DR.AMBEDKAR INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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MANUAL

OF

ANDROID PROGRAMMING

Aided By Govt. of Karnataka	**SUBJECT TITLE: ANDROID PROGRAMMING LAB**		
	SUBJECT CODE:16CSL75	**No. of Credits:0:0:1.5:0**	**No. of Lecture hours per week:3**
	Exam Duration :3 hours	**Exam Marks: 50**	

Course objectives:

1) To learn and acquire art of Android programming.
2) To configure initial application, run in emulator.
3) Understand and implement Android's advanced User interface functions, audio video applications
4) Create, modify and query on SQlite database.
5) Present different ways of sharing data through the use of services.

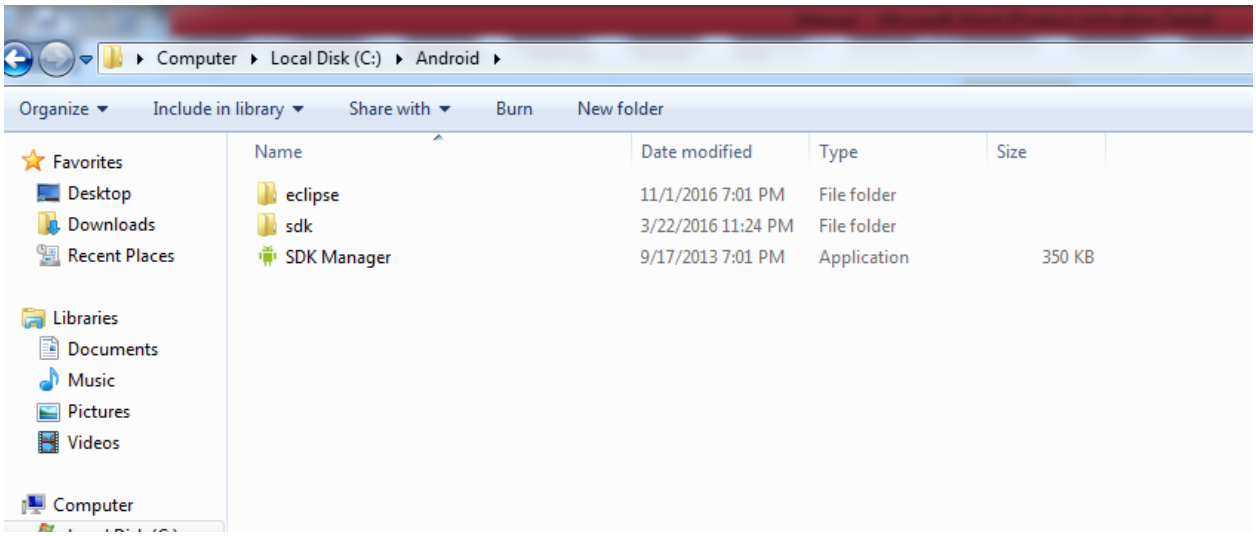
1.	Write a program to create an Activity to read Employee Details (EmpId, Name, Age, Address) from user and store to database and create a menu with menu item (Show Details) on pressing menu details it must go to another activity with employee id search box and search button and display the employee details on the screen.
2.	Write a program to create an activity with a text box and three buttons (save, ,open and create) open must allow to browse the text file from sdcard and must display the contents of the file on textbox, save button must save the contents of text box to file, create button must allow file user to create a new file and save the entered contents of the textbox.
3.	Write a program to create an activity with two text boxes (date /time and note contents). Create a content provider to store the date and time and note contents to the database. Create another program with a Button (Fetch Today Notes) on press must access the note provider and display the notes stored for today's date.
4.	Create a program to create an activity with two buttons start and stop. On pressing start button the program must start the counter and must keep on counting until stop button is pressed.
5.	Create a program to receive the incoming SMS to the phone and put a notification on screen, on clicking the notification it must display sender number and message content on screen.
6.	Create a program to create a service that will put a notification on the screen every 5 seconds.
7.	Create an .aidl service to do add, subtraction and multiplication and create another application with two buttons to read the inputs and three button add,subtract and multiply to call add,subtract and multiply operation on .aidl service.
8.	Create an activity like a phone dialer with (1,2,3,4,5,6,7,8,9,0,*,#) buttons and call and save button on pressing the call button, it must call the phone number and on pressing the save button it must save the number to the phone contacts.

Course Outcomes:

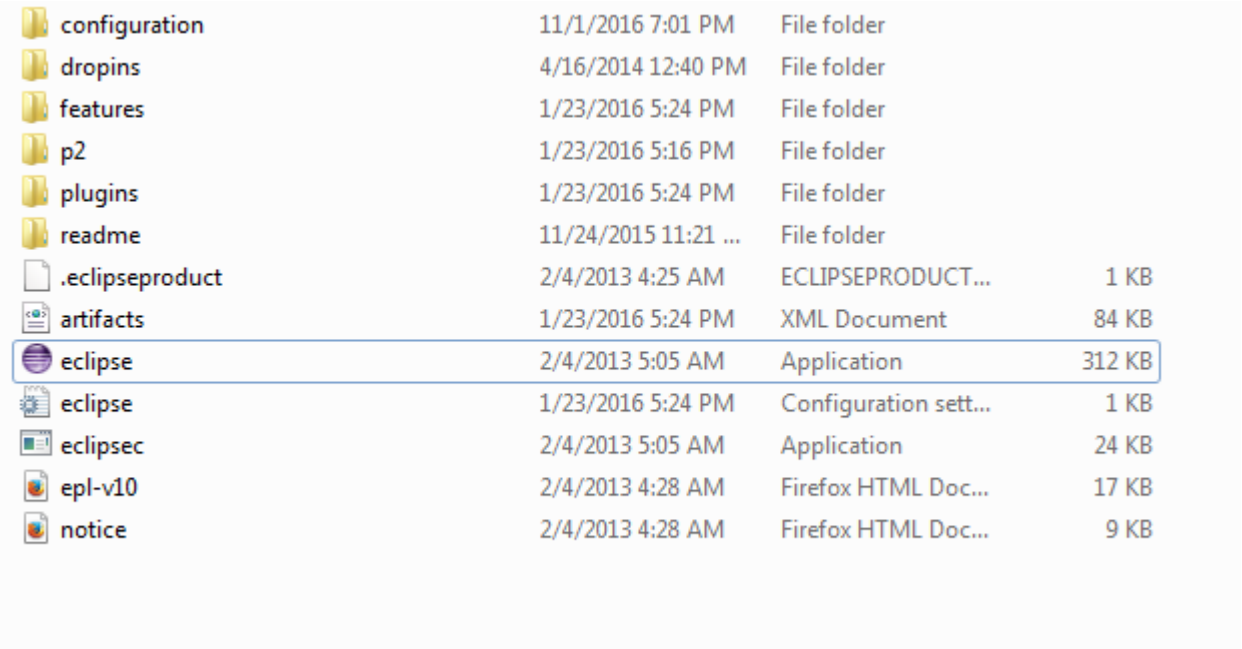
CO1:Understand the android OS and fundamental concepts in Android programming.
CO2:Demonstrate various components, layouts and views in creating Android applications
CO3:Design applications to save or to store data in SQLite
CO4: Demonstrate the sharing data with different application and sending SMS
CO5: Demonstrate how to write applications using services

Installing Android:

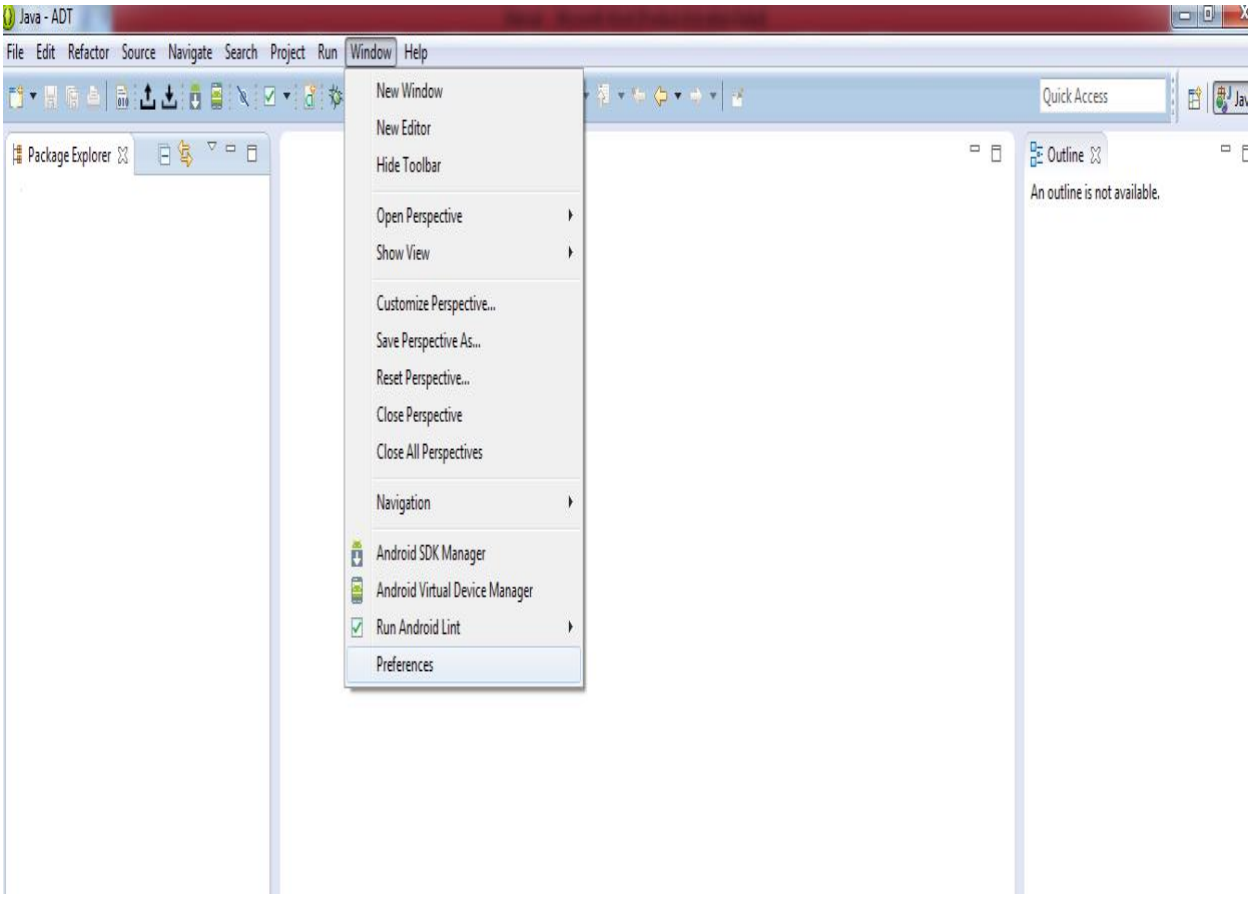
Copy Android Folder to C: Drive



Go to Eclipse Folder and launch eclipse icon

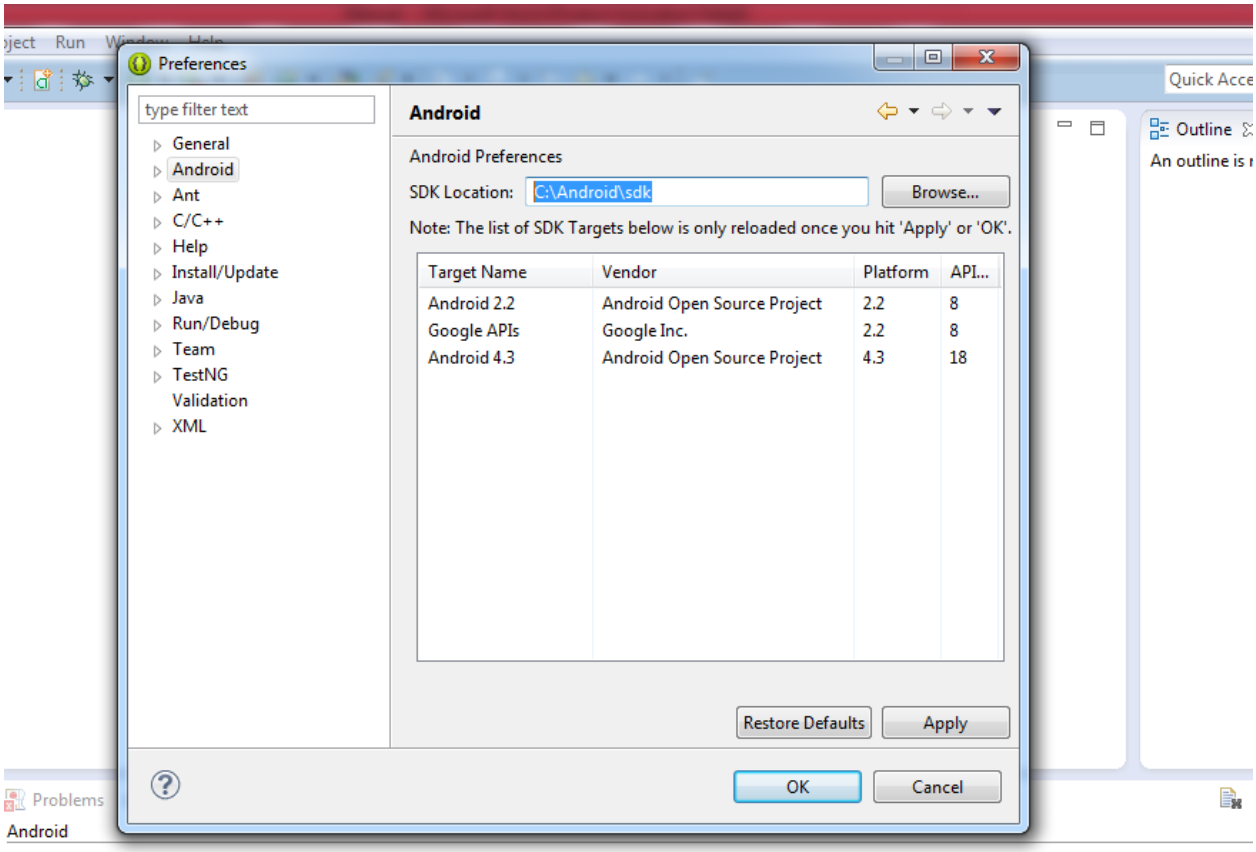


To Check Eclipse is configured with Android Go to Window Preferences



And click Android SDK location must be pointing to SDK folder inside Android Folder, if it is not showing

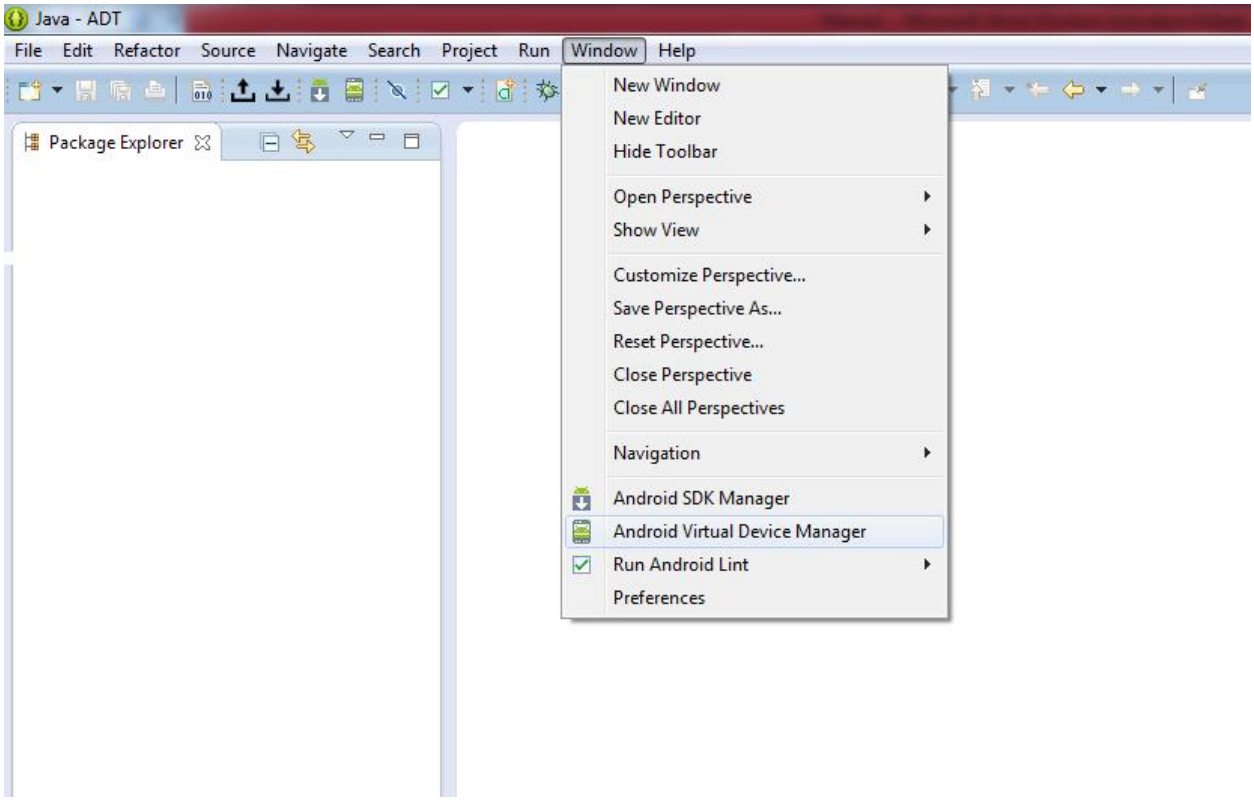
Click Browse and browse to SDK location and press Apply and Press Ok



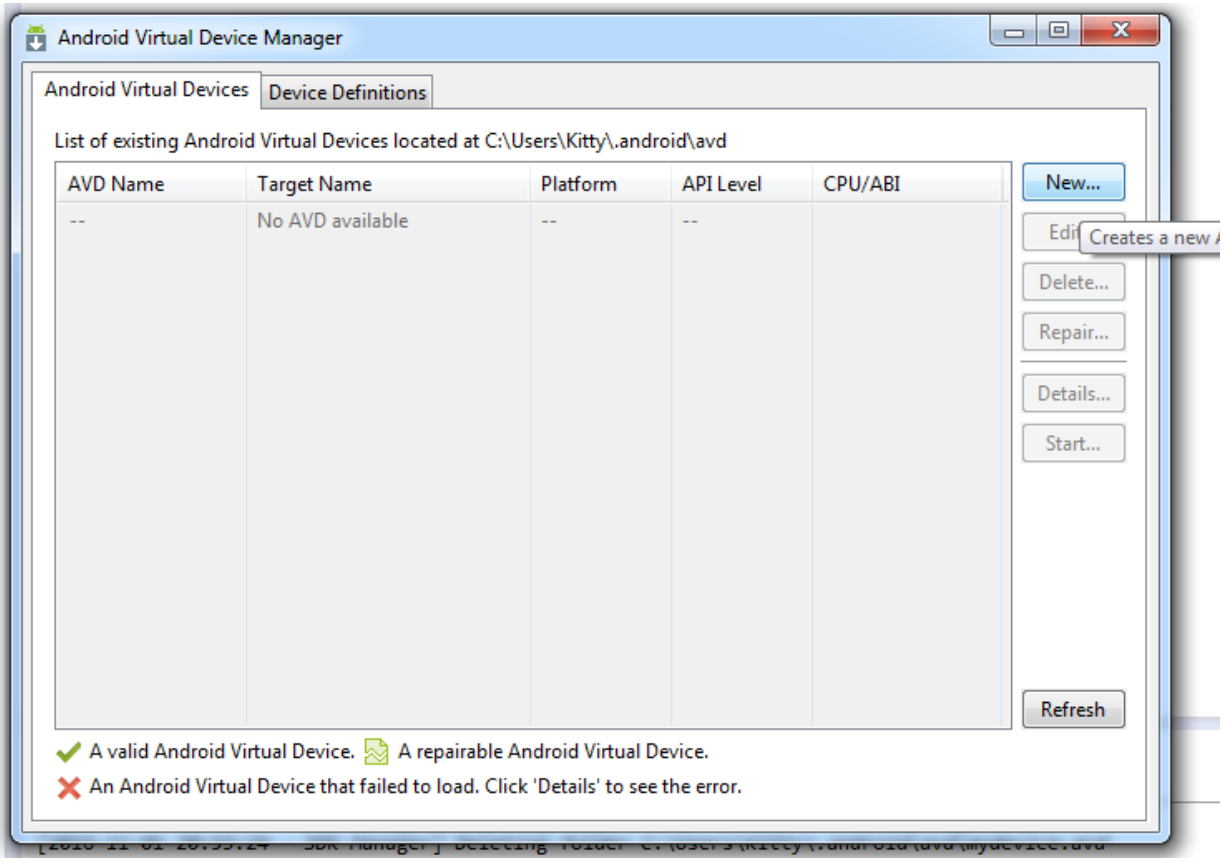
Now Eclipse is Configured with Android

Creating Emulator:

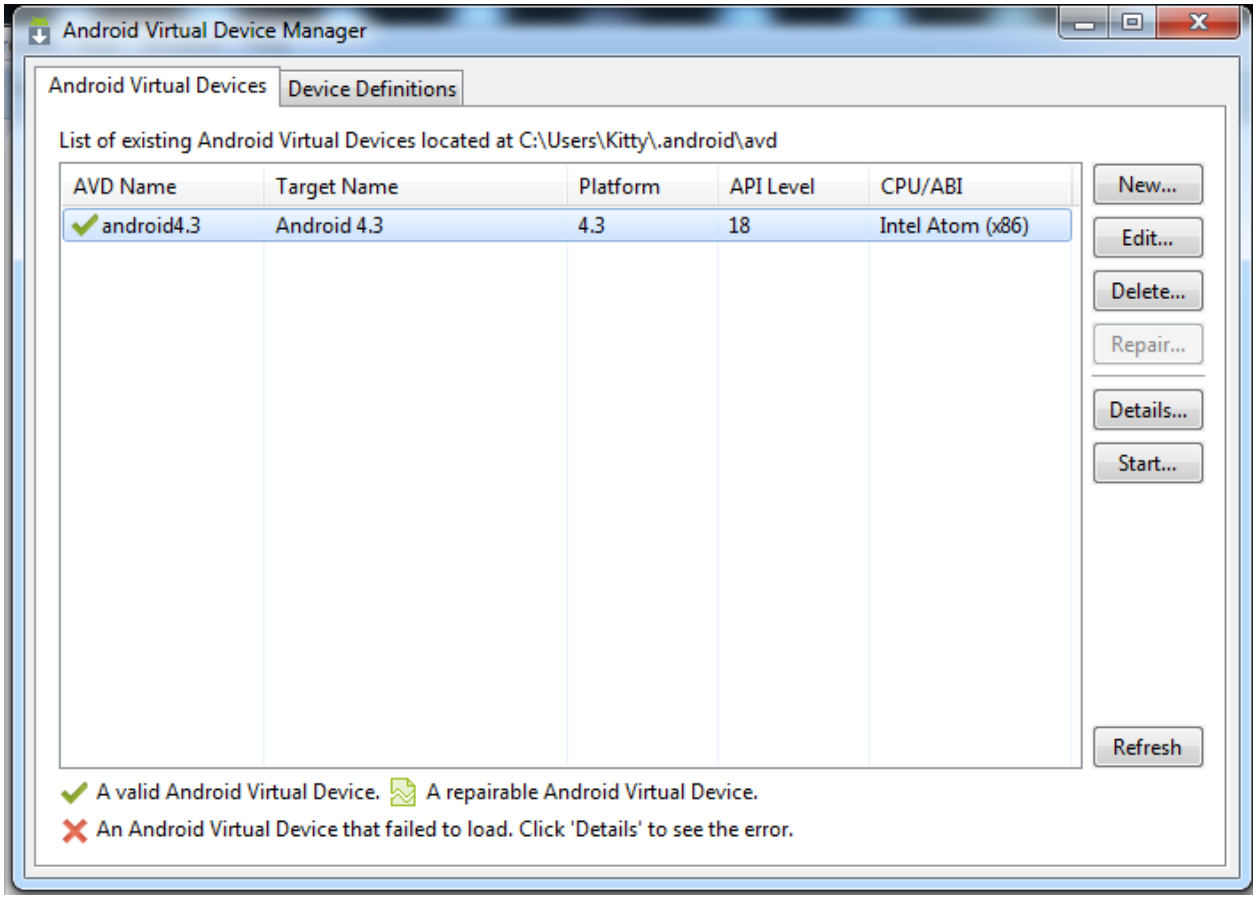
Go to Window -> Android Virtual Device Manage

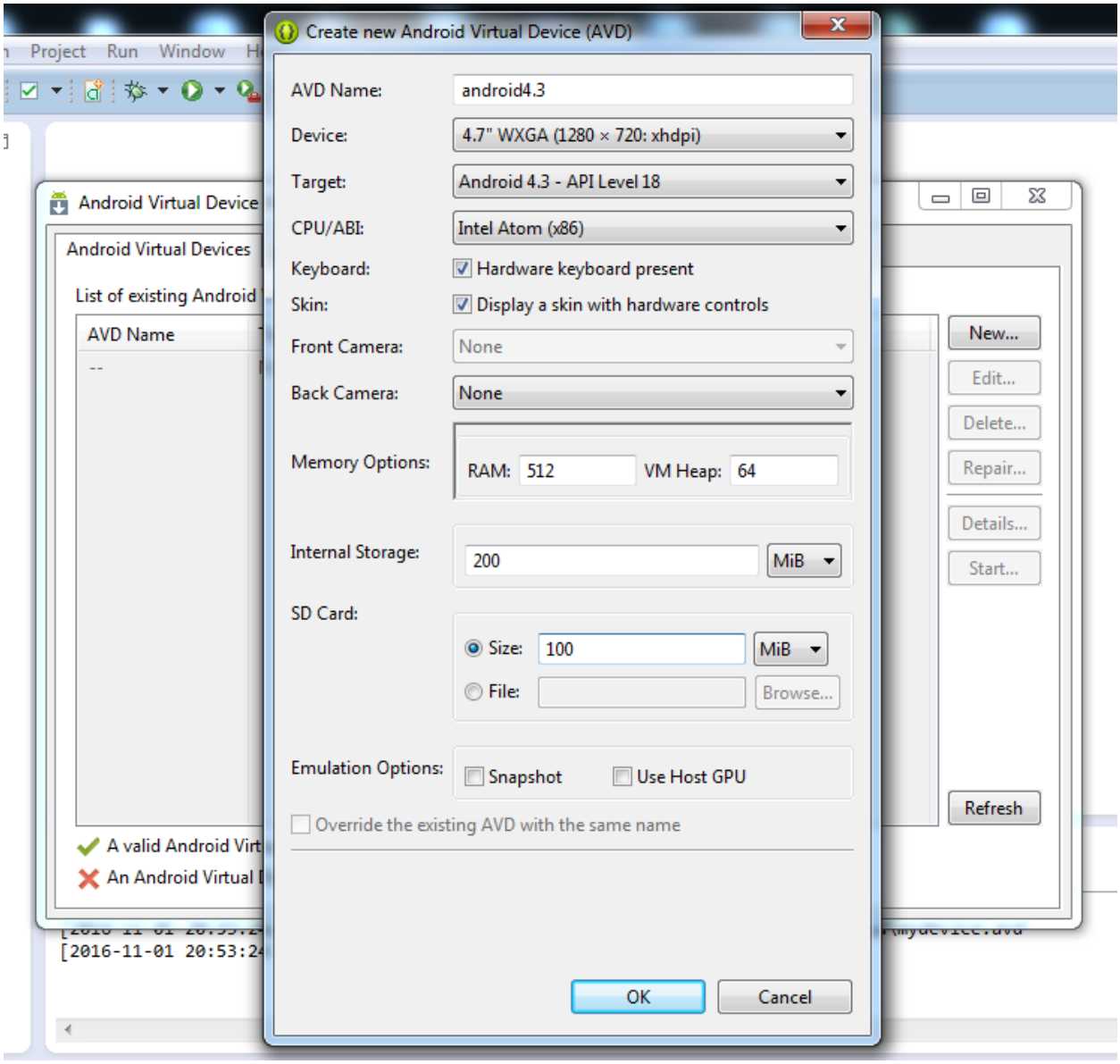

Java - ADT
File Edit Refactor Source Navigate Search Project Run Window Help
Package Explorer
New Window
New Editor
Hide Toolbar
Open Perspective
Show View
Customize Perspective...
Save Perspective As...
Reset Perspective...
Close Perspective
Close All Perspectives
Navigation
Android SDK Manager
Android Virtual Device Manager
Run Android Lint
Preferences

Press New



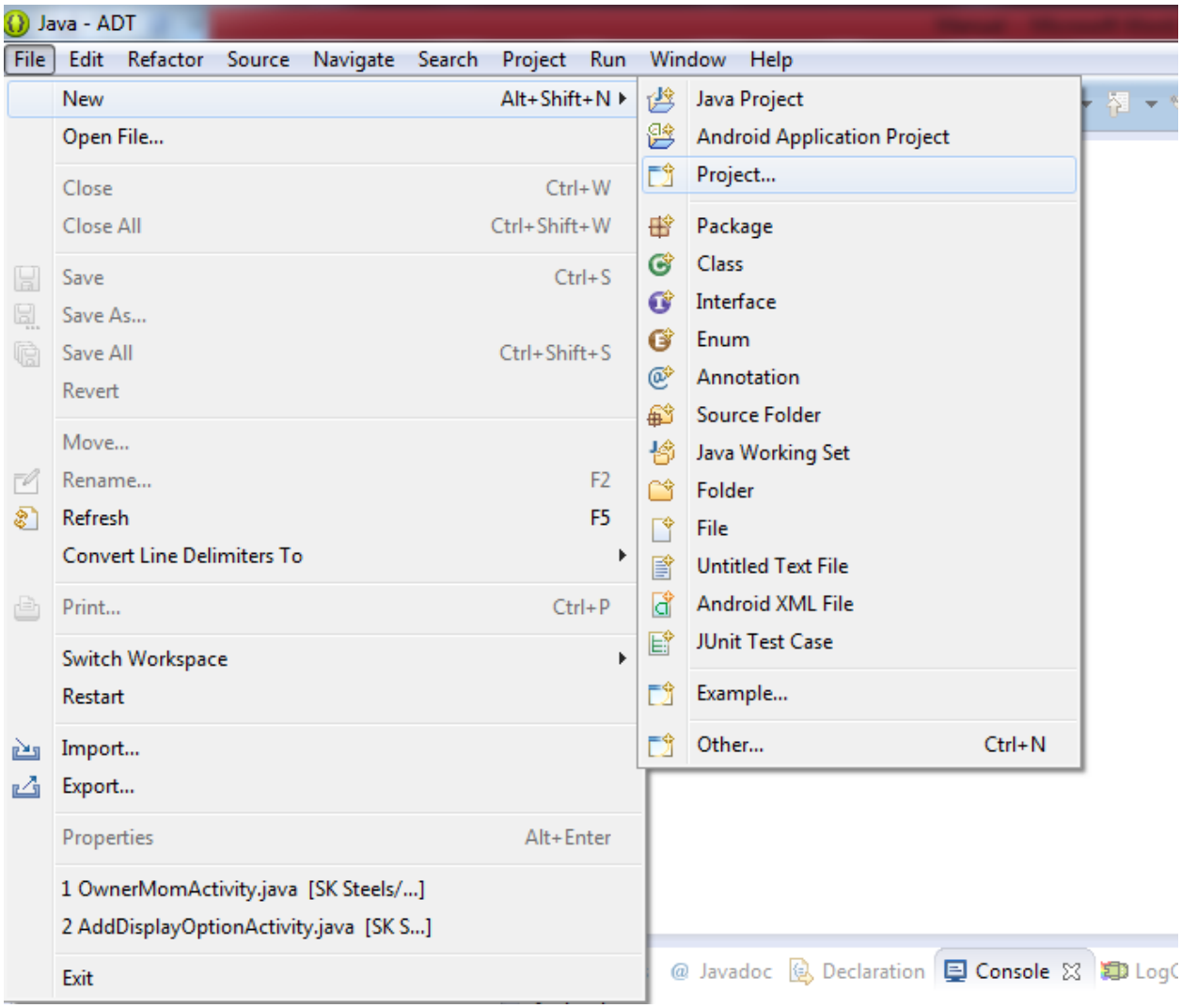
Enter the Emulator Details Device Name must contain small letters without space character enter necessary detail and press ok


Android Virtual Device Manager
Android Virtual Devices
Device Definitions
List of existing Android Virtual Devices located at C:\Users\Kitty\.android\avd
AVD Name
Target Name
Platform
API Level
CPU/ABI
android4.3
Android 4.3
4.3
18
Intel Atom (x86)
New...
Edit...
Delete...
Repair...
Details...
Start...
Refresh
A valid Android Virtual Device.
A repairable Android Virtual Device.
An Android Virtual Device that failed to load. Click 'Details' to see the error.

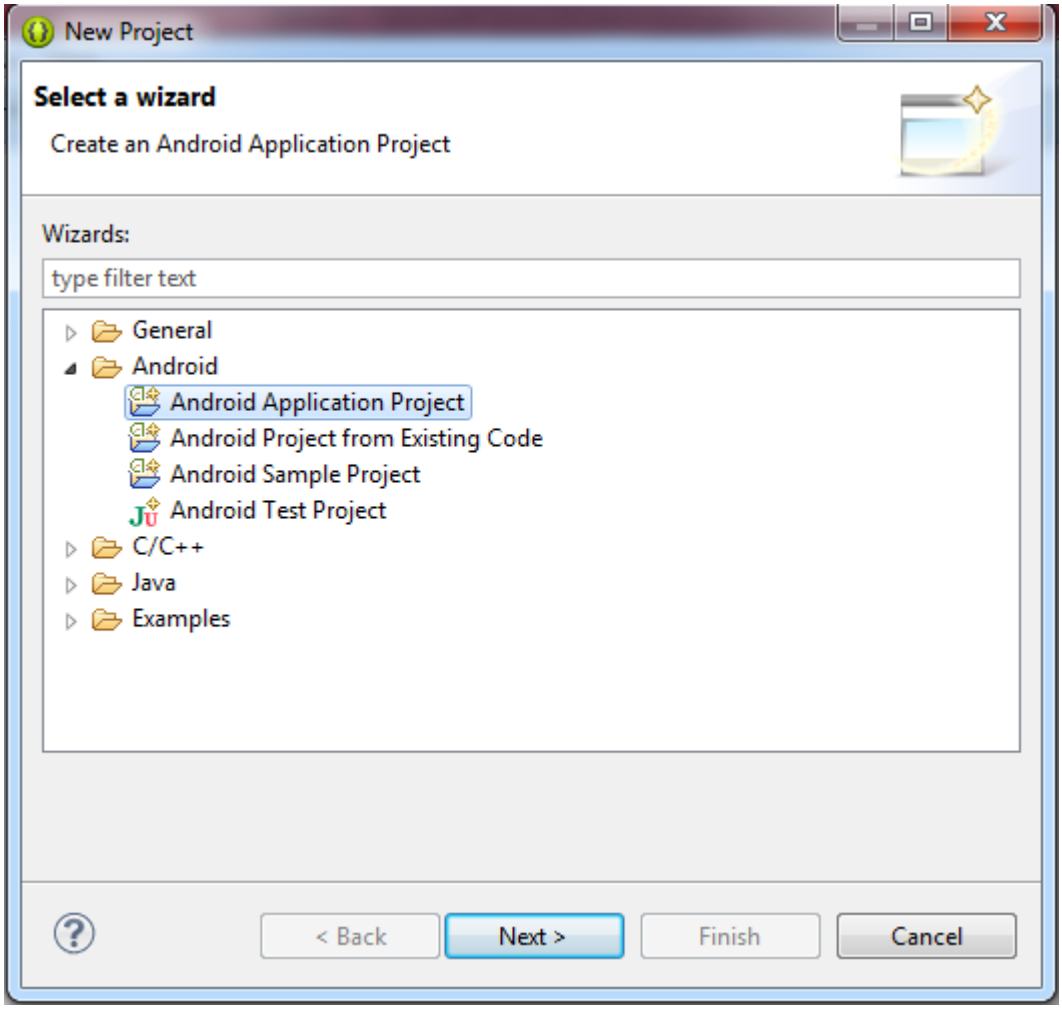


Creating New Android in Eclipse:

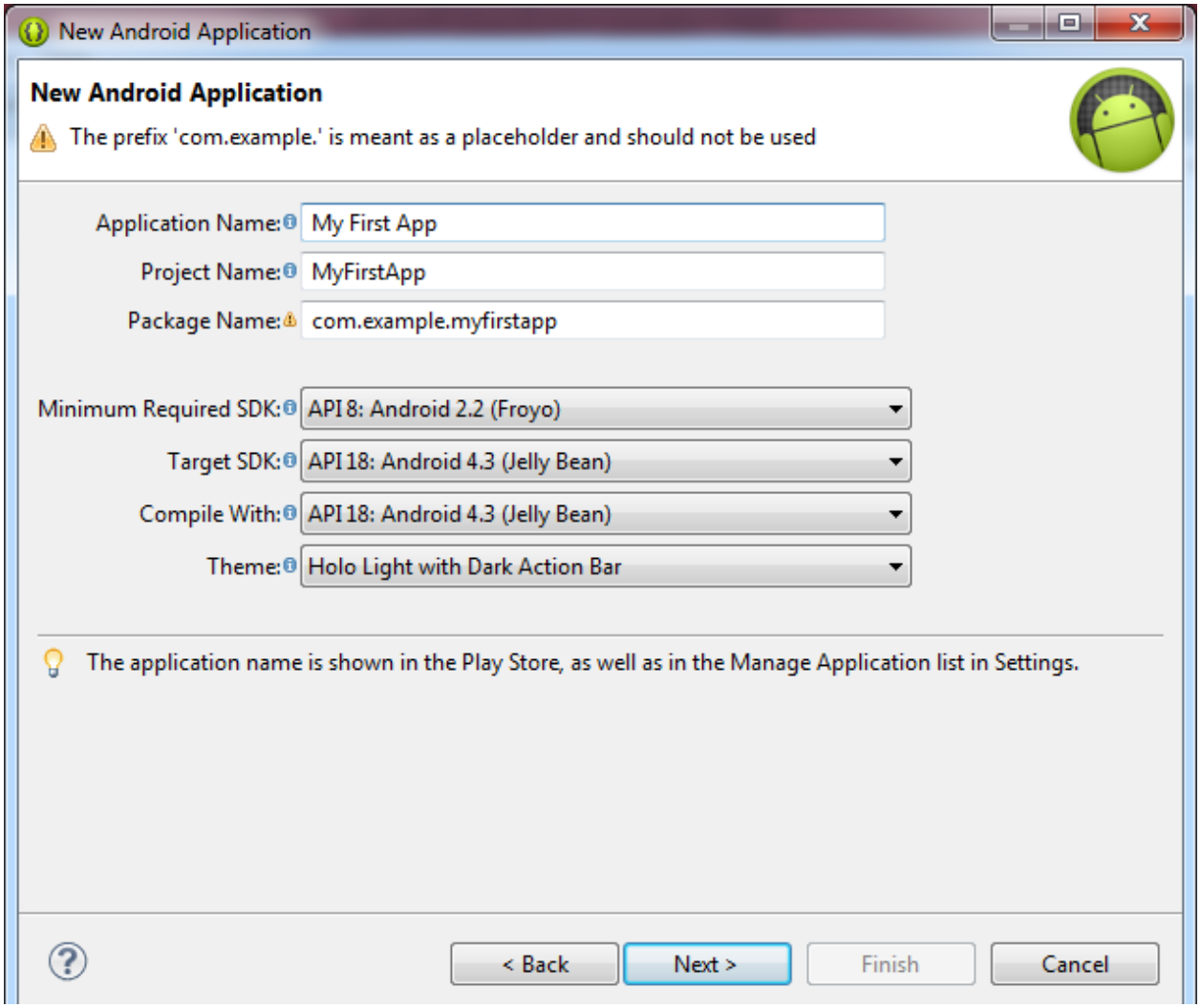
Go to File -> Project



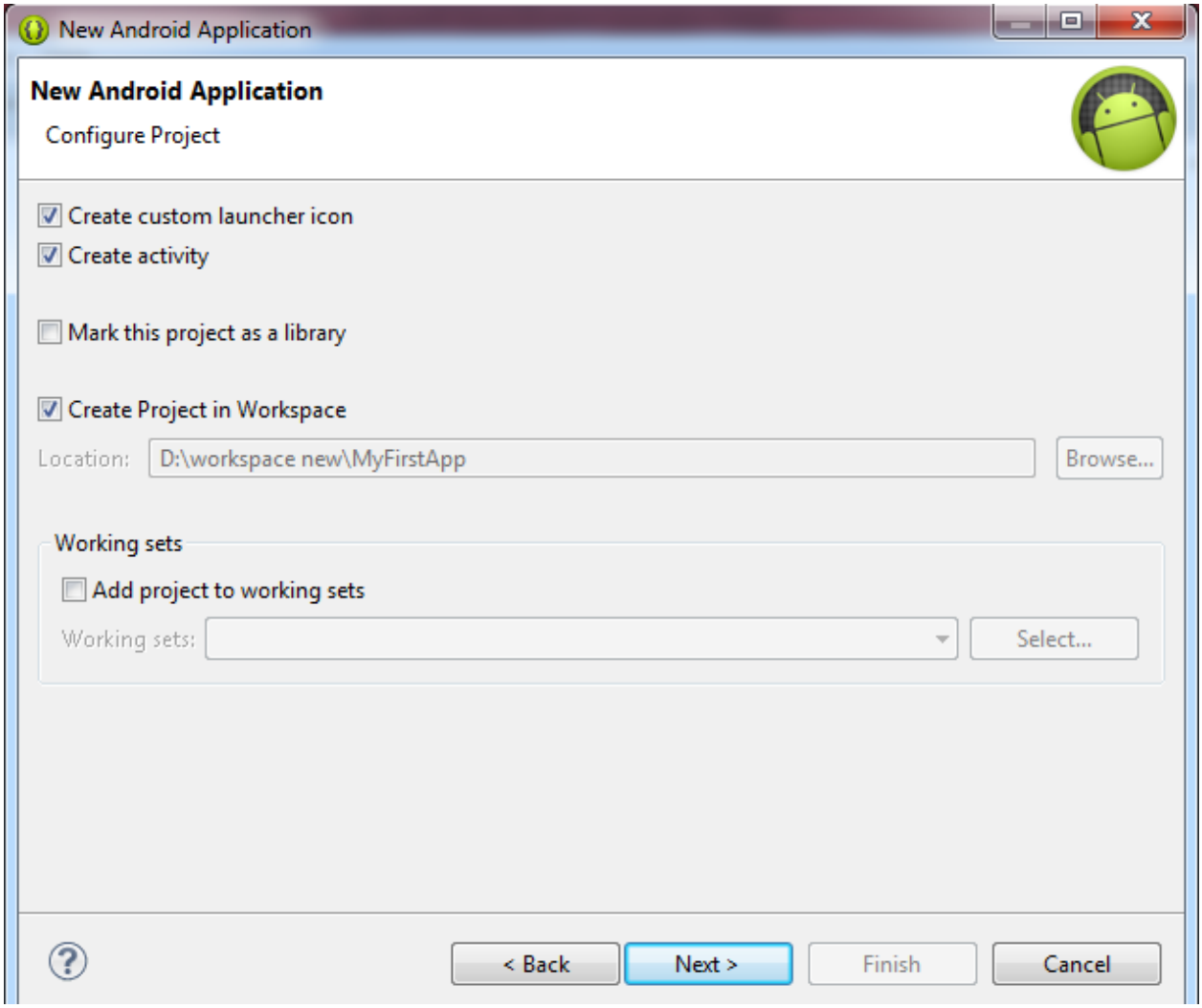
Expand Android and Select Android Application Project and press Next



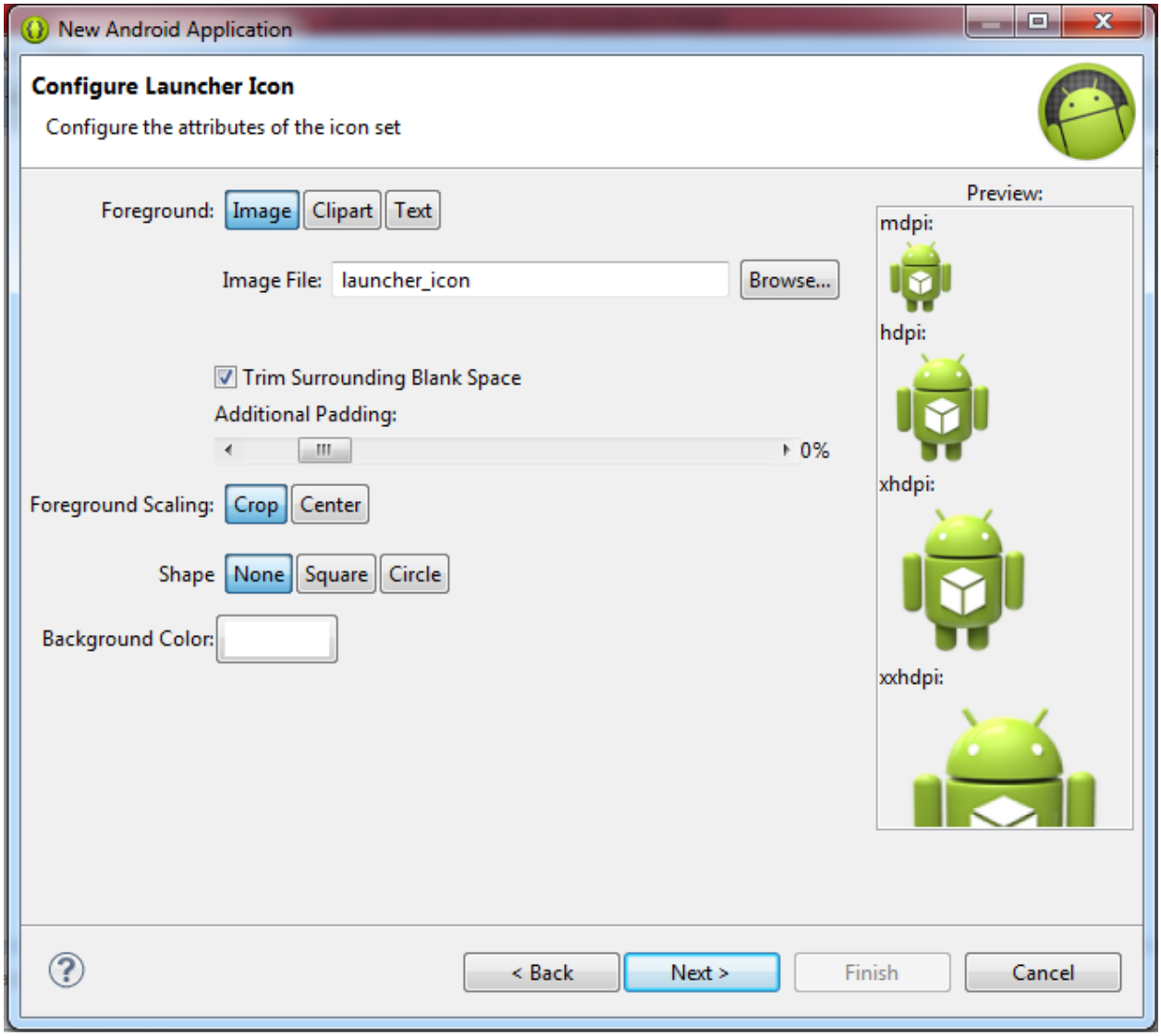
Enter Application Name, other two fields fill automatically


New Android Application
New Android Application
The prefix 'com.example.' is meant as a placeholder and should not be used
Application Name:
My First App
Project Name:
MyFirstApp
Package Name:
com.example.myfirstapp
Minimum Required SDK:
API 8: Android 2.2 (Froyo)
Target SDK:
API 18: Android 4.3 (Jelly Bean)
Compile With:
API 18: Android 4.3 (Jelly Bean)
Theme:
Holo Light with Dark Action Bar
The application name is shown in the Play Store, as well as in the Manage Application list in Settings.
< Back
Next >
Finish
Cancel

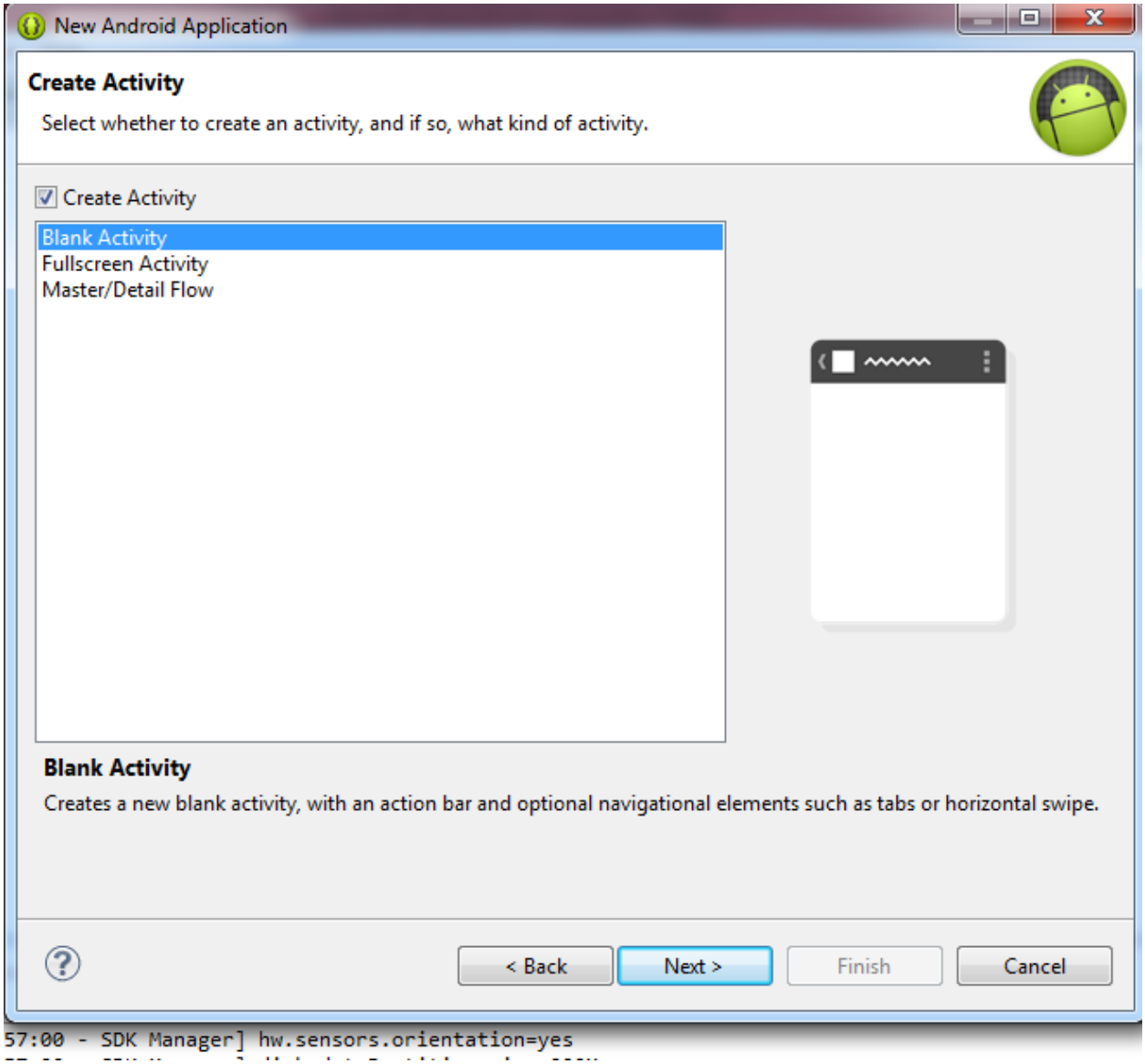
Press Next


New Android Application
New Android Application
Configure Project
Create custom launcher icon
Create activity
Mark this project as a library
Create Project in Workspace
Location:
D:\workspace new\MyFirstApp
Browse...
Working sets
Add project to working sets
Working sets:
Select...
< Back
Next >
Finish
Cancel

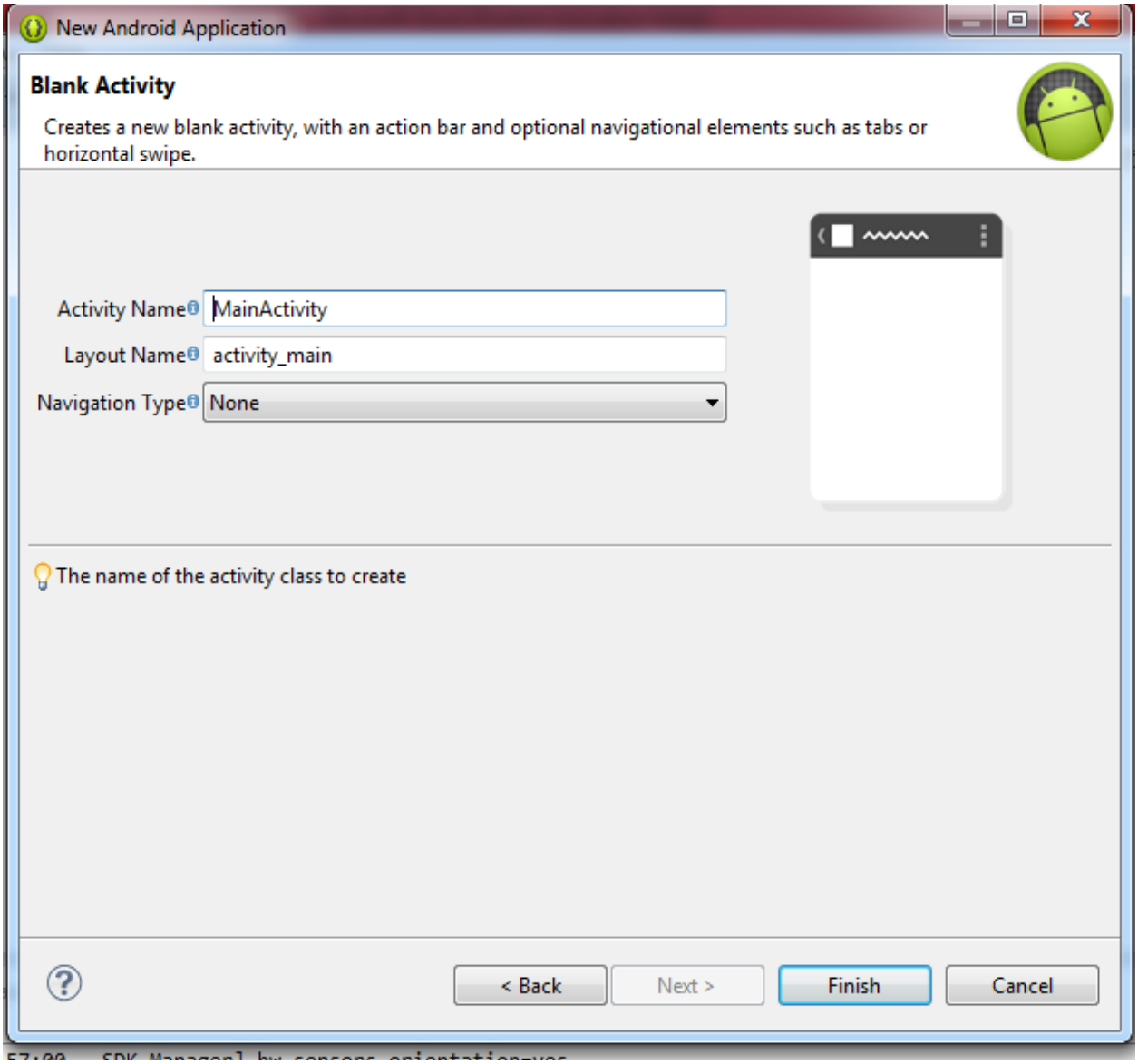
Press Next


New Android Application
Configure Launcher Icon
Configure the attributes of the icon set
Foreground:
Image
Clipart
Text
Image File:
launcher_icon
Browse...
Trim Surrounding Blank Space
Additional Padding:
0%
Foreground Scaling:
Crop
Center
Shape
None
Square
Circle
Background Color:
Preview:
mdpi:
hdpi:
xhdpi:
xxhdpi:
< Back
Next >
Finish
Cancel

Press Next



Press Finish


New Android Application
Blank Activity
Creates a new blank activity, with an action bar and optional navigational elements such as tabs or horizontal swipe.
Activity Name
MainActivity
Layout Name
activity_main
Navigation Type
None
The name of the activity class to create
< Back
Next >
Finish
Cancel

I. Hello world Program

```
<LinearLayoutxmlns: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">

<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Welcome to Android world"/>

</LinearLayout>
```

II. To create layout for username password and login button.

activity_main.xml

```
<LinearLayoutxmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"

android:orientation="vertical"
android:gravity="center">

<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Username"/>

<EditTextandroid:layout_width="match_parent"
android:layout_height="wrap_content"
android:id="@+id/txt_user"/>

<TextView
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="Password"/>

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

<Buttonandroid:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Login"
android:layout_gravity="center"
android:id="@+id/txt_login"/>

</LinearLayout>
```

Strings.xml

```
<?xmlversion="1.0"encoding="utf-8"?>
<resources>
<stringname="app_name">Lab1</string>
<stringname="action_settings">Settings</string>
<stringname="hello_world">Hello world!</string>
<stringname="welcome">Welcome to Android Programming</string>
</resources>
```

Main_activity.Java

```
package com.example.lab1;
import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener{

        EditText txtuser,txtpwd;
        Button txtlogin;

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

      setContentView(R.layout.activity_main);

      txtuser=(EditText)findViewById(R.id.txt_user);
      txtpwd=(EditText)findViewById(R.id.txt_pwd);
      txtlogin=(Button)findViewById(R.id.txt_login);
      txtlogin.setOnClickListener(this);
   }

   @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;
```

```
   }

@Override
	public void onClick(View arg0) {
		// TODO Auto-generated method stub
		if(arg0.equals(txtlogin))
		{
			String username=txtuser.getText().toString();
			String password=txtpwd.getText().toString();
			if(username.equals("admin") && password.equals("admin"))
			{
				Intent it=new Intent(this, MyNextActivity.class);
				startActivity(it);
			}
			else
{
				Toast.makeText(getBaseContext(), "LOGIN FAILED",
Toast.LENGTH_LONG).show();
			}
		}

	}

}
```

III. DATABASE CREATION

activity_main.xml

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

<Button android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Insertdata"
      android:layout_gravity="center"
      android:id="@+id/btn_insdata"/>

<Button android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Showdata"
      android:layout_gravity="center"
      android:id="@+id/btn_showdata"/>


<TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_gravity="center"
      android:text="No Data"
      android:id="@+id/txt_nodata"/>

</LinearLayout>
```

Main_activity.java

```
package com.example.database1;
import android.os.Bundle;
import android.app.Activity;
import android.content.ContentValues;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.view.Menu;
```

```
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {

Button btninsdata, btnshowdata;
TextView Ndata;


   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
btninsdata=(Button)findViewById(R.id.btn_insdata);
btninsdata.setOnClickListener(this);
btnshowdata=(Button)findViewById(R.id.btn_showdata);
btnshowdata.setOnClickListener(this);
Ndata=(TextView)findViewById(R.id.txt_nodata);


   }

   @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;
   }

        @Override
        public void onClick(View v) {
                // TODO Auto-generated method stub
         if(v.equals(btninsdata))
         {
                MyDatabase dat=new MyDatabase(this, "ambedkar.db", null, 1);
                SQLiteDatabase database=dat.getWritableDatabase();
                ContentValues cv= new ContentValues();
                cv.put("id", "123");
                cv.put("name", "Lavanya");
                cv.put("age","25" );
                cv.put("address", "Nagarabhavi");
                database.insert("Employee", null, cv);
                database.close();
                Toast.makeText(this, "Data Inserted successfully", 15000).show();
```

```
        }
        else if(v.equals(btnshowdata))
        {
                MyDatabase dat=new MyDatabase(this, "ambedkar.db", null, 1);
                SQLiteDatabase database=dat.getReadableDatabase();
                String[] columns=new String[] {"id","name","age","address"};
                Cursor cu=database.query("Employee", columns, null, null, null, null, null);
               Ndata.setText("");
                while(cu.moveToNext())
                {

                        String id=cu.getString(0);
                        String name=cu.getString(1);
                        String age=cu.getString(2);
String address=cu.getString(3);

                       Ndata.append(id+ " " +name+ " "+age+ " "+address+"\n");
                }
        }
       }

}
```

Mydatabase.java

```
package com.example.database1;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteDatabase.CursorFactory;
import android.database.sqlite.SQLiteOpenHelper;

public class MyDatabase extends SQLiteOpenHelper{

        public MyDatabase(Context context, String name, CursorFactory factory,
                        int version) {
                super(context, name, factory, version);
                // TODO Auto-generated constructor stub
        }

        @Override
        public void onCreate(SQLiteDatabase db) {
                // TODO Auto-generated method stub
                db.execSQL("create table employee (id TEXT,name TEXT,age TEXT,address
TEXT)");
```

```
	}

	@Override
	public void onUpgrade(SQLiteDatabase arg0, int arg1, int arg2) {
		// TODO Auto-generated method stub

	}

}
```

Lab programs

1. Write a program to create an Activity to read Employee Details (EmpId, Name, Age, Address) from user and store to database and create a menu with menu item (Show Details) on pressing menu details it must go to another activity with employee id search box and search button and display the employee details on the screen.

Activity_main.xml

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

<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Employee_id"/>

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


<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Employee_name"/>

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


<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Employee_age"/>

<EditTextandroid:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
android:id="@+id/txt_age"/>

<TextView
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Employee_address"/>

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

<LinearLayout
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:orientation="horizontal"
android:layout_gravity="center">


<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Submit"
android:layout_gravity="center"
android:id="@+id/btn_submit"/>

<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Search"
android:layout_gravity="center"
android:id="@+id/btn_search"/>


</LinearLayout>

</LinearLayout>
```

Search.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:layout_width="fill_parent"
      android:layout_height="wrap_content"

      android:text="Enter Employee id" />

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

<Button
     android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Search"
      android:layout_gravity="center"
      android:id="@+id/txt_search"/>

<TextView
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:gravity="center"
      android:text="Text view"
      android:id="@+id/txt_display"/>

</LinearLayout>
```

Main_activity.java

```
package com.example.employeedetails;

import android.os.Bundle;
import android.app.Activity;
import android.content.ContentValues;
import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {
```

```
        EditText  txtid,txtname,txtage,txtaddress;
        Button btnsubmit,btnsearch;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_main);
       txtid=(EditText)findViewById(R.id.txt_id);
       txtname=(EditText)findViewById(R.id.txt_name);
       txtage=(EditText)findViewById(R.id.txt_age);
       txtaddress=(EditText)findViewById(R.id.txt_address);
       btnsubmit=(Button)findViewById(R.id.btn_submit);
       btnsubmit.setOnClickListener(this);
       btnsearch=(Button)findViewById(R.id.btn_search);
       btnsearch.setOnClickListener(this);


    }

    @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;
    }
        @Override
        public void onClick(View v) {
                // TODO Auto-generated method stub
                Toast.makeText(this, "buttonclicked", 15000).show();

                if(v.equals(btnsubmit))
                {

                        String sid=txtid.getText().toString();
                        String sname=txtname.getText().toString();
                        String sage=txtage.getText().toString();
                        String saddress=txtaddress.getText().toString();

                 MyDatabase dat=new MyDatabase(this,MyDatabase.DATABASE_NAME, null,
1);

                        SQLiteDatabase database=dat.getWritableDatabase();
                        ContentValues cv= new ContentValues();
                        cv.put("id", sid);
                        cv.put("name", sname);
```

```
                cv.put("age",sage );
                cv.put("address", saddress);
                database.insert("Employee", null, cv);
                database.close();
                Toast.makeText(this, "Data Inserted successfully", 15000).show();
            }
            else if(v.equals(btnsearch))
            {
                Intent it=new Intent(this,SearchActivity.class);
                startActivity(it);

            }

            }

    }
```

Mydatabase.java

```
package com.example.employeedetails;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteDatabase.CursorFactory;
import android.database.sqlite.SQLiteOpenHelper;

public class MyDatabase extends SQLiteOpenHelper
{
    public static String DATABASE_NAME="Employee.db";
    public static String EMPLOYEE_TABLE="employee";

    public MyDatabase(Context context, String name, CursorFactory factory,
            int version) {
        super(context, name, factory, version);
        // TODO Auto-generated constructor stub
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        // TODO Auto-generated method stub
        db.execSQL("create table employee (id TEXT,name TEXT,age TEXT,address
TEXT)");


    }

    @Override
```

```
	public void onUpgrade(SQLiteDatabase arg0, int arg1, int arg2) {
		// TODO Auto-generated method stub

	}

}
```

Searchactivity.java

```
package com.example.employeedetails;

import android.app.Activity;
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;
import android.widget.TextView;
import android.widget.Toast;

public class SearchActivity extends Activity implements OnClickListener{

	EditText txtempid;
	Button btnsearch;
	TextView txtdisplay;

public void onCreate(Bundle b)
		{
	super.onCreate(b);
	setContentView(R.layout.search);

	txtempid=(EditText)findViewById(R.id.txt_empid);
	btnsearch=(Button)findViewById(R.id.txt_search);
	txtdisplay=(TextView)findViewById(R.id.txt_display);

	btnsearch.setOnClickListener(this);

		}


@Override
public void onClick(View v) {
	// TODO Auto-generated method stub
	Toast.makeText(this, "Button clicked", 15000).show();
	if(v.equals(btnsearch))
```

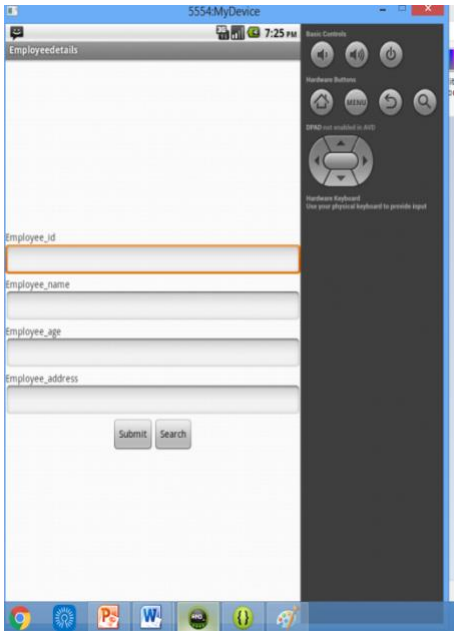
```
        {

                String eid=txtempid.getText().toString();

                MyDatabase dat=new MyDatabase(this, MyDatabase.DATABASE_NAME, null,
1);
                 SQLiteDatabase database=dat.getReadableDatabase();
                 String[] columns=new String[] {"id","name","age","address"};
                 String where="id=?";
                 String[] value= new String[]  { eid.trim() };
                 Cursor cu=database.query(MyDatabase.EMPLOYEE_TABLE, columns, where,
value, null, null, null);
                 txtdisplay.setText("");
                 if(cu.moveToNext())
                 {

                         String id=cu.getString(0);
                         String name=cu.getString(1);
                         String age=cu.getString(2);
                         String address=cu.getString(3);

                         txtdisplay.append(id+ " " +name+ " "+age+ " "+address+"\n");

        }
                 else
                 {
                         Toast.makeText(this, "No Id Exist", 15000).show();
                 }
}
}
}
```

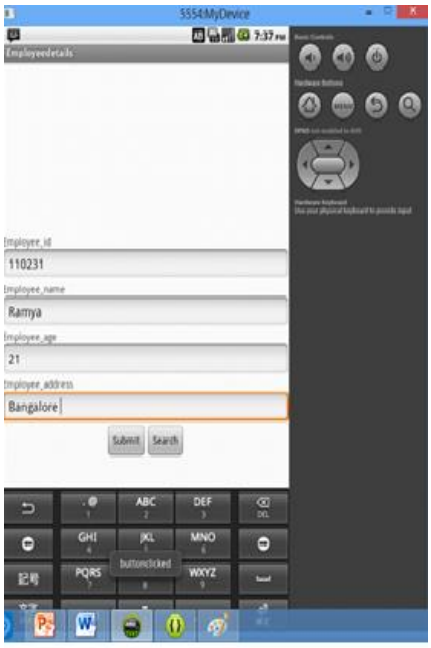
Manifest.xml

```
<?xmlversion="1.0"encoding="utf-8"?>
<manifestxmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.employeedetails"
android:versionCode="1"
android:versionName="1.0">

<uses-sdk
android:minSdkVersion="8"
android:targetSdkVersion="18"/>

<application
```

```
android:allowBackup="true"
android:icon="@drawable/ic_launcher"
android:label="@string/app_name"
android:theme="@style/AppTheme">
<activity
android:name="com.example.employeedetails.MainActivity"
android:label="@string/app_name">

<intent-filter>
<actionandroid:name="android.intent.action.MAIN"/>
<categoryandroid:name="android.intent.category.LAUNCHER"/>
</intent-filter>
</activity>
<activity  android:name="SearchActivity"> </activity>
</application>

    </manifest>
```

OUTPUT::




5554:MyDevice
7:37 PM
Employeedetails
Employee_id
110231
Employee_name
Ramya
Employee_age
21
Employee_address
Bangalore
Submit
Search
buttonclicked


5554:MyDevice
7:39 PM
Employeedetails
Employee_id
110231
Employee_name
Ramya
Employee_age
21
Employee_address
Bangalore
Submit
Search
Data Inserted successfully


5554:MyDevice
7:45 PM
Employeedetails
Enter Employee Id
110231
Search
Text view
110231

2. Write a program to create an activity with a text box and three buttons (save, ,open and create) open must allow to browse the text file from sdcard and must display the contents of the file on textbox, save button must save the contents of text box to file, create button must allow file user to create a new file and save the entered contents of the textbox.

Activity_main.xml

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

   <LinearLayout
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:orientation="horizontal"
   android:gravity="center">


      <Button
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:text="Create new file"
        android:id="@+id/btn_create"
        android:layout_gravity="left"/>

        <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open"
        android:id="@+id/btn_open"
        android:layout_gravity="right"/>

        </LinearLayout>

       <TextView
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="File:"
        android:id="@+id/lbl_file" />

        <EditText
        android:layout_width="match_parent"
        android:layout_height="200dp"
        android:id="@+id/txt_content"/>

        <Button android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Save"
        android:layout_gravity="center"
        android:id="@+id/btn_save"/>




</LinearLayout>
```

Dialog_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:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Enter File Name"/>

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


</LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.p2"
    android:versionCode="1"
    android:versionName="1.0" >

    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="18" />
    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
     <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE"/>

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="com.example.p2.MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

MainActivity.java

```
package com.example.p2;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;

import android.os.Bundle;
import android.os.Environment;
import android.app.Activity;
import android.app.AlertDialog;
import android.content.DialogInterface;
import android.content.Intent;
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;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {

        TextView lblFile;
        EditText txtContent;
        Button btnCreate,btnSave,btnOpen;

        int FILE_CHOOSE_REQUEST=1;

        String filepath;

        String filename;


   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      lblFile=(TextView)findViewById(R.id.lbl_file);

      txtContent=(EditText)findViewById(R.id.txt_content);
```

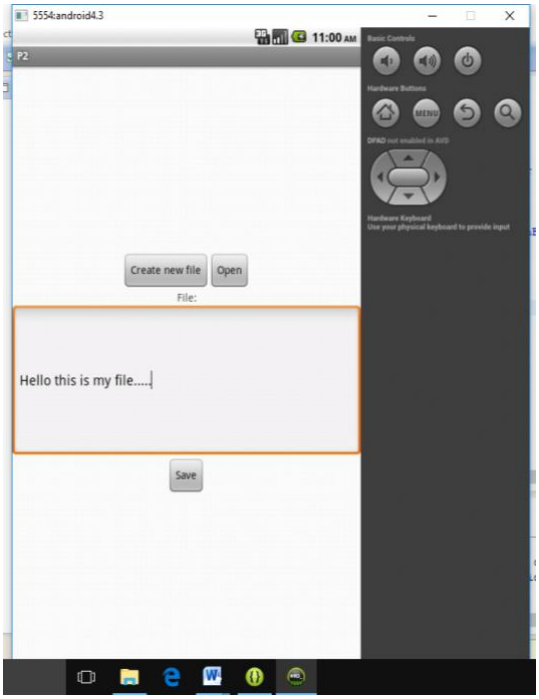
```
    btnCreate=(Button)findViewById(R.id.btn_create);
    btnCreate.setOnClickListener(this);

    btnSave=(Button)findViewById(R.id.btn_save);
    btnSave.setOnClickListener(this);

    btnOpen=(Button)findViewById(R.id.btn_open);
    btnOpen.setOnClickListener(this);



  }


  @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;
  }

  public void onActivityResult(int requestCode,int resultCode, Intent data)
  {
        super.onActivityResult(requestCode, resultCode, data);


                if(resultCode==RESULT_OK)
                {
                        filepath=data.getData().getPath();
                        filename=filepath.substring(filepath.lastIndexOf("/")+1);
                        filepath=filepath.substring(0,filepath.lastIndexOf("/"));

                        readFromFile(filepath,filename);
                        lblFile.setText(filepath+"/"+filename);
                }
                else
                {
                        Toast.makeText(this,"Wrong Choice of File",
Toast.LENGTH_LONG).show();
                }


  }

  public void writeToFile(String path,String filename)
  {
        try {
```

```
                    FileOutputStream fileout=new FileOutputStream(new
File(path+"/"+filename));
                    OutputStreamWriter outputWriter=new OutputStreamWriter(fileout);
                    outputWriter.write(txtContent.getText().toString());
                    outputWriter.close();

                    //display file saved message
                    Toast.makeText(getBaseContext(), "File Saved successfully!",
                    Toast.LENGTH_SHORT).show();

            } catch (Exception e) {
                    Toast.makeText(getBaseContext(), e.getLocalizedMessage(),
                                    Toast.LENGTH_SHORT).show();
            }
    }


    public void readFromFile(String path,String filename)
    {
        try {
                    FileInputStream fileIn=new FileInputStream(path+"/"+filename);
                    InputStreamReader inputReader= new InputStreamReader(fileIn);

                    BufferedReader br=new BufferedReader(inputReader);
                    String data=br.readLine();
                    while(data!=null)
                    {
                        txtContent.append(data);
                        data=br.readLine();
                    }
                    br.close();


            } catch (Exception e) {
                    Toast.makeText(getBaseContext(),e.getLocalizedMessage(),
                                    Toast.LENGTH_SHORT).show();
            }
    }

    public void onShowCreateDialog()
    {
        AlertDialog.Builder builder=new AlertDialog.Builder(this);
        final View dialogView=getLayoutInflater().inflate(R.layout.dialog_layout, null);
        builder.setView(dialogView);
        builder.setPositiveButton("Ok", new DialogInterface.OnClickListener() {

                    @Override
```

```
                        public void onClick(DialogInterface arg0, int arg1) {
                                // TODO Auto-generated method stub
                                EditText
txtFilename=(EditText)dialogView.findViewById(R.id.txt_filename);

        filepath=Environment.getExternalStorageDirectory().getAbsolutePath();
                                filename=txtFilename.getText().toString();
                                File f=new File(filepath+"/"+filename);
                                try {
                                        f.createNewFile();
                                } catch (IOException e) {
                                        // TODO Auto-generated catch block
                                        Toast.makeText(getBaseContext(),
""+e.getLocalizedMessage(), Toast.LENGTH_LONG).show();
                                }

                                lblFile.setText(filepath+"/"+filename);


                        }
                });
        builder.setNegativeButton("Cancel", null);
        AlertDialog dialog=builder.create();
        dialog.show();
  }


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

                if(v.equals(btnOpen))
                {
                        Intent it=new Intent(Intent.ACTION_GET_CONTENT);
                        //it.setType("*.*");
                         it.setType("file/*");
                        startActivityForResult(it, 0);
                }
                else if(v.equals(btnCreate))
                {
                        onShowCreateDialog();
                }
                else if(v.equals(btnSave))
                {
                        writeToFile(filepath, filename);
                }
```

```
        }
}
```

OUTPUT:



3. Write a program to create an activity with two text boxes (date /time and note contents). Create a content provider to store the date and time and note contents to the database. Create another program with a Button (Fetch Today Notes) on press must access the note provider and display the notes stored for today's date.

Content Provider part

ActivityMain.xml

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

   <TextView
      android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:text="Enter Date:" />

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

     <TextView
         android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Enter Note Content:" />

       <EditText
         android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/txt_Content"
        android:height="200dp" />

         <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add Note"
        android:id="@+id/btn_add_note" />

</LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.p3noteprovider"
    android:versionCode="1"
    android:versionName="1.0" >

    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="18" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="com.example.p3noteprovider.MainActivity"
            android:label="@string/app_name" >
```

```
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

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

    <provider android:name="NotesProvider"
     android:authorities="com.example.notesprovider"
     android:exported="true"/>

  </application>

</manifest>
```

MainActivity.java

```
package com.example.p3noteprovider;

import android.net.Uri;
import android.os.Bundle;
import android.app.Activity;
import android.content.ContentValues;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {

        EditText txtDate,txtContent;
        Button btnAddNote;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    txtDate=(EditText)findViewById(R.id.txt_date);
    txtContent=(EditText)findViewById(R.id.txt_Content);

    btnAddNote=(Button)findViewById(R.id.btn_add_note);
    btnAddNote.setOnClickListener(this);
  }
```

```
   @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;
   }

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

                if(v.equals(btnAddNote))
                {
                        String sdate=txtDate.getText().toString();
                        String scontent=txtContent.getText().toString();

                         ContentValues values = new ContentValues();
                    values.put("note_date",sdate);
                    values.put("content",scontent);


getContentResolver().insert(Uri.parse("content://com.example.notesprovider/notes"),
values);

                        Toast.makeText(getBaseContext(),"Data Inserted Successfully",
Toast.LENGTH_LONG).show();
                }

        }

}
```

NotesProvider.java

```
package com.example.p3noteprovider;

import android.content.ContentProvider;
import android.content.ContentValues;
import android.content.Context;
import android.content.UriMatcher;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteQueryBuilder;
import android.net.Uri;

public class NotesProvider extends ContentProvider
{
```

```
static final String URL = "content://com.example.notesprovider/notes";
SQLiteDatabase db;
ProviderDatabase dbHelper;

static final UriMatcher uriMatcher;
  static{
    uriMatcher = new UriMatcher(UriMatcher.NO_MATCH);
    uriMatcher.addURI("com.example.notesprovider", "notes",1);
  }

@Override
public int delete(Uri arg0, String arg1, String[] arg2) {
        // TODO Auto-generated method stub
        return 0;
}

@Override
public String getType(Uri arg0) {
        // TODO Auto-generated method stub
        return null;
}

@Override
public Uri insert(Uri arg0, ContentValues cv) {
        // TODO Auto-generated method stub
         db = dbHelper.getWritableDatabase();
         db.insert(ProviderDatabase.TABLE_NAME,null,cv);
         db.close();
        return null;
}

@Override
public boolean onCreate() {
        // TODO Auto-generated method stub

          dbHelper=new
ProviderDatabase(getContext(),ProviderDatabase.DATABASE_NAME+".db",null,1);
    return (db == null)? false:true;

}

@Override
public Cursor query(Uri uri, String[] arg1, String arg2, String[] arg3,
                String arg4) {
        // TODO Auto-generated method stub

        Cursor cursor=null;
```

```
                db = dbHelper.getReadableDatabase();
                  cursor=
db.query(ProviderDatabase.TABLE_NAME,arg1,arg2,arg3,arg4,null,null);
              return cursor;

    }

    @Override
    public int update(Uri arg0, ContentValues arg1, String arg2, String[] arg3) {
            // TODO Auto-generated method stub
            return 0;
    }
    }
```

ProviderDatabase.java

```
package com.example.p3noteprovider;

import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteDatabase.CursorFactory;
import android.database.sqlite.SQLiteOpenHelper;

public class ProviderDatabase extends SQLiteOpenHelper
{
  public static String DATABASE_NAME="noteprovider";
  public static String TABLE_NAME="notes";
  public static String COLUMN_DATE="note_date";
  public static String COLUMN_NOTE="content";

  public ProviderDatabase(Context context, String name,
                  CursorFactory factory, int version) {
            super(context, name, factory, version);
            // TODO Auto-generated constructor stub
  }

  @Override
  public void onCreate(SQLiteDatabase db) {
            // TODO Auto-generated method stub

            db.execSQL("create table notes (note_date TEXT,content TEXT)");


  }

  @Override
  public void onUpgrade(SQLiteDatabase db, int arg1, int arg2) {
```

```
            // TODO Auto-generated method stub

        }
        }
```

Content Resolver part

Activity_main.xml

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

   <TextView
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Enter Date to Search"/>

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

   <Button
     android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:id="@+id/btn_search"
      android:text="Search"/>

     <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Data To Show"
      android:id="@+id/lbl_message"/>

</LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p3providerclient"
   android:versionCode="1"
   android:versionName="1.0" >
```

```
    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="18" />

    <application
        android:allowBackup="true"
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="com.example.p3providerclient.MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

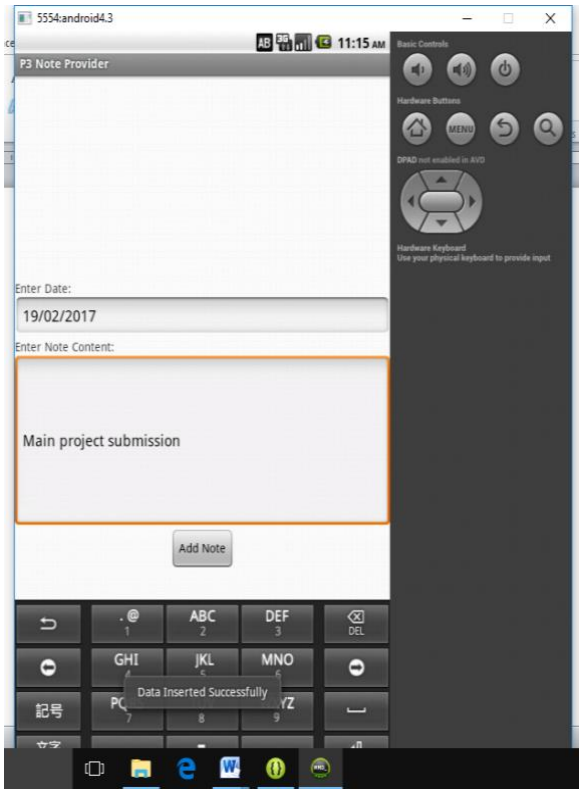
MainActivity.java

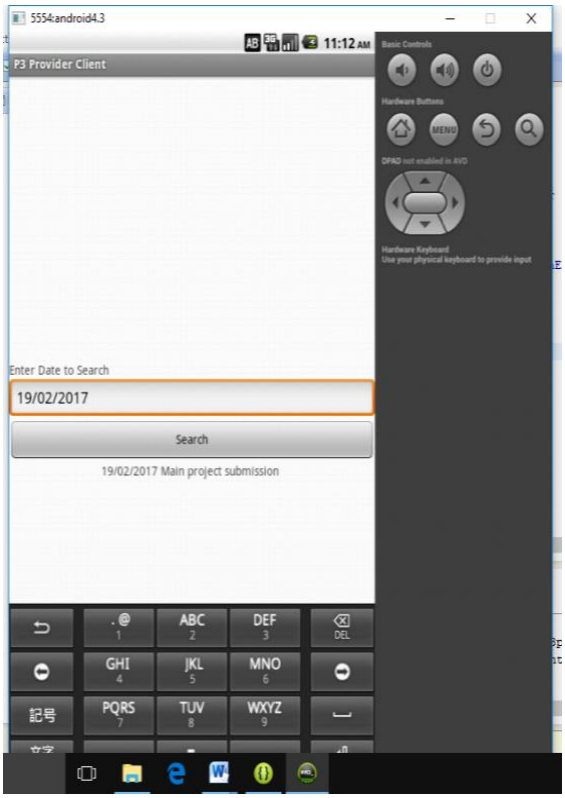
```
package com.example.p3providerclient;

import android.net.Uri;
import android.os.Bundle;
import android.app.Activity;
import android.content.ContentValues;
import android.database.Cursor;
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;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener {

        EditText txtSearch;
        Button btnSearch;
```

```
        TextView lblMessage;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_main);
       txtSearch=(EditText)findViewById(R.id.txt_search);
       lblMessage=(TextView)findViewById(R.id.lbl_message);

       btnSearch=(Button)findViewById(R.id.btn_search);
       btnSearch.setOnClickListener(this);

    }


    @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;
    }


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

                if(v.equals(btnSearch))
                {
                        String searchDate=txtSearch.getText().toString();
         String where="note_date=?";
                    Cursor
cursor=getContentResolver().query(Uri.parse("content://com.example.notesprovider/notes")
,new String[]{"note_date","content"},where, new String[]{searchDate},null);

                    if(cursor!=null&&cursor.moveToNext())
                    {

                        String ndate=cursor.getString(0);
                        String content=cursor.getString(1);

                        lblMessage.setText(ndate+" "+content+"\n");
                    }
                    else
                    {
```

```
                    Toast.makeText(getBaseContext(),"No Data Available",
Toast.LENGTH_LONG).show();
                }
            }

        }

}
```

OUTPUT:





4. Create a program to create an activity with two buttons start and stop. On pressing start button the program must start the counter and must keep on counting until stop button is pressed.

Activity_main.xml

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

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="counter"
android:layout_gravity="center"
android:id="@+id/lbl_counter"/>

<Button android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="start"
      android:layout_gravity="center"
      android:id="@+id/btn_start"/>

<Button android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="stop"
      android:layout_gravity="center"
      android:id="@+id/btn_stop"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.p4;

    import android.os.Bundle;
    import android.os.Handler;
    import android.os.Message;
    import android.app.Activity;
    import android.view.Menu;
    import android.view.View;
    import android.view.View.OnClickListener;
```

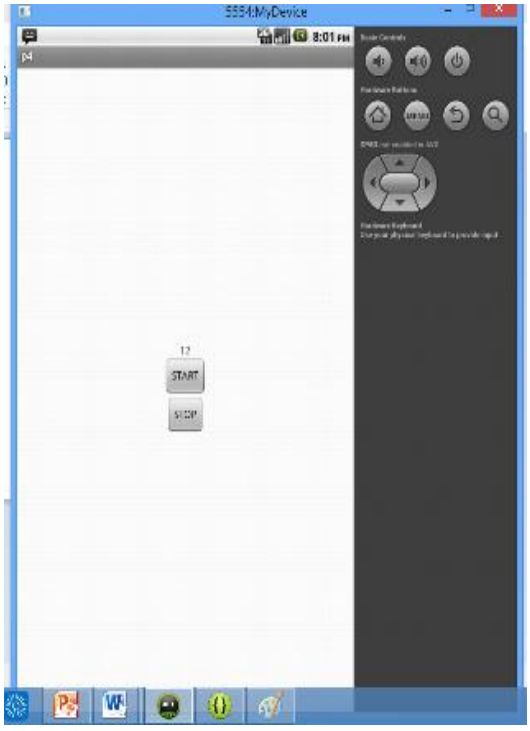
```
import android.widget.Button;
import android.widget.TextView;

public class MainActivity extends Activity implements OnClickListener, Runnable{

    int i=0;
    TextView lblcounter;
    Button btnstart,btnstop;
    Thread thread;

    boolean running=false;

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

     btnstart=(Button)findViewById(R.id.btn_start);
     btnstop=(Button)findViewById(R.id.btn_stop);
     btnstart.setOnClickListener(this);
     btnstop.setOnClickListener(this);

     lblcounter=(TextView)findViewById(R.id.lbl_counter);

  }


  @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;
  }


    @Override
    public void onClick(View v) {
            // TODO Auto-generated method stub
            if(v.equals(btnstart))
            {
                    running=true;
            thread=new Thread(this);
            thread.start();
            }

            else if(v.equals(btnstop))
            {
```

```
                //thread.interrupt();
                running=false;
            }


    }

    Handler hand=new Handler()
    {
            public void handleMessage(Message m)
            {
                lblcounter.setText(""+m.what);
            }
    };

    @Override
    public void run() {
            // TODO Auto-generated method stub
            //int i=0;

            while(i<100 && running)

            {
                try {
                    Thread.sleep(1000);
                } catch (InterruptedException e) {
                    // TODO Auto-generated catch block
                    e.printStackTrace();
                }
                hand.sendEmptyMessage(i);
                i++;
                // lblcounter.setText(""+i);

            }

    }

}
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p4"
   android:versionCode="1"
   android:versionName="1.0">

<uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18" />


<application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme">
<activity
         android:name="com.example.p4.MainActivity"
         android:label="@string/app_name">
<intent-filter>
<action android:name="android.intent.action.MAIN" />

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

</manifest>
```

OUTPUT::



5. **Create a program to receive the incoming SMS to the phone and put a notification on screen, on clicking the notification it must display sender number and message content on screen.**

Activity_main.xml

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

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Sender Number"
      android:paddingBottom="50px"
      android:id="@+id/lbl_number"/>

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Message content"
      android:id="@+id/lbl_message"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.p5;
import android.os.Bundle;
import android.app.Activity;
import android.view.Menu;
import android.widget.TextView;

public class MainActivity extends Activity {
        TextView lblnumber,lblmessage;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      lblnumber=(TextView)findViewById(R.id.lbl_number);
      lblmessage=(TextView)findViewById(R.id.lbl_message);
      Bundle b= getIntent().getBundleExtra("data");
```

```
        if(b!=null)
        {
        String number=b.getString("number");
        String content=b.getString("content");

        lblnumber.setText(number);
        lblmessage.setText(content);
        }
        }
    @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;
     }
}
```

MySmsReceiver.java

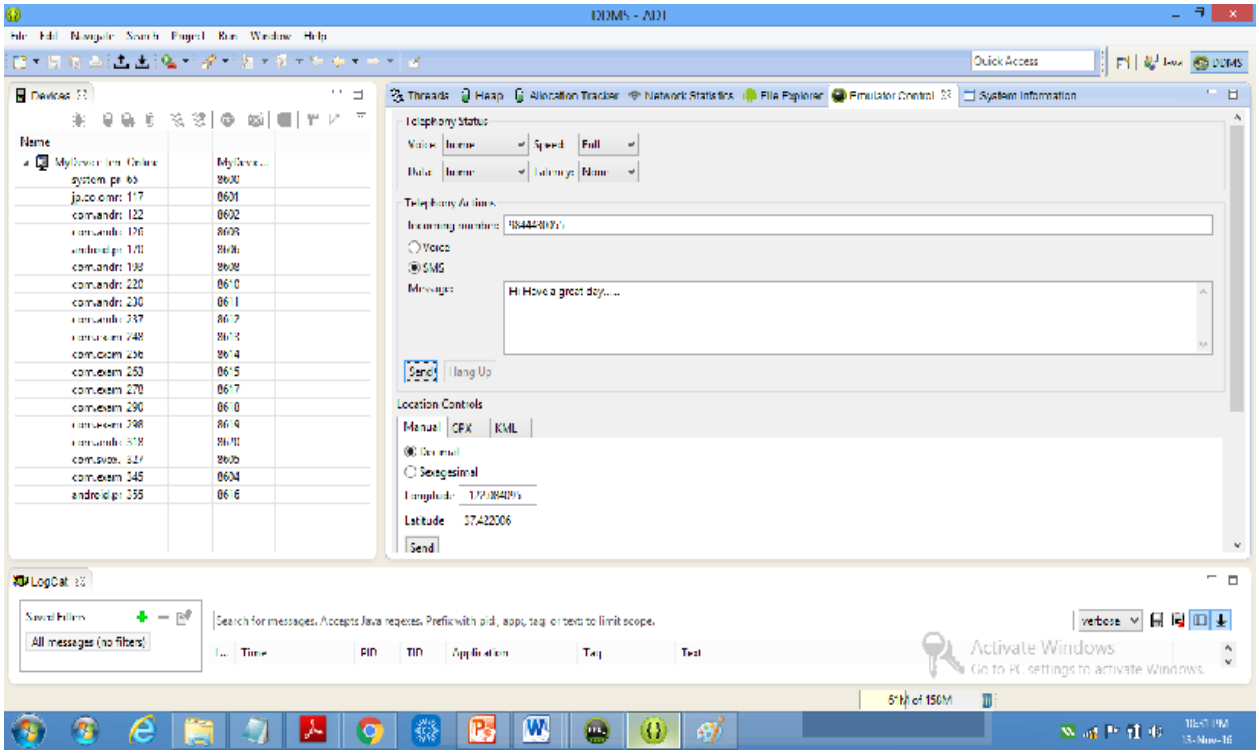
```
package com.example.p5;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.os.Bundle;
import android.telephony.SmsMessage;

public class MySmsReceiver extends BroadcastReceiver{
        @Override
        public void onReceive(Context arg0, Intent arg1) {
                // TODO Auto-generated method stub
                Object[] objmessages=(Object[])arg1.getExtras().get("pdus");
                for(int i=0; i<objmessages.length;i++)
                {
                        SmsMessage m=SmsMessage.createFromPdu((byte[])objmessages[i]);
                        Bundle b1=new Bundle();
                        b1.putString("number", m.getOriginatingAddress());
                        b1.putString("content", m.getMessageBody());
                        Intent it=new Intent(arg0, MainActivity.class);
                        it.putExtra("data", b1);
                        it.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
                        arg0.startActivity(it);
                        break;
                }
```

```
        }
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p5"
   android:versionCode="1"
   android:versionName="1.0" >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18" />
   <uses-permission android:name="android.permission.RECEIVE_SMS"/>
   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
         android:name="com.example.p5.MainActivity"
         android:label="@string/app_name" >
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
         </intent-filter>
      </activity>
      <receiver android:name="com.example.p5.MySmsReceiver">
       <intent-filter>
         <action android:name="android.provider.Telephony.SMS_RECEIVED"/>
       </intent-filter>
      </receiver>
         </application>
</manifest>
```

OUTPUT::


DDMS - ADT
Devices
Name
Threads
Heap
Allocation Tracker
Network Statistics
File Explorer
Emulator Control
System Information
Telephony Status
Telephony Actions
Voice
SMS
Hi Have a great day... ..
Send
Hang Up
Location Controls
Manual
GPX
KML
Sexagesimal
Latitude
37.422006
Send
LogCat
All messages (no filters)
Search for messages. Accepts Java regexes. Prefix with pid:, app:, tag: or text: to limit scope.
verbose
Time
PID
TID
Application
Tag
Text
Activate Windows
Go to PC settings to activate Windows.

6. Create a program to create a service that will put a notification on the screen every 5 seconds.

Activity_main.xml

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

   <Button
     android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Start Notification"
      android:layout_gravity="center"
      android:id="@+id/btn_start"/>


   <Button
     android:layout_width="wrap_content"
      android:layout_height="wrap_content"
```

```
    android:text="Stop Notification"
    android:layout_gravity="center"
    android:id="@+id/btn_stop"/>
  </LinearLayout>
```

MainActivity.java

```
package com.example.p6;
import android.os.Bundle;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener{
        Button btnstart,btnstop;
          @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    btnstart=(Button)findViewById(R.id.btn_start);
    btnstart.setOnClickListener(this);
    btnstop=(Button)findViewById(R.id.btn_stop);
    btnstop.setOnClickListener(this);
      }
  @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;
  }
@Override
        public void onClick(View v) {
                // TODO Auto-generated method stub

                if(v.equals(btnstart))
                {
                        Intent it=new Intent(this,ServiceClass.class);
                        Bundle b=new Bundle();
                        b.putBoolean("stop", true);
                        it.putExtra("data", b);
                        startService(it);
```

```
                }
                else
                {
                        Intent it=new Intent(this,ServiceClass.class);
                        stopService(it);
                }
        }
}
```

ServiceClass.Java

```
package com.example.p6;

import android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.app.Service;
import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import android.os.IBinder;
import android.os.Message;
import android.support.v4.app.NotificationCompat;
import android.view.ViewDebug.FlagToString;
import android.widget.Toast;

public class ServiceClass extends Service{

        boolean running=false;
        MyThread thread;


        public void onCreate()
        {
                super.onCreate();
                Toast.makeText(getBaseContext(), "Service Created",
Toast.LENGTH_LONG).show();
                running=true;
                thread=new MyThread();
                thread.start();
        }


        public int onStartCommand(Intent intent, int flags,int startId)
        {
                super.onStartCommand(intent, flags, startId);
```

```
		Toast.makeText(getBaseContext(), "Service started",
Toast.LENGTH_LONG).show();
		Bundle b=intent.getBundleExtra("data");
		running=b.getBoolean("stop");

		if(!thread.isAlive())
		{
			thread=new MyThread();
			thread.start();
		}

		return Service.START_NOT_STICKY;
	}

	@Override
	public  IBinder  onBind(Intent arg0) {
		// TODO Auto-generated method stub
		return null;
	}

	public void onDestroy()
	{
		running=false;
		Toast.makeText(getBaseContext(), "Service stoped",
Toast.LENGTH_LONG).show();
		super.onDestroy();
	}

	Handler hand=new Handler()
	{
		public void handleMessage(Message m)
		{
			NotificationManager
manager=(NotificationManager)getSystemService(NOTIFICATION_SERVICE);
			NotificationCompat.Builder builder=new
NotificationCompat.Builder(getBaseContext());
			builder.setContentTitle("From Service");
			builder.setContentText("Hai  " +m.what);
			builder.setSmallIcon(R.drawable.ic_launcher);
			builder.setContentIntent(PendingIntent.getActivity(getBaseContext(), 1,
new Intent(getBaseContext(),MainActivity.class),1));
			Notification nof=builder.build();
			manager.notify(100, nof);

		}

	};
```

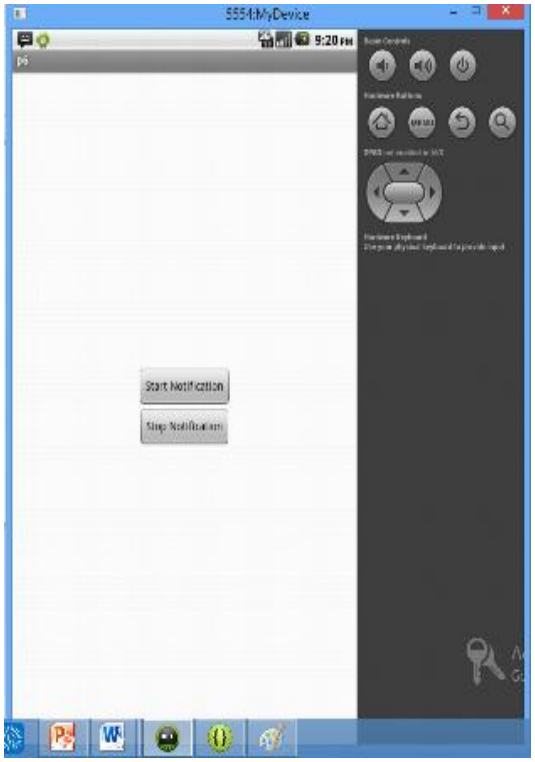
```
        class MyThread extends Thread
        {
                public void run()
                {
                        int i=0;
                        while(running)
                        {

                        try {
                                Thread.sleep(5000);
                        } catch (InterruptedException e) {
                                // TODO Auto-generated catch block
                                e.printStackTrace();
                        }

                        hand.sendEmptyMessage(i++);
                        }
                }
        }
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p6"
   android:versionCode="1"
   android:versionName="1.0" >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18" />

   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
         android:name="com.example.p6.MainActivity"
         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="ServiceClass"></service>

    </application>

</manifest>
```

OUTPUT::



7. Create an .aidl service to do add, subtraction and multiplication and create another application with two buttons to read the inputs and three button add,subtract and multiply to call add,subtract and multiply operation on .aidl service.

Part-1 (has an empty layout)

Activity_main.xml

-NA-

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p7"
   android:versionCode="1"
   android:versionName="1.0" >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18" />

   <application
      android:allowBackup="true"
```

```
        android:icon="@drawable/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="com.example.p7.MainActivity"
            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="MyCalService">
         <intent-filter>
            <action android:name="com.simple.cal"/>
         </intent-filter>
        </service>


    </application>

</manifest>
```

calculator.aidl

Create a new package and under this , new ->file->save with .aidl extension

```
package  com.example.cal;

 interface calculator
{
int add(int a, int b);
int sub(int a, int b);
int mul(int a, int b);
}
```

MyCalService.java

```
package com.example.p7;

import com.example.cal.calculator;

import android.app.Service;
import android.content.Intent;
```

```
import android.os.IBinder;
import android.os.RemoteException;

public class MyCalService extends Service{

	@Override
	public IBinder onBind(Intent arg0) {
		// TODO Auto-generated method stub
		return stub;
	}

	calculator.Stub stub=new calculator.Stub() {

		@Override
		public int sub(int a, int b) throws RemoteException {
			// TODO Auto-generated method stub
			return a-b;
		}

		@Override
		public int mul(int a, int b) throws RemoteException {
			// TODO Auto-generated method stub
			return a*b;
		}

		@Override
		public int add(int a, int b) throws RemoteException {
			// TODO Auto-generated method stub
			return a+b;
		}
	};
}
```

Part-2

Activity_main.xml

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

```
<TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Enter first number" />

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

<TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="Enter second number" />

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

 <TextView
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="result"
   android:id="@+id/txt_result"/>

<LinearLayout
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="horizontal"
android:gravity="center">

<Button android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="add"
   android:layout_gravity="center"
   android:id="@+id/btn_add"/>

<Button android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="sub"
   android:layout_gravity="center"
   android:id="@+id/btn_sub"/>

 <Button android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:text="mul"
   android:layout_gravity="center"
```

```
      android:id="@+id/btn_mul"/>

</LinearLayout>
</LinearLayout>
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p7_1"
   android:versionCode="1"
   android:versionName="1.0" >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18" />

   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
         android:name="com.example.p7_1.MainActivity"
         android:label="@string/app_name" >
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />

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

     </application>

</manifest>
```

calculator.aidl

Create a new package and under this , new ->file->save with .aidl extension

```
package  com.example.cal;

 interface calculator
{
int add(int a, int b);
int sub(int a, int b);
```

```
int mul(int a, int b);
 }
```

MainActivity.java

```
package com.example.p7_1;

import com.example.cal.calculator;

import android.os.Bundle;
import android.os.IBinder;
import android.os.RemoteException;
import android.app.Activity;
import android.content.ComponentName;
import android.content.Intent;
import android.content.ServiceConnection;
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;
import android.widget.Toast;

public class MainActivity extends Activity implements OnClickListener, ServiceConnection{

        EditText txtfirst, txtsecond;
        Button btnadd,btnsub,btnmul;
        TextView txtresult;

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

      txtfirst=(EditText)findViewById(R.id.txt_first);
      txtsecond=(EditText)findViewById(R.id.txt_second);
      txtresult=(TextView)findViewById(R.id.txt_result);
      btnadd=(Button)findViewById(R.id.btn_add);
      btnadd.setOnClickListener(this);
      btnsub=(Button)findViewById(R.id.btn_sub);
      btnsub.setOnClickListener(this);
      btnmul=(Button)findViewById(R.id.btn_mul);
      btnmul.setOnClickListener(this);
```

```
   bindService(new Intent("com.simple.cal"), this, BIND_AUTO_CREATE);


}

@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;
}


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

      String s1=txtfirst.getText().toString();
      String s2=txtsecond.getText().toString();

      int a=Integer.parseInt(s1);
      int b=Integer.parseInt(s2);


      if(v.equals(btnadd))
      {
       try {
                  int result=cal.add(a,b);
                  txtresult.setText(""+result);
            } catch (RemoteException e) {
                  // TODO Auto-generated catch block
                  e.printStackTrace();
            }
      }

      else if(v.equals(btnsub))
      {
            try {
                  int result=cal.sub(a,b);
                  txtresult.setText(""+result);
            } catch (RemoteException e) {
                  // TODO Auto-generated catch block
                  e.printStackTrace();
            }
      }

      else if(v.equals(btnmul))
```

```
        {
                try {
                        int result=cal.mul(a,b);
                        txtresult.setText(""+result);
                } catch (RemoteException e) {
                        // TODO Auto-generated catch block
                        e.printStackTrace();
                }
        }
        }

        @Override
        public void onServiceConnected(ComponentName arg0, IBinder arg1) {
                // TODO Auto-generated method stub
                Toast.makeText(getBaseContext(), "Service Connected",
Toast.LENGTH_LONG).show();
           cal=(calculator)calculator.Stub.asInterface(arg1);



        }

        @Override
        public void onServiceDisconnected(ComponentName arg0) {
                // TODO Auto-generated method stub

        }

    }
```

OUTPUT::

Addition

Subtraction

Multiplication

8. Create an activity like a phone dialer with (1,2,3,4,5,6,7,8,9,0,*,#) buttons and call and save button on pressing the call button, it must call the phone number and on pressing the save button it must save the number to the phone contacts.

activity_main.xml

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

    <RelativeLayout
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     >



        <Button
       android:id="@+id/btn_del"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:text="Del"
       android:layout_alignParentRight="true" />

        <EditText
     android:id="@+id/txt_display"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_toLeftOf="@id/btn_del"
     android:layout_alignBaseline="@id/btn_del" />


      </RelativeLayout>


   <LinearLayout
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_gravity="center"
     android:orientation="horizontal" >
```

```
    <Button
        android:id="@+id/btn_one"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="1" />

    <Button
        android:id="@+id/btn_two"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="2" />

    <Button
        android:id="@+id/btn_three"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="3" />
</LinearLayout>

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:orientation="horizontal" >

    <Button
        android:id="@+id/btn_four"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="4" />

    <Button
        android:id="@+id/btn_five"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="5" />

    <Button
        android:id="@+id/btn_six"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
```

```
      android:text="6" />
</LinearLayout>

<LinearLayout
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_gravity="center"
   android:orientation="horizontal" >

   <Button
      android:id="@+id/btn_seven"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_gravity="center"
      android:text="7" />

   <Button
      android:id="@+id/btn_eight"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_gravity="center"
      android:text="8" />

   <Button
      android:id="@+id/btn_nine"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_gravity="center"
      android:text="9" />
</LinearLayout>

<LinearLayout
   android:layout_width="wrap_content"
   android:layout_height="wrap_content"
   android:layout_gravity="center"
   android:orientation="horizontal" >

   <Button
      android:id="@+id/btn_star"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_gravity="center"
      android:text="*" />

   <Button
      android:id="@+id/btn_zero"
      android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="0" />

    <Button
        android:id="@+id/btn_ash"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="#" />
  </LinearLayout>

   <LinearLayout
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:gravity="center"
     android:orientation="horizontal" >
  <Button
     android:id="@+id/btn_call"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:gravity="center"
     android:text="call" />

  <Button
     android:id="@+id/btn_save"
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:text="save" />

  </LinearLayout>

</LinearLayout>
```

MainActivity.java

```
package com.example.p8;

import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.app.Activity;
import android.content.Intent;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
```

```
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener {

        EditText txtNumber;

        Button
btnOne,btnTwo,btnThree,btnFour,btnFive,btnSix,btnSeven,btnEight,btnNine,btnZero,btnCall,
btnSave,btnDel,btnStar,btnHash;



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

      txtNumber=(EditText)findViewById(R.id.txt_display);

      btnOne=(Button)findViewById(R.id.btn_one);
      btnOne.setOnClickListener(this);

      btnTwo=(Button)findViewById(R.id.btn_two);
      btnTwo.setOnClickListener(this);

      btnThree=(Button)findViewById(R.id.btn_three);
      btnThree.setOnClickListener(this);

      btnFour=(Button)findViewById(R.id.btn_four);
      btnFour.setOnClickListener(this);

      btnFive=(Button)findViewById(R.id.btn_five);
      btnFive.setOnClickListener(this);


      btnSix=(Button)findViewById(R.id.btn_six);
      btnSix.setOnClickListener(this);

      btnSeven=(Button)findViewById(R.id.btn_seven);
      btnSeven.setOnClickListener(this);

      btnEight=(Button)findViewById(R.id.btn_eight);
      btnEight.setOnClickListener(this);

      btnNine=(Button)findViewById(R.id.btn_nine);
      btnNine.setOnClickListener(this);
```

```
    btnZero=(Button)findViewById(R.id.btn_zero);
    btnZero.setOnClickListener(this);

    btnSave=(Button)findViewById(R.id.btn_save);
    btnSave.setOnClickListener(this);

    btnCall=(Button)findViewById(R.id.btn_call);
    btnCall.setOnClickListener(this);

    btnStar=(Button)findViewById(R.id.btn_star);
    btnStar.setOnClickListener(this);

    btnHash=(Button)findViewById(R.id.btn_ash);
    btnHash.setOnClickListener(this);

    btnDel=(Button)findViewById(R.id.btn_del);
    btnDel.setOnClickListener(this);


}


@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;
}


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

                if(v.equals(btnOne))
                {
                        txtNumber.append("1");
                }
                else if(v.equals(btnTwo))
                {
                        txtNumber.append("2");
                }
                else if(v.equals(btnThree))
                {
                        txtNumber.append("3");
                }
```

```
else if(v.equals(btnFour))
{
        txtNumber.append("4");
}
else if(v.equals(btnFive))
{
        txtNumber.append("5");
}
else if(v.equals(btnSix))
{
        txtNumber.append("6");
}
else if(v.equals(btnSeven))
{
        txtNumber.append("7");
}
else if(v.equals(btnEight))
{
        txtNumber.append("8");
}
else if(v.equals(btnNine))
{
        txtNumber.append("9");
}
else if(v.equals(btnZero))
{
        txtNumber.append("0");
}
else if(v.equals(btnStar))
{
        txtNumber.append("*");
}
else if(v.equals(btnHash))
{
        txtNumber.append("#");
}
else if(v.equals(btnDel))
{
        String num=txtNumber.getText().toString();
        if(num.length()>0)
        {
        num=num.substring(0,num.length()-1);
        }
        txtNumber.setText(num);
}
else if(v.equals(btnCall))
{
```

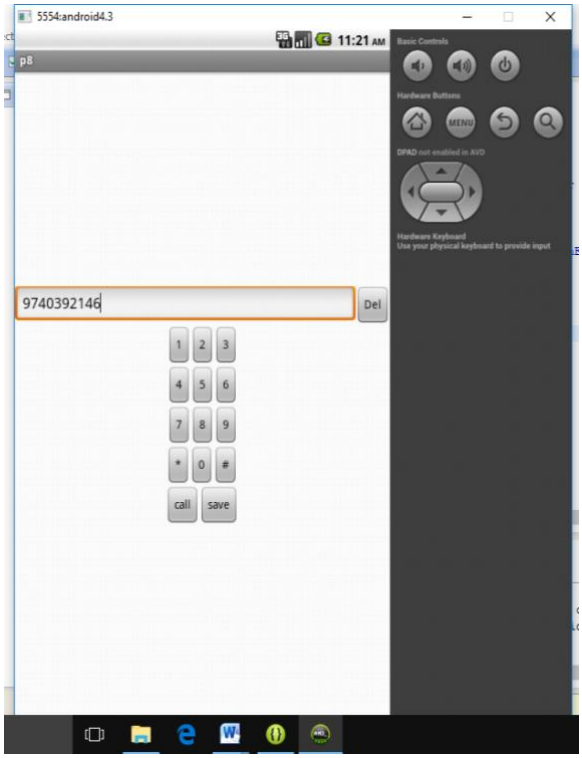
```
                String num=txtNumber.getText().toString();
                Intent it=new Intent(Intent.ACTION_CALL);
                it.setData(Uri.parse("tel:"+num));
                startActivity(it);
            }
            else if(v.equals(btnSave))
            {
                String num=txtNumber.getText().toString();
                Intent intent = new Intent(Intent.ACTION_INSERT,
ContactsContract.Contacts.CONTENT_URI);
                intent.putExtra(ContactsContract.Intents.Insert.PHONE,num);
                startActivity(intent);

            }


        }

}
```

Manifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   package="com.example.p8"
   android:versionCode="1"
   android:versionName="1.0" >

   <uses-sdk
      android:minSdkVersion="8"
      android:targetSdkVersion="18" />
   <uses-permission  android:name="android.permission.CALL_PHONE"/>

   <application
      android:allowBackup="true"
      android:icon="@drawable/ic_launcher"
      android:label="@string/app_name"
      android:theme="@style/AppTheme" >
      <activity
         android:name="com.example.p8.MainActivity"
         android:label="@string/app_name" >
         <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
```

```
        </intent-filter>
    </activity>
</application>

</manifest>
```

OUTPUT:




5554:android4.3
11:28 AM
New contact
Phone-only (unsynced) contact
MAHESH
S
Phone
Home
990-100-0078
Saving contact...
Done
Revert
Submission Singapura Singapore She See
Service Some Should Software Support System
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard
Use your physical keyboard to provide input


5554:android4.3
11:27 AM
p8
9901000078
Del
1 2 3
4 5 6
7 8 9
* 0 #
call save
Submission Singapura Singapore She See
Service Some Should Software Support System
Contact saved.
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard
Use your physical keyboard to provide input