim().length()==0)
       {
         showMessage("Error", "Please enter all values");
         return;
       }
       db.execSQL("INSERT INTO employee
VALUES('"+editEmpid.getText()+"','"+editName.getText()+
             "','"+editsalary.getText()+"');");
       showMessage("Success", "Record added");
       clearText();
     }
     if(view==btnDelete)
     {
       if(editEmpid.getText().toString().trim().length()==0)
       {
         showMessage("Error", "Please enter Employee id");
         return;
       }
       Cursor c=db.rawQuery("SELECT * FROM employee WHERE
empid='"+editEmpid.getText()+"'", null);
       if(c.moveToFirst())
       {
         db.execSQL("DELETE FROM employee WHERE
empid='"+editEmpid.getText()+"'");
         showMessage("Success", "Record Deleted");
       }
       else
       {
         showMessage("Error", "Invalid Employee id");
       }
       clearText();
     }
     if(view==btnModify)
```

```java
{
    if(editEmpid.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Employee id");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM employee
WHERE  empid='"+editEmpid.getText()+"'", null);
    if(c.moveToFirst())
    {
        db.execSQL("UPDATE employee SET
name='"+editName.getText()+"',salary='"+editsalary.getTex
            t()+ "' WHERE
            empid='"+editEmpid.getText()+"'");
        showMessage("Success", "Record Modified");
    }
    else
    {
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
if(view==btnView)
{
    if(editEmpid.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Employee id");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM employee
WHERE  empid='"+editEmpid.getText()+"'", null);
    if(c.moveToFirst())
    {
        editName.setText(c.getString(1));
        editsalary.setText(c.getString(2));
    }
    else
    {
        showMessage("Error", "Invalid Employee id");
        clearText();
    }
}
if(view==btnViewAll)
{
    Cursor c=db.rawQuery("SELECT * FROM employee",
    null);  if(c.getCount()==0)
    {
```

```
          showMessage("Error", "No records found");
          return;
        }
        StringBuffer buffer=new StringBuffer();
        while(c.moveToNext())
        {
          buffer.append("Employee id: "+c.getString(0)+"\n");
          buffer.append("Name: "+c.getString(1)+"\n");
          buffer.append("salary: "+c.getString(2)+"\n\n");
        }
        showMessage("Employee details 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()
  {
    editEmpid.setText("");
    editName.setText("");
    editsalary.setText("");
    editEmpid.requestFocus();
  }
}
```
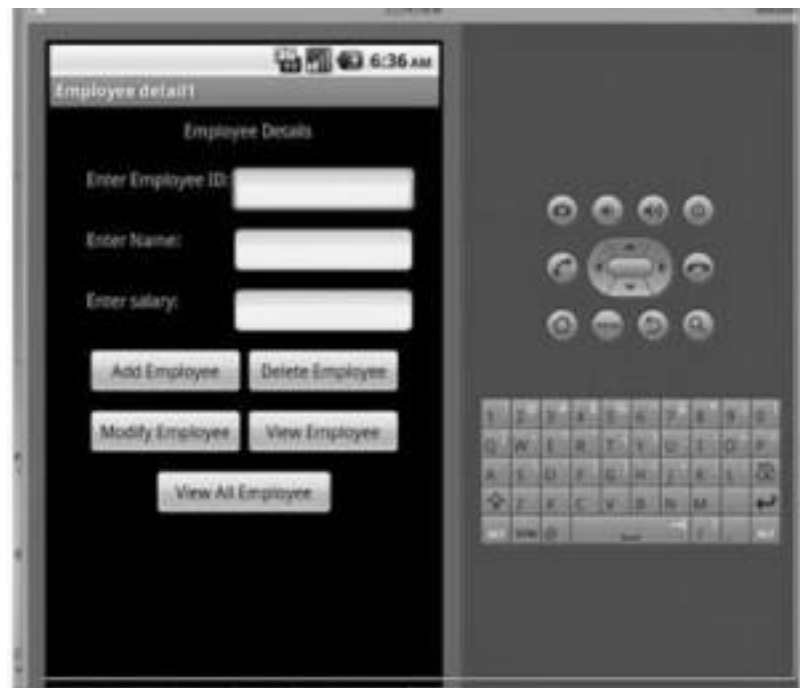9) Now go to main.xml and right click .select run as option and select run configuration

10) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed

1)Open eclipse or android studio and select new android project
2)Give project name and select next
3) Choose the android version.Choose the lowest android version(Android 2.2) and select
next 4) Enter the package name.package name must be two word separated by comma and
click finish 5)Go to package explorer in the left hand side.select our project.
6)Go to res folder and select layout.Double click the main.xml file.Add the code below

```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"
   android:id="@+id/info" >
    <Button
      android:id="@+id/button1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:onClick="fetchData"
      android:text="Start MULTITHREAD" />
   <TextView
      android:id="@+id/textView1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Main thread" />
</LinearLayout>
```

7) Now select mainactivity.java file and type the following code.

```java
package multi.threading;

//import your.first.R;
import android.app.Activity;
import  android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.TextView;

public class MultiThreadingActivity extends Activity {
   private TextView tvOutput;
   private static final int t1 = 1;
   private static final int t2 = 2;
   private static final int t3 = 3;
   @Override
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.main);
```

```java
        tvOutput = (TextView) findViewById(R.id.textView1);

 }
public void fetchData(View v) {
    tvOutput.setText("Main thread");
    thread1.start();
    thread2.start();
    thread3.start();
 }

Thread thread1 = new Thread(new Runnable() {

 @Override
public void run() {
for (int i = 0; i < 5; i++) {
try {
Thread.sleep(1000);
 } catch (InterruptedException e) {
e.printStackTrace();
 }
handler.sendEmptyMessage(t1);
 }

 }
});
Thread thread2 = new Thread(new Runnable() {

   @Override
   public void run() {
   for (int i = 0; i < 5; i++) {
   try {
   Thread.sleep(1000);
    } catch (InterruptedException e) {
   e.printStackTrace();
    }
   handler.sendEmptyMessage(t2);
    }

    }
    });
Thread thread3 = new Thread(new Runnable() {

   @Override
   public void run() {
   for (int i = 0; i < 5; i++) {
   try {
```

```
        Thread.sleep(1000);
         } catch (InterruptedException e) {
        e.printStackTrace();
         }
        handler.sendEmptyMessage(t3);
         }


         }
        });

    Handler handler = new Handler() {
    public void handleMessage(android.os.Message msg) {
    if(msg.what == t1) {
    tvOutput.append("\nIn thread 1");
     }
    if(msg.what == t2) {
       tvOutput.append("\nIn thread 2");
        }
    if(msg.what == t3) {
       tvOutput.append("\nIn thread 3");
        }
     }
     };

 }
```

8) Now go to main.xml and right click .select run as option and select run configuration

9) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed

1)Open eclipse or android studio and select new android project

2)Give project name and select next

3) Choose the android version.Choose the lowest android version(Android 2.2) and select next

4) Enter the package name.package name must be two word separated by comma and click finish

5)Go to the package explorer on the left hand side.select our project.

6)Go to res folder and select layout.Double click the main.xml file.Add the code below

```xml
<?xml version="1.0" encoding="utf-8"?>
  <RelativeLayout
     xmlns:android="http://schemas.android.com/apk/res/android"
     android:id="@+id/relativeLayout1"
     android:layout_width="match_parent"
     android:layout_height="match_parent" >
<Button
   android:id="@+id/show_Location"
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Show_Location"
   android:layout_centerVertical="true"
   android:layout_centerHorizontal="true"
   />
</RelativeLayout>
```

7) Now select mainactivity.java file and type the following code.In my coding mainactivity name is GPSlocationActivity.

```java
package gps.location;

//import android.R;
import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class GPSlocationActivity extends Activity {
   /** Called when the activity is first created. */
   Button btnShowLocation;
   GPStrace gps;
   @Override
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.main);
      btnShowLocation=(Button)findViewById(R.id.show_Location);
```

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```java
    btnShowLocation.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        // TODO Auto-generated method stub
        gps=new GPStrace(GPSlocationActivity.this);
        if(gps.canGetLocation()){
          double latitude=gps.getLatitude();
          double longitude=gps.getLongtiude();
          Toast.makeText(getApplicationContext(),"Your Location is
\nLat:"+latitude"\nLong:"+longitude, Toast.LENGTH_LONG).show();
        }
        else
        {
          gps.showSettingAlert();
        }


      }
    });
  }
}
```

8) Go to src folder and Right Click on your package folder and choose new class and give the class name as GPStrace
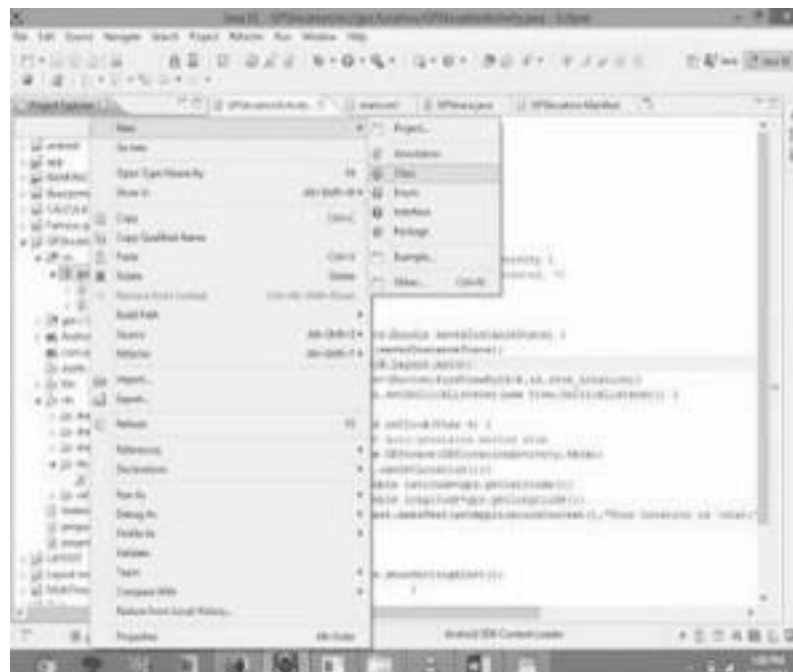
9) Select the GPStrace.java file and paste the following code.

```java
package gps.location;

import android.app.AlertDialog;
import android.app.Service;
import android.content.Context;
import android.content.DialogInterface;
import android.content.Intent;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.os.IBinder;
import android.provider.Settings;

public class GPStrace extends Service implements LocationListener{
private final Context context;
boolean isGPSEnabled=false;
boolean canGetLocation=false;
boolean isNetworkEnabled=false;
Location location;
double  latitude;
double longitude;
private static final long
MIN_DISTANCE_CHANGE_FOR_UPDATES=10; private static final
long MIN_TIME_BW_UPDATES=1000*60*1;
protected LocationManager locationManager;
public GPStrace(Context context)
{
   this.context=context;
   getLocation();
}
public Location getLocation()
{
   try{
      locationManager=(LocationManager)
      context.getSystemService(LOCATION_SERVICE);
      isGPSEnabled=locationManager.isProviderEnabled(LocationManager.GPS_PROVIDE
      R);

 isNetworkEnabled=locationManager.isProviderEnabled(LocationManager.NETWORK_PRO
VI DER);
      if(!isGPSEnabled && !isNetworkEnabled){

      }else{
         this.canGetLocation=true;
         if(isNetworkEnabled){

             locationManager.requestLocationUpdates(
```

```java
                    LocationManager.NETWORK_PROVIDER,
                    MIN_TIME_BW_UPDATES,
                    MIN_DISTANCE_CHANGE_FOR_UPDATES,this);

            }


            if(locationManager!=null){

location=locationManager.getLastKnownLocation(LocationManager.NETWORK_PROVID
ER) ;
                if(location !=null){
                    latitude=location.getLatitude();
                    longitude=location.getLongitude();


                }
            }
        }
        if(isGPSEnabled){
            if(location==null){

locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER,MIN_TIME
_B W_UPDATES, MIN_DISTANCE_CHANGE_FOR_UPDATES, this);
                if(locationManager!=null){

location=locationManager.getLastKnownLocation(LocationManager.GPS_PROVIDE
                R);  if(location!=null){
                    latitude=location.getLatitude();
                    longtitude=location.getLongitude();
                }
                }
            }
        }
    }

    catch(Exception e)
    {
        e.printStackTrace();
    }
    return location;
}
public void stopUsingGPS(){
    if(locationManager!=null){
        locationManager.removeUpdates(GPStrace.this);
    }
}
public double getLatitude(){
    if(location!=null){
        latitude=location.getLatitude();
    }
```

```java
     return latitude;
  }
  public double getLongitude(){


     if(location!=null){
        longitude=location.getLatitude();
     }
     return longitude;
  }
  public boolean canGetLocation(){
     return this.canGetLocation;
  }
  public void showSettingAlert(){
     AlertDialog.Builder alertDialog=new
     AlertDialog.Builder(context);  alertDialog.setTitle("GPS is
     settings");
     alertDialog.setMessage("GPS is not enabled.Do you want to go to setting
     menu?"); alertDialog.setPositiveButton("settings", new
     DialogInterface.OnClickListener() { @Override
        public void onClick(DialogInterface dialog,int which){
           Intent intent=new
           Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
           context.startActivity(intent);
        }
     });
     alertDialog.setNegativeButton("cancel", new DialogInterface.OnClickListener() {


        @Override
        public void onClick(DialogInterface dialog, int which) {
           // TODO Auto-generated method stub
           dialog.cancel();
        }
     });
     alertDialog.show();
     }
  @Override
  public void onLocationChanged(Location location) {
     // TODO Auto-generated method stub


  }
  @Override
  public void onProviderDisabled(String provider) {
     // TODO Auto-generated method stub


  }
  @Override
  public void onProviderEnabled(String provider) {
     // TODO Auto-generated method stub
     }@Override
```

```java
public void onStatusChanged(String provider, int status, Bundle
    extras) { // TODO Auto-generated method stub

 }
 @Override
 public IBinder onBind(Intent intent) {
    // TODO Auto-generated method stub
    return null;
 }
}
```
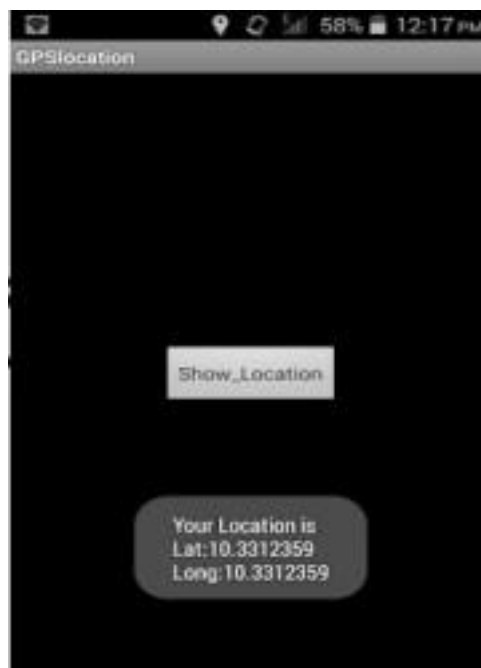
10) Go to manifest.xml file and add the code below


```xml
<uses-permission
    android:name="android.permission.ACCESS_FINE_LOCATIO
N"/> <uses-permission
    android:name="android.permission.INTERNET"/>
```

11) Now go to main.xml and right click .select run as option and select run configuration 12) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed.

1)Open eclipse or android studio and select new android project

2)Give project name and select next

3) Choose the android version.Choose the lowest android version(Android 2.2) and select next

4) Enter the package name.package name must be two word separated by comma and click finish

5)Go to the package explorer on the left hand side.select our project.

6)Go to res folder and select layout.Double click the main.xml fileAdd the code below

```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:background="#ff0000ff"
    android:orientation="vertical" >

    <EditText
        android:id="@+id/editText1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >

        <requestFocus />
    </EditText>

    <Button
        android:id="@+id/button1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="SAVE DATA" />


    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="SHOW DATA" />

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        />

</LinearLayout>
```

7) Now select mainactivity.java file and type the following code.

```
package save.sd;

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

public class SavedatasdcardActivity extends Activity {
   /** Called when the activity is first created. */
   Button save,load;
   EditText message;
   TextView t1;
   String Message1;
   @Override
   public void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.main);
      save=(Button) findViewById(R.id.button1);
      load=(Button) findViewById(R.id.button2);
      message=(EditText) findViewById(R.id.editText1);
      t1=(TextView) findViewById(R.id.textView1);
      save.setOnClickListener(new View.OnClickListener(){
         public void onClick(View v){
            //Get message from user store in message1 variable
            Message1 =message.getText().toString();
            try{
               //Create a new folder called MyDirectory in SDCard
               File sdcard=Environment.getExternalStorageDirectory();
               File directory=new
               File(sdcard.getAbsolutePath()+"/MyDirectory");
               directory.mkdirs();
               //Create a new file name textfile.txt inside MyDirectory
               File file=new File(directory,"textfile.txt");
               //Create File Outputstream to read the file
               FileOutputStream fou=new FileOutputStream(file);
                  OutputStreamWriter osw=new OutputStreamWriter(fou);
```

```java
            try{
                //write a user data to file
                osw.append(Message1);
                osw.flush();
                osw.close();
                Toast.makeText(getBaseContext(),"Data
Saved",Toast.LENGTH_LONG).show();

            }catch(IOException e){
                e.printStackTrace();
            }
        }catch (FileNotFoundException e){
            e.printStackTrace();
        }
    }
});
load.setOnClickListener(new View.OnClickListener(){
        public void onClick(View v){
         try{
          File sdcard=Environment.getExternalStorageDirectory();
          File directory=new
           File(sdcard.getAbsolutePath()+"/MyDirectory");  File file=new
           File(directory,"textfile.txt");
           FileInputStream fis=new FileInputStream(file);
          InputStreamReader isr=new InputStreamReader(fis);
          char[] data=new char[100];
          String final_data="";
          int size;
          try{
             while((size=isr.read(data))>0)
             {
                //read a data from file
                String read_data=String.copyValueOf(data,0,size);
                final_data+=read_data;
                data=new char[100];
             }
             //display the data in output

Toast.makeText(getBaseContext(),"Message:"+final_data,Toast.LENGTH_LONG).sho
             w(); }catch(IOException e){
                 e.printStackTrace();
             }
         }catch (FileNotFoundException e){
           e.printStackTrace();
         }
      }
   });
```

```
        }
    }
```

8) Next step is to set permission to write data in the SD card. So go to the AndroidManifest.xml file. Copy and paste the following coding.The code should come before <application> tab.

```
<uses-permission
android:name="android.permission.WRITE_EXTERNAL_STORAGE"></uses-permission>
```

9) Now go to main.xml and right click .select run as option and select run

configuration

10) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed

1)Open eclipse or android studio and select new android project

2)Give project name and select next

3) Choose the android version.Choose the lowest android version(Android 2.2) and selectnext 4) Enter the package name.package name must be two word separated by comma and click finish. 5)Go to package explorer in the left hand side.select ourproject. 6)Go to res folder and select layout.Double click the main.xml file.Add the code below

```xml
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:scrollbars="vertical" >
<TableLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:shrinkColumns="*" android:stretchColumns="*"
android:background="#000000">
            <TableRow
               android:layout_height="wrap_content"
               android:layout_width="match_parent"
               android:gravity="center_horizontal">
            <TextView
    android:id="@+id/Title"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_margin="5px"
    android:focusable="false"
    android:focusableInTouchMode="false"
    android:gravity="center_vertical|center_horizontal"
    android:text="QUIZ"
    android:textSize="25sp"
    android:textStyle="bold" />
            <View
        android:layout_height="2px"
        android:layout_marginTop="5dip"
        android:layout_marginBottom="5dip"
        android:background="#DDFFDD"/>
            </TableRow>
```

```xml
        <TableRow
          android:layout_height="wrap_cont
          ent"
          android:layout_width="match_pare
          nt"
          android:gravity="center_horizontal">
          <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_cont
            ent" android:textSize="18sp"
            android:text="1.CAPTIAL OF INDIA"
            android:layout_span="4"
            android:padding="18dip"
            android:textColor="#ffffff"/>
        </TableRow>
        <TableRow
          android:id="@+id/tableRow1"
          android:layout_height="wrap_content"
          android:layout_width="match_pare
nt"> <RadioGroup
  android:id="@+id/answer1"
  android:layout_width="match_parent"
  android:layout_height="wrap_cont
  ent"  android:layout_weight="0.4"
  >
  <RadioButton
    android:id="@+id/answer1A"
    android:layout_width="match_parent"
    android:layout_height="wrap_conte
    nt" android:textColor="#ffffff"
    android:text="CHENNAI" />
  <RadioButton
    android:id="@+id/answer1B"
    android:layout_width="match_parent"
    android:layout_height="wrap_conte
    nt" android:textColor="#ffffff"
    android:text="NEW DELHI" />
  <RadioButton
    android:id="@+id/answer1C"
    android:layout_width="match_parent"
    android:layout_height="wrap_conte
    nt" android:textColor="#ffffff"
    android:text="MUMBAI" />
  <RadioButton
    android:id="@+id/answer1D"
```

```
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:textColor="#ffffff"
                android:text="HYDERABAD" />
        </RadioGroup>
            </TableRow>
          <TableRow
              android:layout_height="wrap_content"
              android:layout_width="match_parent"
              android:gravity="center_horizontal">
              <TextView
                android:layout_width="match_parent"
                android:layout_height="wrap_content" android:textSize="18sp"
                android:text="2. CAPITAL OF RUSSIA?" android:layout_span="4"
                android:padding="18dip"
                android:textColor="#ffffff"/>
          </TableRow>
           <TableRow
              android:id="@+id/tableRow2"
              android:layout_height="wrap_content"
              android:layout_width="match_parent">
              <RadioGroup
        android:id="@+id/answer2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="0.4" >
        <RadioButton
          android:id="@+id/answer2A"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          android:textColor="#ffffff"
          android:text="WARSAW " />
        <RadioButton
          android:id="@+id/answer2B"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
          android:textColor="#ffffff"
          android:text="BERLIN" />
        <RadioButton
          android:id="@+id/answer2C"
          android:layout_width="match_parent"
          android:layout_height="wrap_content"
```

```
        android:textColor="#ffffff"
        android:text="MOSCOW " />
    <RadioButton
        android:id="@+id/answer2D"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textColor="#ffffff"
        android:text="CANEBRA " />
</RadioGroup>
            </TableRow>
             <TableRow
                android:layout_height="wrap_content"
                android:layout_width="match_parent"
                android:gravity="center_horizontal">
                <Button
                    android:id="@+id/submit"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:gravity="center"
                    android:text="Submit" />
            </TableRow>
        </TableLayout>
</ScrollView>
```

7) Now select mainactivity.java file and type the following code.In my coding mainactivity name is Alert1 Activity .

8)Now go to main.xml and right click .select run as option and select run configuration

9) Android output is present in the android emulator as shown below.

RESULT

Thus the android program has been successfully executed

EX NO: 10	Write a mobile application that creates alarm clock
DATE:	

1. Android Manifest

AndroidManifest.xml

We need to give users-permission for WAKE_LOCK, other than that the AndroidManifest.xml is pretty standard one. Just need to include the service and receiver.

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

    <uses-permission android:name="android.permission.WAKE_LOCK" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme">
        <activity
            android:name=".AlarmActivity"
            android:label="@string/app_name">
            <intent-filter>
              <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER"
            /> </intent-filter>
        </activity>
        <service
            android:name=".AlarmService"
            android:enabled="true" />
        <receiver android:name=".AlarmReceiver" />
    </application>
</manifest>
```

2. Android Activity

activity_my.xml

The Android Activity is designed to be simple. We have a TimePicker component followed by a ToggleButton. That's it. Choose the time to set the alarm and toggle the switch to on. The alarm will work.

```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:paddingLeft="@dimen/activity_horizontal_margin"
        android:paddingRight="@dimen/activity_horizontal_margin"
        android:paddingTop="@dimen/activity_vertical_margin"
        android:paddingBottom="@dimen/activity_vertical_margin"
        tools:context=".MyActivity">

    <TimePicker
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/alarmTimePicker"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true" />


    <ToggleButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Alarm On/Off"
        android:id="@+id/alarmToggle"
        android:layout_centerHorizontal="true"
        android:layout_below="@+id/alarmTimePicker"
        android:onClick="onToggleClicked" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textAppearance="?android:attr/textAppearanceLarge"
        android:text=""
        android:id="@+id/alarmText"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
        android:layout_below="@+id/alarmToggle" />

</RelativeLayout>
```

AlarmActivity.java

AlarmActivity uses the AlarmManager to set the alarm and send notification on the alarm

trigger.
```
package com.javapapers.androidalarmclock;

import android.app.Activity;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.TextView;
import android.widget.TimePicker;
import android.widget.ToggleButton;
```

```java
import java.util.Calendar;

public class AlarmActivity extends Activity {

    AlarmManager alarmManager;
    private PendingIntent pendingIntent;
    private TimePicker alarmTimePicker;
    private static AlarmActivity inst;
    private TextView alarmTextView;

    public static AlarmActivity instance() {
        return inst;
    }

    @Override
    public void onStart() {
        super.onStart();
        inst = this;
    }

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_my);
        alarmTimePicker = (TimePicker)
        findViewById(R.id.alarmTimePicker);  alarmTextView = (TextView)
        findViewById(R.id.alarmText);
        ToggleButton alarmToggle = (ToggleButton)
findViewById(R.id.alarmToggle);
        alarmManager = (AlarmManager)
    getSystemService(ALARM_SERVICE); }

    public void onToggleClicked(View view) {
        if (((ToggleButton) view).isChecked()) {
            Log.d("MyActivity", "Alarm On");
            Calendar calendar = Calendar.getInstance();
            calendar.set(Calendar.HOUR_OF_DAY,
alarmTimePicker.getCurrentHour());
            calendar.set(Calendar.MINUTE,
alarmTimePicker.getCurrentMinute());
            Intent myIntent = new Intent(AlarmActivity.this,
AlarmReceiver.class);
            pendingIntent = PendingIntent.getBroadcast(AlarmActivity.this,
0,  myIntent, 0);
            alarmManager.set(AlarmManager.RTC,
calendar.getTimeInMillis(),  pendingIntent);
        } else {
            alarmManager.cancel(pendingIntent);
            setAlarmText("");
            Log.d("MyActivity", "Alarm Off");
        }
    }

    public void setAlarmText(String alarmText) {
        alarmTextView.setText(alarmText);
    }

}
```

3. Alarm Receiver

AlarmReceiver.java

Alarm Receiver is a Wakeful Broadcast Receiver, this is the one that receives the alarm trigger on set time. From here we initiate different actions to notify the user as per our choice.I have given three type of notifications, first show a message to the user in the activity UI, second play the alarm ringtone and third send an Android notification message. So this is the place to add enhancement for different types of user notifications.

```
package com.javapapers.androidalarmclock;

import android.app.Activity;
import android.content.ComponentName;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.support.v4.content.WakefulBroadcastReceiver;

public class AlarmReceiver extends WakefulBroadcastReceiver

{

    @Override
    public void onReceive(final Context context, Intent intent)
        { //this will update the UI with message
        AlarmActivity inst = AlarmActivity.instance();
        inst.setAlarmText("Alarm! Wake up! Wake up!");

        //this will sound the alarm tone
        //this will sound the alarm once, if you wish to
        //raise alarm in loop continuously then use MediaPlayer
and  setLooping(true)
        Uri alarmUri =
RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);
        if (alarmUri == null) {
            alarmUri =
RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION
        ); }
        Ringtone ringtone = RingtoneManager.getRingtone(context,
        alarmUri);  ringtone.play();

        //this will send a notification message
        ComponentName comp = new
                ComponentName(context.getPackageName(),
                AlarmService.class.getName());
        startWakefulService(context,
        (intent.setComponent(comp)));
        setResultCode(Activity.RESULT_OK);
    }
}
```

4. Alarm Notification Message

AlarmService.java

The receiver will start the following `IntentService` to send a standard notification to the

user.
```
package com.javapapers.androidalarmclock;

import android.app.IntentService;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Context;
import android.content.Intent;
import android.support.v4.app.NotificationCompat;
import android.util.Log;

public class AlarmService extends IntentService {
    private NotificationManager alarmNotificationManager;

    public AlarmService() {
        super("AlarmService");
    }

    @Override
    public void onHandleIntent(Intent intent) {
        sendNotification("Wake Up! Wake Up!");
    }

    private void sendNotification(String msg) {
        Log.d("AlarmService", "Preparing to send notification...: " +
        msg);  alarmNotificationManager = (NotificationManager) this
            .getSystemService(Context.NOTIFICATION_SERVICE);

        PendingIntent contentIntent = PendingIntent.getActivity(this,
            0,  new Intent(this, AlarmActivity.class), 0);

        NotificationCompat.Builder alamNotificationBuilder = new
NotificationCompat.Builder(

this).setContentTitle("Alarm").setSmallIcon(R.drawable.ic_launcher)
            .setStyle(new
            NotificationCompat.BigTextStyle().bigText(msg))
            .setContentText(msg);


        alamNotificationBuilder.setContentIntent(contentIntent);
        alarmNotificationManager.notify(1,
        alamNotificationBuilder.build());  Log.d("AlarmService",
        "Notification sent.");
    }
}
```

RESULT

Thus the android program has been successfully executed

CONTENT BEYOND SYLLABUS

Write a mobile application for simple calculator

1)Open eclipse or android studio and select new android project

2)Give project name and select next

3)Choose the android version.Choose the lowest android version(Android 2.2) and selectnext

4)Enter the package name.package name must be two word separated by comma and click finish Go to package explorer in the left hand side.select ourproject.

Go to res folder and select layout.Double click the main.xml file.Add the code below

```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:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/linearLayout1"
android:layout_marginLeft="10pt"
android:layout_marginRight="10pt"
android:layout_marginTop="3pt">
<EditText
android:layout_weight="1"
android:layout_height="wrap_content"
android:layout_marginRight="5pt"
android:id="@+id/etNum1"
android:layout_width="match_parent"
android:inputType="numberDecimal">
</EditText>
<EditText
android:layout_height="wrap_content"
android:layout_weight="1"
android:layout_marginLeft="5pt"
android:id="@+id/etNum2"
android:layout_width="match_parent"
android:inputType="numberDecimal">
</EditText>
</LinearLayout>
<LinearLayout
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/linearLayout2"
android:layout_marginTop="3pt"
android:layout_marginLeft="5pt"
android:layout_marginRight="5pt">
<Button
android:layout_height="wrap_content"
android:layout_width="match_parent"
android:layout_weight="1"
android:text="+"
android:textSize="8pt"
android:id="@+id/btnAdd">
```

```xml
        </Button>
        <Button
android:layout_height="wrap_content"
android:layout_width="match_parent"
android:layout_weight="1" android:text="-
" android:textSize="8pt"
android:id="@+id/btnSub">
        </Button>
        <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="*"
        android:textSize="8pt"
        android:id="@+id/btnMult">
        </Button>
        <Button
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_weight="1"
        android:text="/"
        android:textSize="8pt"
        android:id="@+id/btnDiv">
        </Button>

        </LinearLayout>
        <TextView
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:layout_marginLeft="5pt"
        android:layout_marginRight="5pt"
        android:textSize="12pt"
        android:layout_marginTop="3pt"
        android:id="@+id/tvResult"
        android:gravity="center_horizontal">
        </TextView>

        </LinearLayout>
```

MainActivity.java

```java
        package com.website.androidcalculator;

        import android.os.Bundle;
        import android.app.Activity;
        import android.text.TextUtils;
        import android.view.Menu;
        import android.view.View;
        import android.view.View.OnClickListener;
        import android.widget.Button;
        import android.widget.EditText;
        import android.widget.TextView;

        public class MainActivity extends Activity implements OnClickListener {

            EditText etNum1;
            EditText etNum2;
```

```java
Button btnAdd;
Button btnSub;
Button
btnMult;
Button
btnDiv;

TextView tvResult;

String oper = "";

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

// find the elements
etNum1 = (EditText) findViewById(R.id.etNum1);
etNum2 = (EditText) findViewById(R.id.etNum2);

btnAdd = (Button) findViewById(R.id.btnAdd);
btnSub = (Button) findViewById(R.id.btnSub);
btnMult = (Button) findViewById(R.id.btnMult);
btnDiv = (Button) findViewById(R.id.btnDiv);

tvResult = (TextView) findViewById(R.id.tvResult);

// set a listener
btnAdd.setOnClickListener((OnClickListener) this);
btnSub.setOnClickListener(this);
btnMult.setOnClickListener(this);
btnDiv.setOnClickListener(this);

}

@Override
public void onClick(View v) {
// TODO Auto-generated method stub
float num1 = 0;
float num2 = 0;
float result = 0;

// check if the fields are empty
if (TextUtils.isEmpty(etNum1.getText().toString()) ||
TextUtils.isEmpty(etNum2.getText().toString())) {  return;
}

// read EditText and fill variables with numbers  num1
= Float.parseFloat(etNum1.getText().toString());  num2
= Float.parseFloat(etNum2.getText().toString());

// defines the button that has been clicked and performs the
corresponding operation
// write operation into oper, we will use it later for output
switch (v.getId()) {
 case R.id.btnAdd:
oper = "+";
result = num1 + num2;
break;
case R.id.btnSub:
```

```
oper = "-";
result = num1 - num2;
break;


case R.id.btnMult:
oper = "*";
result = num1 * num2;
break;
case R.id.btnDiv:
oper = "/";
result = num1 / num2;
break;
default:
break;
}

// form the output line
tvResult.setText(num1 + " " + oper + " " + num2 + " = " + result);
}
}
```

RESULT

Thus the android program has been successfully executed