EXPERIMENT NO.1

Installation of Android studio.

INSTALLING AND RUNNING APPLICATIONS ON ANDROID STUDIO

Step 1 - System Requirements

The required tools to develop Android applications are open source and can be downloaded from the Web. Following is the list of software's you will need before you start your Android application programming.

Java JDK5 or later version

Java Runtime Environment (JRE)

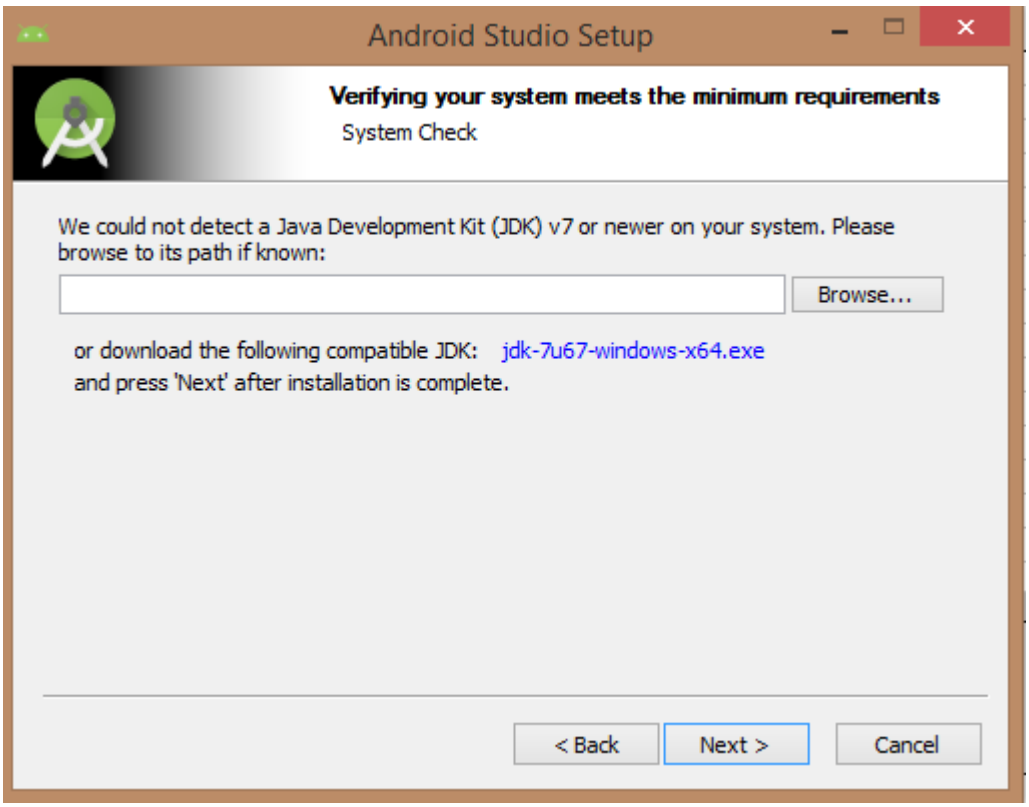
6Android Studio

Step 2 - Setup Android Studio

Android Studio is the official IDE for android application development.It works based on IntelliJ IDEA, You can download the latest version of android studio from Android Studio 2.2 Download, If you are new to installing Android Studio on windows,you will find a file, which is named as android-studio-bundle-143.3101438-windows.exe.So just download and run on windows machine according to android studio wizard guideline.

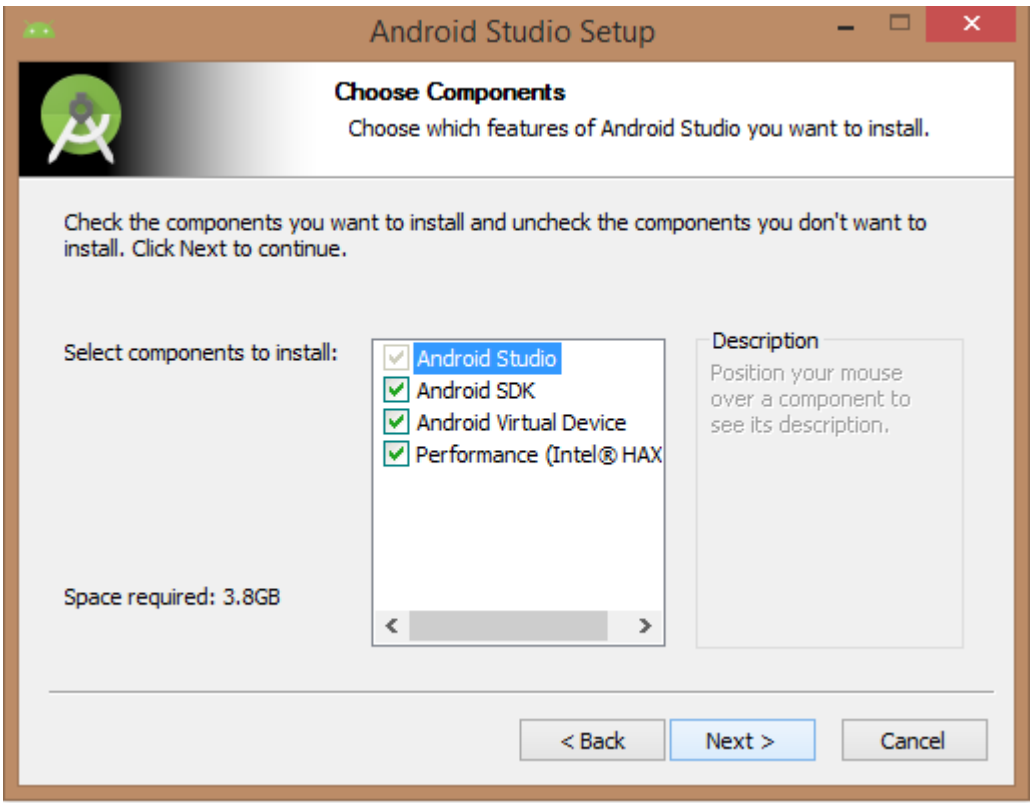
If you are installing Android Studio on Mac or Linux, You can download the latest version from Android Studio Mac Download,or Android Studio Linux Download, check the instructions provided along with the downloaded file for Mac OS and Linux. This tutorial will consider that you are going to setup your environment on Windows machine having Windows 8.1 operating system. Installation So let's launch Android Studio.exe,Make sure before launch Android Studio, Our Machine should required installed Java JDK. To install Java JDK,take a references of Android environment setup

Once you launched Android Studio, its time to mention JDK7 path or later version in android studio installer.

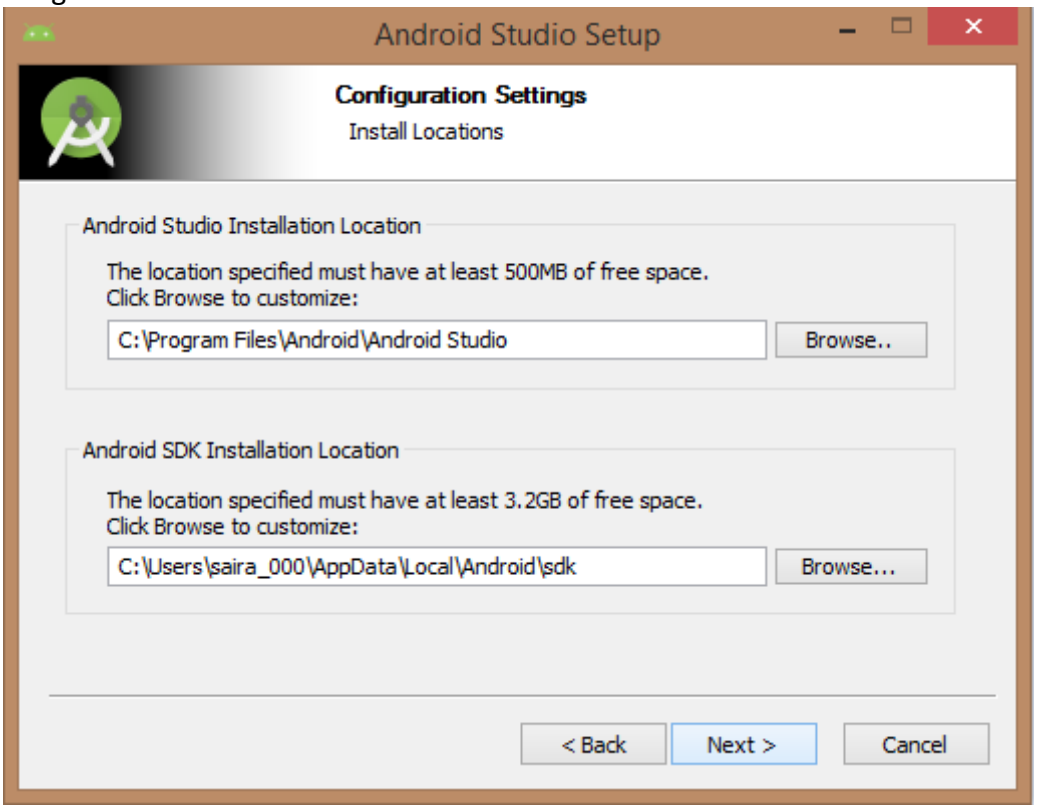


Below the image initiating JDK to android SDK

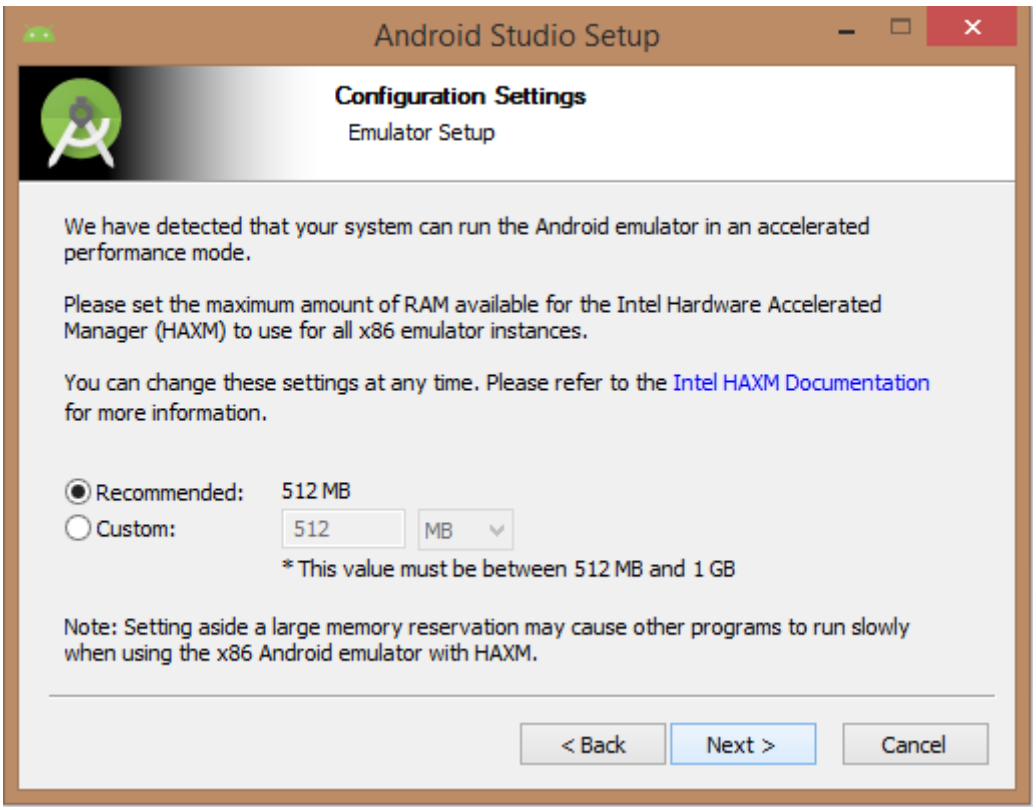
Need to check the components, which are required to create applications, below the image has selected Android Studio, Android SDK, Android Virtual Machine and performance(Intel chip).



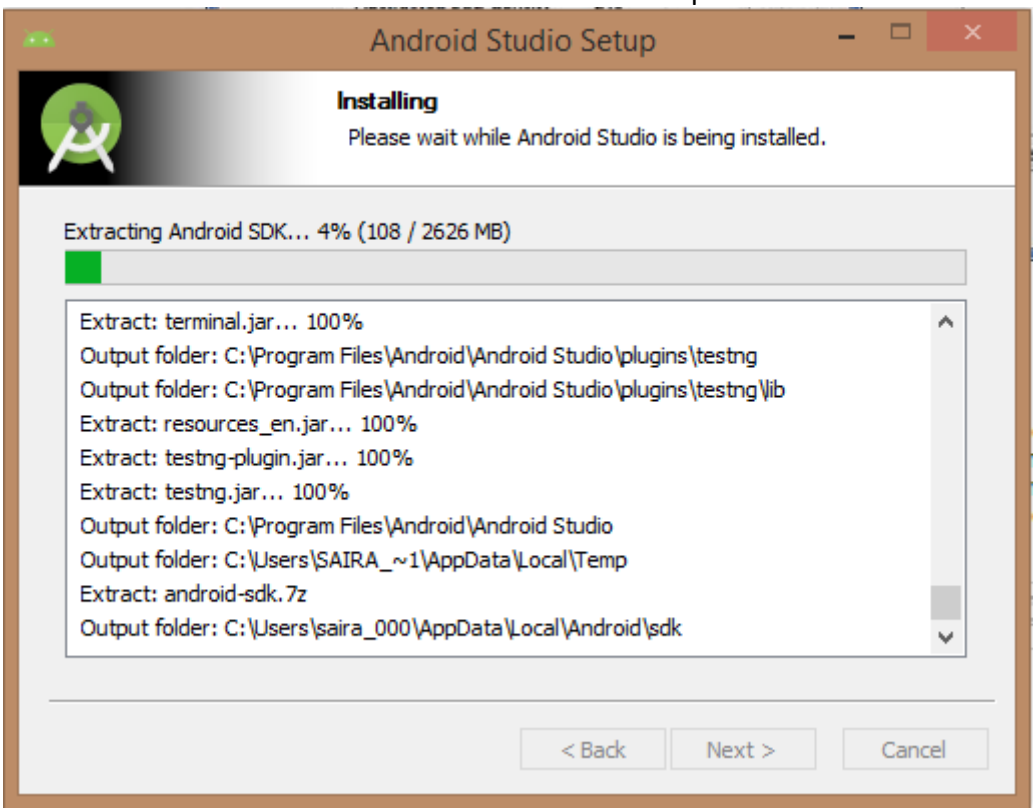
Need to specify the location of local machine path for Android studio and Android SDK, below the image has taken default location of windows 8.1 x64 bit architecture.



Need to specify the ram space for Android emulator by default it would take 512MB of local machine RAM.

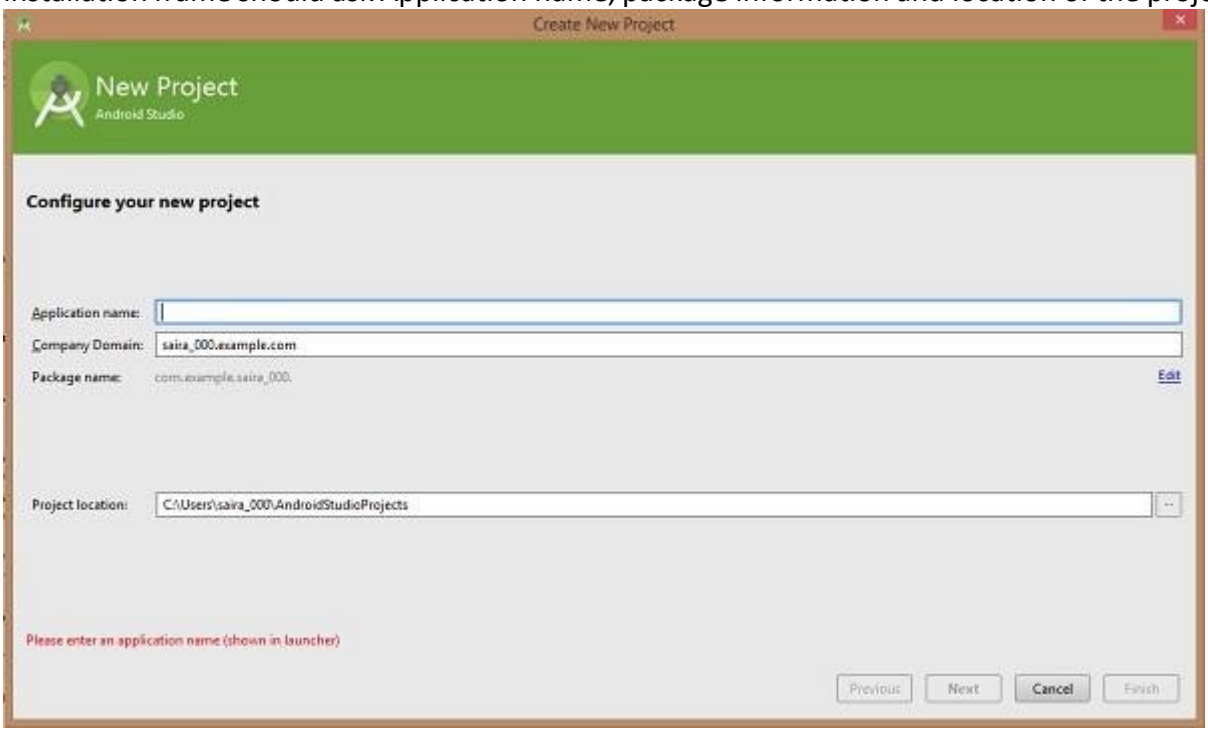


At final stage, it would extract SDK packages into our local machine, it would take a while time to finish the task and would take 2626MB of Hard disk space.



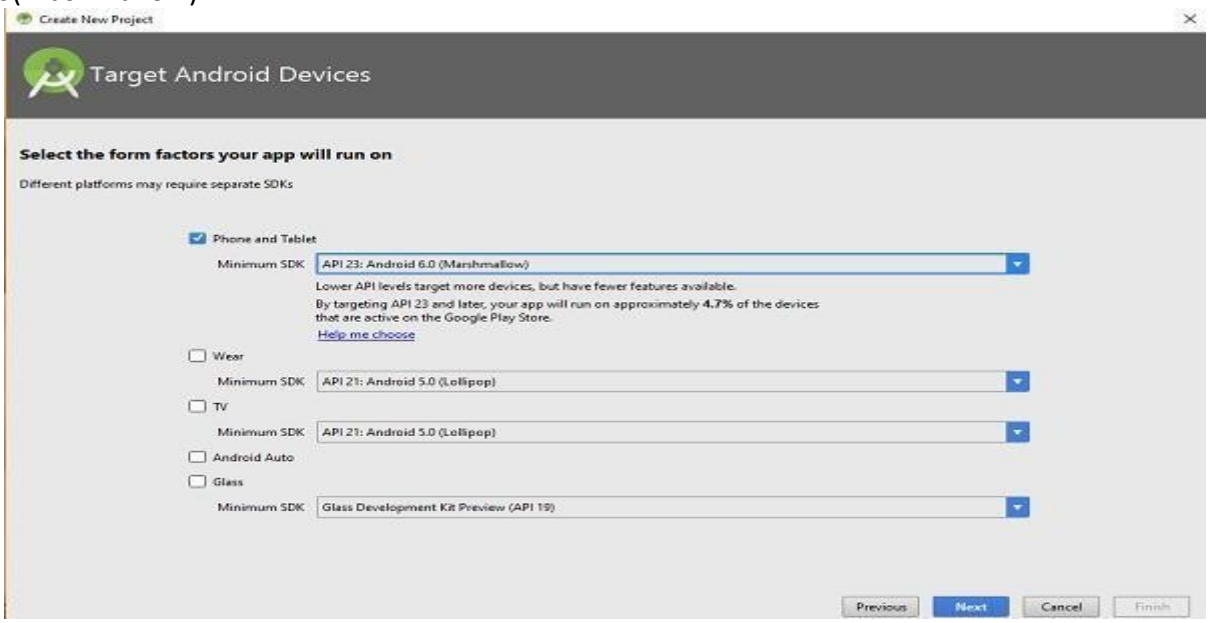
After done all above steps perfectly, you must get finish button and it gonna be open android studio project with Welcome to android studio message as shown below

You can start your application development by calling start a new android studio project. in a new installation frame should ask Application name, package information and location of the project.



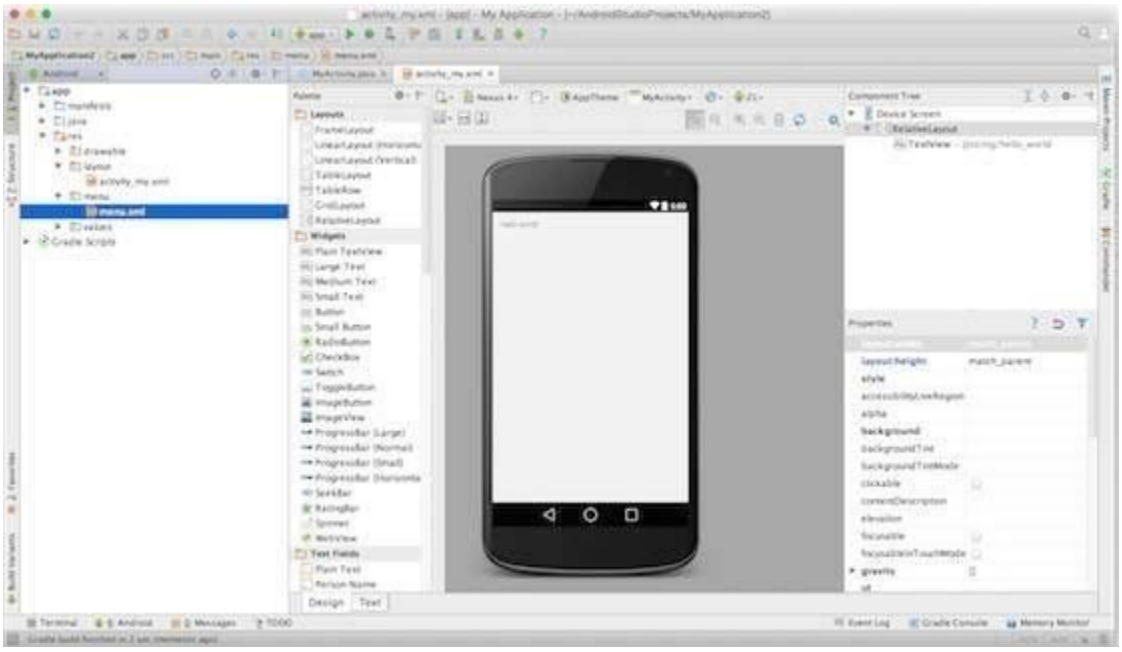
After entered application name, it going to be called select the form factors your application runs

on, here need to specify Minimum SDK, in our tutorial, I have declared as API23: Android 6.0(Mashmallow)



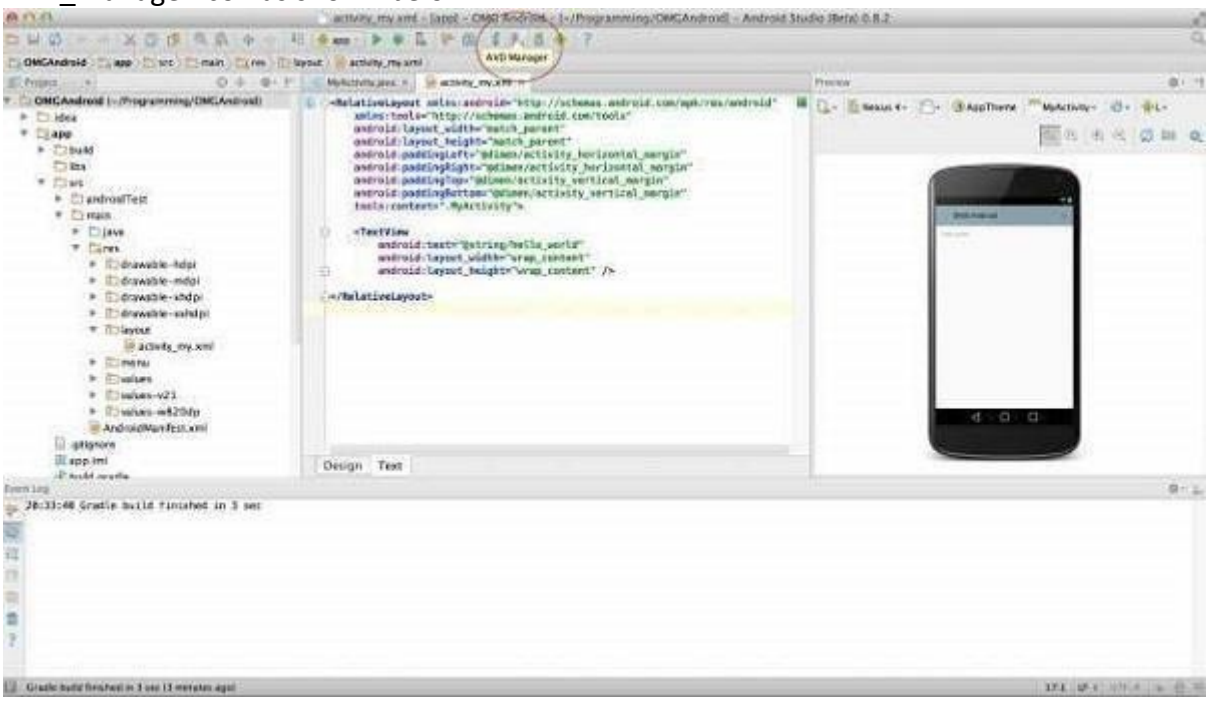
The next level of installation should contain selecting the activity to mobile, it specifies the defaultlayout for Applications

At the final stage it going to be open development tool to write the application code.



Step 3 - Create Android Virtual Device

To test your Android applications, you will need a virtual Android device. So before we start writing our code, let us create an Android virtual device. Launch Android AVD Manager Clicking AVD_Manager icon as shown below



After Click on a virtual device icon, it going to be shown by default virtual devices which are present on your SDK, or else need to create a virtual device by clicking Create new Virtual device button

If your AVD is created successfully it means your environment is ready for Android application development. If you like, you can close this window using top-right cross button. Better you re- start your machine and once you are done with this last step, you are ready to proceed for your first Android example but before that we will see few more important concepts related to Android Application Development.

Exp.No.01	Name of the Experiment: Hello World	Date:

Aim: To create the screen with input boxes for User Name, Password, Address, Gender (radio buttons for male and female), Age (numeric), Date of Birth (Date Picker), State (Spinner), and a Submit button in Android using Java, you can follow these steps:

Activity_main xml

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

   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_centerHorizontal="true"
      android:layout_centerVertical="true"
      android:padding="16dp"
      android:text="Hello, World!"
      tools:context=".MainActivity" />
</RelativeLayout>
```

MainActivity.java

```
package com.example.hello;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

Output:

Exp.No.03	Name of the Experiment: Read Text,Click Ok,Display Texts	Date:

Aim: To Ceate an application that takes the name from a text box and shows a hello message along with the name entered in the text box when the user clicks the OK button.

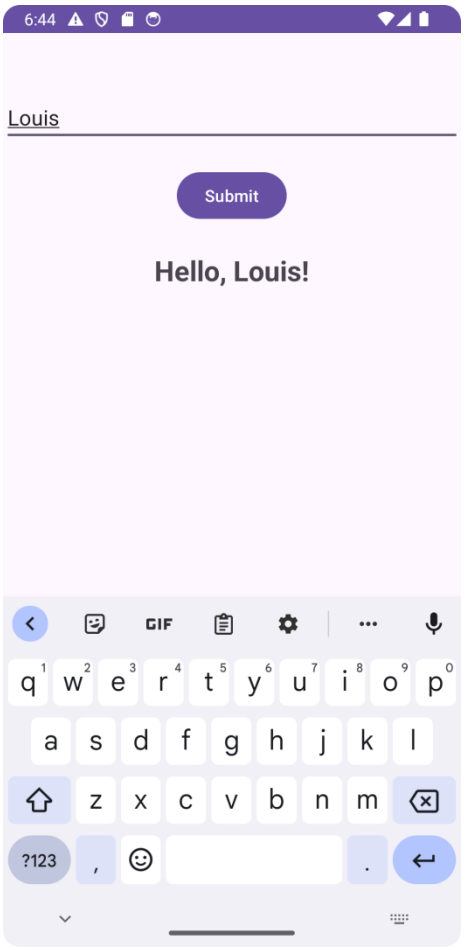
Activity_main xml

```
<?xml version="1.0" encoding="utf-8"?>
<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"
   tools:context=".MainActivity">

   <EditText
      android:id="@+id/editText"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="50dp"
      android:hint="Enter your name" />

   <Button
      android:id="@+id/button"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Submit"
      android:layout_centerHorizontal="true"
      android:layout_below="@id/editText"
      android:layout_marginTop="20dp" />

   <TextView
      android:id="@+id/helloMessage"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:textSize="24sp"
      android:textStyle="bold"
      android:layout_below="@id/button"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="24dp"
      android:visibility="gone" />
</RelativeLayout>
```

MainActivity.java

```
package com.example.exp3;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    EditText editText;
    Button button;
    TextView helloMessage;

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

        editText = findViewById(R.id.editText);
        button = findViewById(R.id.button);
        helloMessage = findViewById(R.id.helloMessage);

        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = editText.getText().toString();
                helloMessage.setText("Hello, " + name + "!");
                helloMessage.setVisibility(View.VISIBLE);
            }
        });
    }
}
```

Output:



Exp.No.4	Name of the Experiment:	Date:

Aim: To create the screen with input boxes for User Name, Password, Address, Gender (radio buttons for male and female), Age (numeric), Date of Birth (Date Picker), State (Spinner), and a Submit button in Android using Java, you can follow these steps:

Activity_main xml

```
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:padding="16dp">

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

    <EditText
      android:id="@+id/userName"
      android:hint="User Name"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_alignParentStart="true"
      android:layout_alignParentTop="true"/>

    <EditText
      android:id="@+id/password"
      android:hint="Password"
      android:inputType="textPassword"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@id/userName"
      android:layout_marginTop="16dp"/>

    <EditText
      android:id="@+id/address"
      android:hint="Address"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@id/password"
      android:layout_marginTop="16dp"/>

    <RadioGroup
      android:id="@+id/gender"
      android:orientation="horizontal"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@id/address"
```

```
    android:layout_marginTop="16dp">

    <RadioButton
        android:id="@+id/male"
        android:text="Male"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton
        android:id="@+id/female"
        android:text="Female"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
</RadioGroup>

<EditText
    android:id="@+id/age"
    android:hint="Age"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/gender"
    android:layout_marginTop="16dp"/>

<DatePicker
    android:id="@+id/dob"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/age"
    android:layout_marginTop="16dp"/>

<Spinner
    android:id="@+id/state"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/dob"
    android:layout_marginTop="16dp"/>

<Button
    android:id="@+id/submit"
    android:text="Submit"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/state"
    android:layout_marginTop="16dp"/>

<TextView
    android:id="@+id/display"
    android:layout_width="match_parent"
```

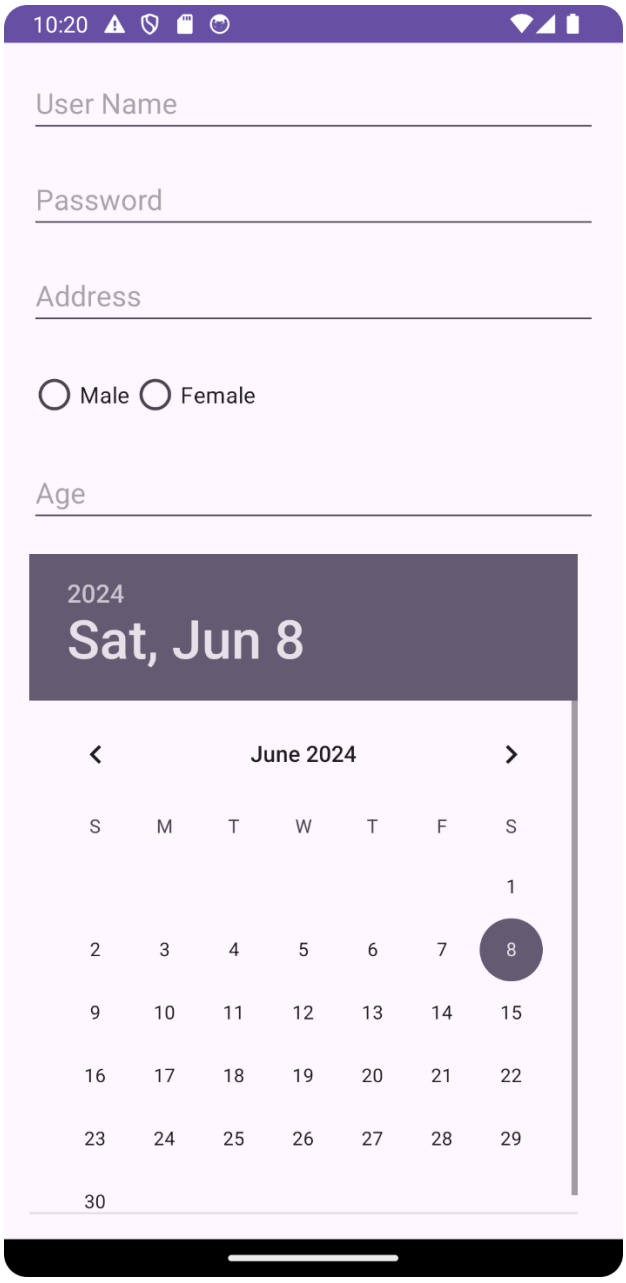
```
        android:layout_height="wrap_content"
        android:layout_below="@id/submit"
        android:layout_marginTop="16dp"
        android:textColor="@android:color/black"/>

  </RelativeLayout>
</ScrollView>
```

MainActivity.java

```
package com.example.exp4;
import android.os.Bundle;
import android.view.View;
import android.widget.*;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
   EditText userName, password, address, age;
   RadioGroup gender;
   DatePicker dob;
   Spinner state;
   TextView display;

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

      userName = findViewById(R.id.userName);
      password = findViewById(R.id.password);
      address = findViewById(R.id.address);
      age = findViewById(R.id.age);
      gender = findViewById(R.id.gender);
      dob = findViewById(R.id.dob);
      state = findViewById(R.id.state);
      display = findViewById(R.id.display);

      findViewById(R.id.submit).setOnClickListener(v -> {
         String genderText = ((RadioButton)
findViewById(gender.getCheckedRadioButtonId())).getText().toString();
         String dobText = dob.getDayOfMonth() + "/" + (dob.getMonth() + 1) + "/" +
dob.getYear();
         String stateText = state.getSelectedItem().toString();
         String result = "User Name: " + userName.getText().toString() +
               "\nPassword: " + password.getText().toString() +
               "\nAddress: " + address.getText().toString() +
               "\nGender: " + genderText +
               "\nAge: " + age.getText().toString() +
               "\nDate of Birth: " + dobText +
               "\nState: " + stateText;
```

```
            display.setText(result);
        });
    }
}
```

Output



Exp.No.05	Name of the Experiment: Activity to Activity(Intent)	Date:

Aim: **To** Design an android application to create a page using Intent and one Button and pass the Values from one Activity to the second Activity.

Activity_main xml

```
<?xml version="1.0" encoding="utf-8"?>
<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"
   tools:context=".MainActivity">

   <EditText
      android:id="@+id/editText"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter Name"
      android:layout_margin="16dp"/>

   <Button
      android:id="@+id/button"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_below="@id/editText"
      android:layout_centerHorizontal="true"
      android:text="Submit"/>

</RelativeLayout>
```

Activity_second xml

```
<?xml version="1.0" encoding="utf-8"?>
<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"
   tools:context=".SecondActivity">

   <TextView
```

```
        android:id="@+id/textViewName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        android:layout_centerInParent="true"
        android:visibility="visible"/>

</RelativeLayout>
```

MainActivity.java

```
package com.example.exp5;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    EditText editText;
    Button button;

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

        editText = findViewById(R.id.editText);
        button = findViewById(R.id.button);

        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String name = editText.getText().toString();
                Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                intent.putExtra("NAME", name);
                startActivity(intent);
            }
        });
    }
```

```
}
```

SecondActivity.java

```
package com.example.exp5;

import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {
    TextView textViewName;

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

        textViewName = findViewById(R.id.textViewName);

        // Receive the passed value from the first activity
        String name = getIntent().getStringExtra("NAME");

        // Display the received value in a TextView
        textViewName.setText("Hello, " + name + "!");
    }
}
```

Manifest File

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

Output:


6:58
Enter Name
Submit

Exp.No.6	Name of the Experiment:	Date:

Aim: To Design an android application to Send SMS using Intent.

Activity_main xml

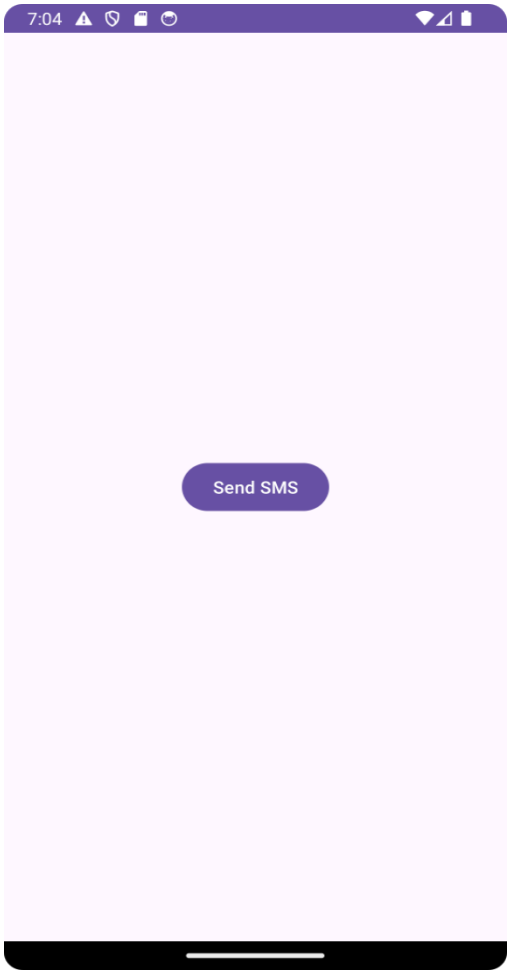
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"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

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send SMS" />

</LinearLayout>
```

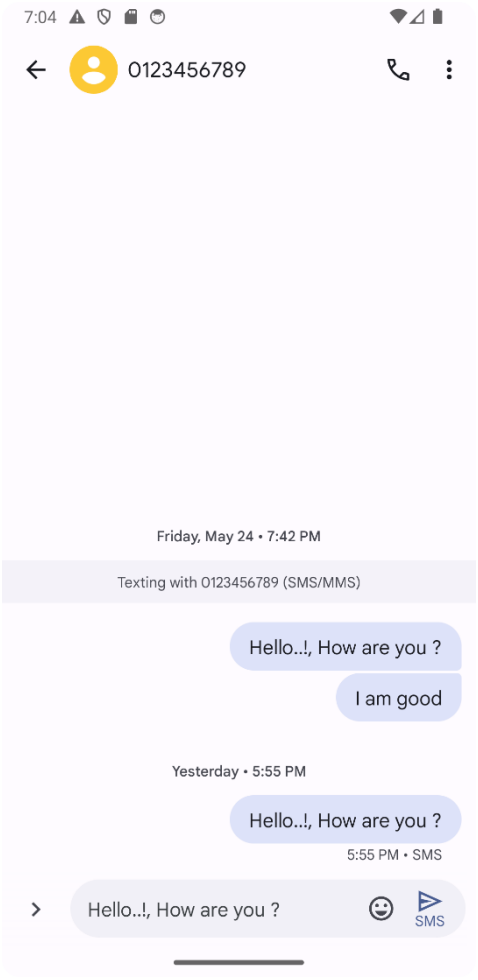
MainActivity.java

```
package com.example.exp6;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
    Button sendsms;

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

```
        setContentView(R.layout.activity_main);

        sendsms = findViewById(R.id.button);
        sendsms.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent it = new Intent(Intent.ACTION_VIEW,
                        Uri.fromParts("sms", "0123456789", null));
                it.putExtra("sms_body", "Hello..!, How are you ?");
                startActivity(it);
            }
        });
    }
}
```

Output:





Exp.No.7	Name of the Experiment: Create an android application using Fragments.	Date:

Aim: **To** Create an android application using Fragments.

Activity_main xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:id="@+id/fragmentContainer"
   android:layout_width="match_parent"
   android:layout_height="match_parent" />
```

Fragment_main xml

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

   <TextView
      android:id="@+id/textViewMain"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Main Fragment"
      android:textSize="24sp" />

   <Button
      android:id="@+id/buttonLoadDetail"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Load Detail Fragment"
      android:layout_marginTop="20dp" />
</LinearLayout>
```

Fragment_detail 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:gravity="center">

    <TextView
        android:id="@+id/textViewDetail"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Detail Fragment"
        android:textSize="24sp" />
</LinearLayout>
```

Strings.xml

```
<resources>
    <string name="app_name">EXP7</string>
    <string name="main_fragment">Main Fragment</string>
    <string name="detail_fragment">Detail Fragment</string>
    <string name="load_detail_fragment">Load Detail Fragment</string>
</resources>
```

MainActivity.java

```
package com.example.exp7;

import android.os.Bundle;
import android.view.View;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentTransaction;

public class MainActivity extends AppCompatActivity {

    @Override
```

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

        if (savedInstanceState == null) {
            loadFragment(new MainFragment());
        }
    }

    public void loadDetailFragment(View view) {
        loadFragment(new DetailFragment());
    }

    private void loadFragment(Fragment fragment) {
        FragmentTransaction transaction =
getSupportFragmentManager().beginTransaction();
        transaction.replace(R.id.fragmentContainer, fragment);
        transaction.addToBackStack(null);
        transaction.commit();
    }
}
```

MainFragment.java

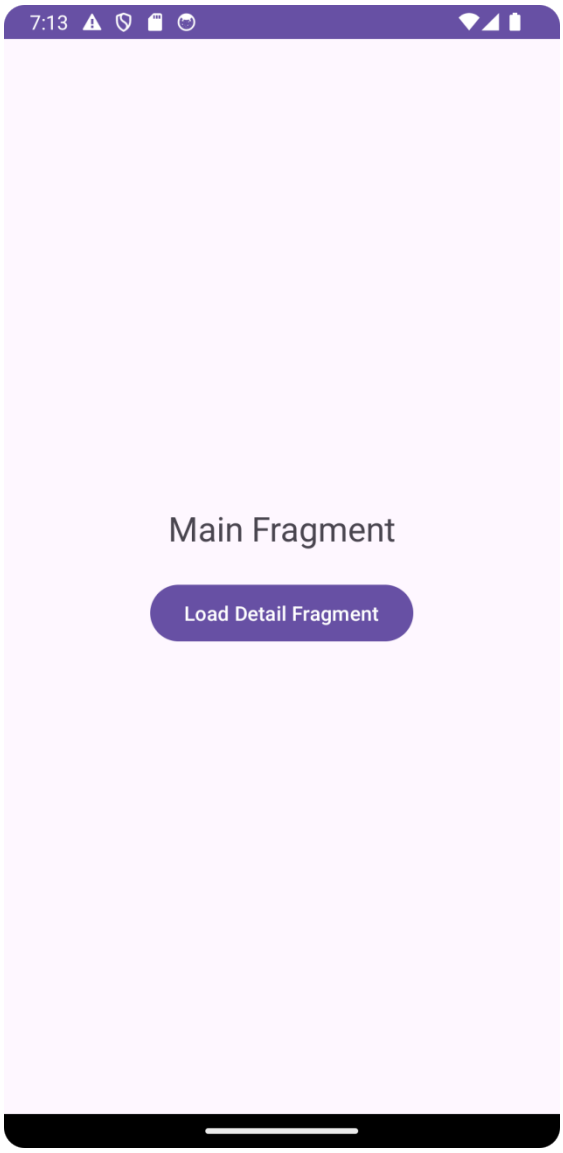
```
package com.example.exp7;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class MainFragment extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable
ViewGroup container, @Nullable Bundle savedInstanceState) {
        View view = inflater.inflate(R.layout.fragment_main, container, false);
```

```
        view.findViewById(R.id.buttonLoadDetail).setOnClickListener(v -> {
            if (getActivity() instanceof MainActivity) {
                ((MainActivity) getActivity()).loadDetailFragment(v);
            }
        });
        return view;
    }
}
```

DetailFragment.java

```
package com.example.exp7;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class DetailFragment extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.fragment_detail, container, false);
    }
}
```

Output:


7:13
Main Fragment
Load Detail Fragment


7:13
Detail Fragment

Exp.No.8	Name of the Experiment: Design an android application Using Radio buttons.	Date:

Aim: To Design an android application Using Radio buttons.

Activity_main xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <RadioButton
            android:id="@+id/radioButtonOption1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Option 1" />

        <RadioButton
            android:id="@+id/radioButtonOption2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Option 2" />

        <!-- Add more radio buttons as needed -->

    </RadioGroup>

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

</LinearLayout>
```

MainActivity.java

```
package com.example.exp8;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    private RadioGroup radioGroup;
    private Button buttonSubmit;

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

        radioGroup = findViewById(R.id.radioGroup);
        buttonSubmit = findViewById(R.id.buttonSubmit);

        buttonSubmit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int selectedId = radioGroup.getCheckedRadioButtonId();
                if (selectedId != -1) {
                    RadioButton radioButton = findViewById(selectedId);
                    String selection = radioButton.getText().toString();
                    Toast.makeText(MainActivity.this, "Selected: " + selection,
                            Toast.LENGTH_SHORT).show();
                } else {
                    Toast.makeText(MainActivity.this, "Please select an option",
                            Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

Output:


7:21
Option 1
Option 2
Submit


7:21
Option 1
Option 2
Submit
Selected: Option 2

Exp.No.9	Name of the Experiment: Design an android application for the menu.	Date:

Aim: To Design an android application for the menu.

Activity_main xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

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

    <TextView
        android:id="@+id/txt"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@string/txt"
        android:visibility="gone" />

</LinearLayout>
```

Strings.xml

```
<resources>
    <string name="app_name">EXP9</string>
    <string name="txt">t</string>
    <string name="list">t</string>
</resources>
```

MainActivity.java

```
package com.example.exp9;
import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   ListView list;
   TextView txt;

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

      list = findViewById(R.id.list);
      txt = findViewById(R.id.txt);

      String[] menu = {"apple", "banana", "c"};
      ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, menu);
      list.setAdapter(adapter);

      list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
         @Override
         public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
            String res = menu[position];
            txt.setText(res);
            txt.setVisibility(View.VISIBLE);
         }
      });
   }
}
```

Output

Exp.No.	Name of the Experiment: 10	Date:

Aim: Create a user registration application that stores the user details in a database table.

```
package com.example.experiment10;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   private Button btnRegister, btnShow;
   private EditText etName, etNum, etEmail;
   private TextView tvResult;
   private DatabaseHelper databaseHelper;

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

      etName = findViewById(R.id.etName);
      etNum = findViewById(R.id.etNum);
      etEmail = findViewById(R.id.etEmail);
      btnRegister = findViewById(R.id.btnRegister);
      btnShow = findViewById(R.id.btnShow);
      tvResult = findViewById(R.id.tvResult);

      databaseHelper = new DatabaseHelper(this);

      btnRegister.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
            String name = etName.getText().toString();
            String number = etNum.getText().toString();
```

```
            String email = etEmail.getText().toString();

            // Insert data into the database
            databaseHelper.insertData(name, number, email);

            etName.setText("");
            etNum.setText("");
            etEmail.setText("");
        }
    });

    btnShow.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            // Retrieve data from the database and display in TextView
            String data = databaseHelper.getData();
            tvResult.setText(data);
        }
    });
  }
}
```

```
package com.example.experiment10;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.annotation.SuppressLint;

public class DatabaseHelper extends SQLiteOpenHelper {
  private static final int DATABASE_VERSION = 1;
  private static final String DATABASE_NAME = "registration.db";
  private static final String TABLE_NAME = "users";
  private static final String COLUMN_ID = "id";
  private static final String COLUMN_NAME = "name";
  private static final String COLUMN_EMAIL = "email";
  private static final String COLUMN_NUMBER = "number";
```

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

@Override
public void onCreate(SQLiteDatabase db) {
   String createTableQuery = "CREATE TABLE " + TABLE_NAME + " (" +
                     COLUMN_ID + " INTEGER PRIMARY KEY AUTOINCREMENT, " +
                     COLUMN_NAME + " TEXT, " +
                     COLUMN_NUMBER + " TEXT, " +
                     COLUMN_EMAIL + " TEXT)";
   db.execSQL(createTableQuery);
}

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

// Insert data into the database
public void insertData(String name, String number, String email) {
   SQLiteDatabase db = this.getWritableDatabase();
   ContentValues values = new ContentValues();
   values.put(COLUMN_NAME, name);
   values.put(COLUMN_NUMBER, number);
   values.put(COLUMN_EMAIL, email);
   db.insert(TABLE_NAME, null, values);
   db.close();
}

// Retrieve data from the database
public String getData() {
   SQLiteDatabase db = this.getReadableDatabase();
   Cursor cursor = db.rawQuery("SELECT * FROM " + TABLE_NAME, null);
   StringBuilder stringBuilder = new StringBuilder();
   if (cursor.moveToFirst()) {
      do {
```

```
            @SuppressLint("Range") int id = cursor.getInt(cursor.getColumnIndex(COLUMN_ID));
            @SuppressLint("Range") String name =
cursor.getString(cursor.getColumnIndex(COLUMN_NAME));
            @SuppressLint("Range") String number =
cursor.getString(cursor.getColumnIndex(COLUMN_NUMBER));
            @SuppressLint("Range") String email =
cursor.getString(cursor.getColumnIndex(COLUMN_EMAIL));
            stringBuilder.append("ID: ").append(id).append(", Name: ").append(name)
                    .append(", Number: ").append(number).append(", Email: ").append(email).append("\n");
        } while (cursor.moveToNext());
      }
      cursor.close();
      db.close();
      return stringBuilder.toString();
   }
}
```

```
<?xml version="1.0" encoding="utf-8"?>
<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:padding="16dp"
   tools:context=".MainActivity">

   <EditText
      android:id="@+id/etName"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Name"
      android:inputType="text"
      android:minHeight="48dp" />

   <EditText
      android:id="@+id/etNum"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_below="@id/etName"
      android:hint="Number"
      android:inputType="text"
```

```
    android:minHeight="48dp" />

  <EditText
    android:id="@+id/etEmail"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/etNum"
    android:hint="Email"
    android:inputType="textEmailAddress"
    android:minHeight="48dp" />

  <Button
    android:id="@+id/btnRegister"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/etEmail"
    android:text="Register" />

  <Button
    android:id="@+id/btnShow"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/btnRegister"
    android:text="Show" />

  <TextView
    android:id="@+id/tvResult"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/btnShow"
    android:layout_marginTop="16dp" />

</RelativeLayout>
```

Android App Development

Extra Programs:

1.Design an android application that creates an alert notification upon receiving message.

MainActivity.java:

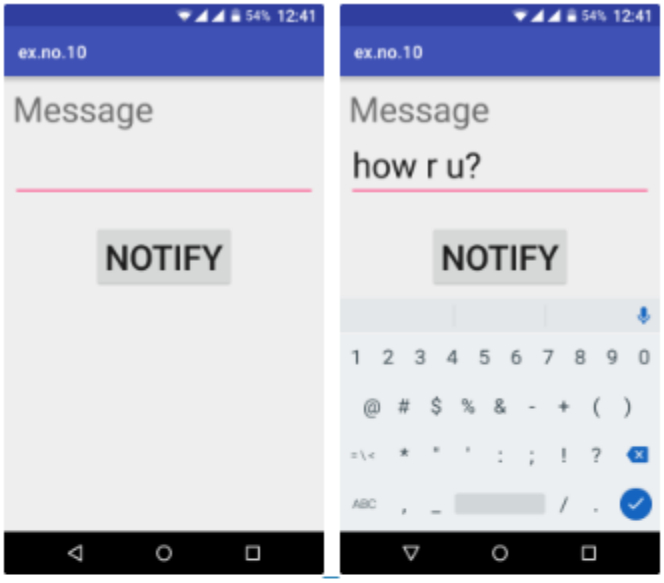
```
package com.example.exno10;

import android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity
{
   Button notify;
   EditText e;
   @Override
   protected void onCreate(Bundle savedInstanceState)
   {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

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

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

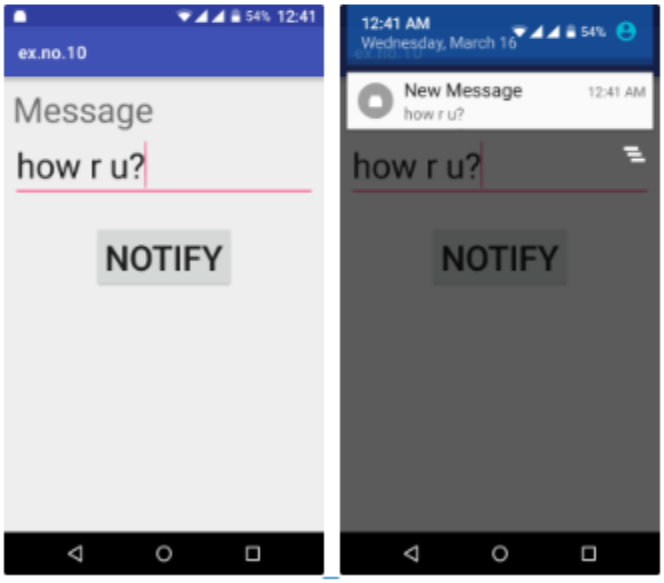
```
        }
    });
  }
}
```

activity_main.xml:

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Message"
        android:textSize="30sp" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
        android:textSize="30sp" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:layout_gravity="center"
        android:text="Notify"
        android:textSize="30sp"/>

</LinearLayout>
```

Output:


54% 12:41
ex.no.10
Message
NOTIFY
54% 12:41
ex.no.10
Message
how r u?
NOTIFY


54% 12:41
ex.no.10
Message
how r u?
NOTIFY
12:41 AM
Wednesday, March 16
New Message
12:41 AM
how r u?
how r u?
NOTIFY

Exp.No.	Name of the Experiment: 02	Date:

Aim: **Implement an application that writes data to the SD card.**

1. Open Eclipse or Android Studio and create a new project.
2. Select your project in the project explorer.
3. Go to the `res` folder and select `layout`. Double-click the main XML file.
4. Type the code for `main.xml` or drag and drop various components used in your program.
5. Drag and drop a `RelativeLayout` and change its properties.
6. Drag and drop an `ImageView` and change its properties according to your program.
7. The screen layout can be viewed by clicking the graphics layout tab.
8. Include necessary files.
9. Override `onCreate()` function.
10. Create an `ImageView` and initialize it using the ID of some components used in the XML program.
11. Save the program.
12. Run the program.
13. The output can be viewed in the Android emulator.

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:layout_margin="20dp"
  android:orientation="vertical">

  <EditText
    android:id="@+id/editText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:singleLine="true"
    android:textSize="30dp" />

  <Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```
        android:layout_margin="10dp"
        android:text="Write Data"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Read Data"
        android:textSize="30dp" />

    <Button
        android:id="@+id/button3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Clear"
        android:textSize="30dp" />
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.exno9">

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

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">

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

```
    </application>
</manifest>

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.exno9">

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

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">

        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
package com.example.exno9;

import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity {
```

```
    EditText e1;
    Button write, read, clear;

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

        e1 = (EditText) findViewById(R.id.editText);
        write = (Button) findViewById(R.id.button);
        read = (Button) findViewById(R.id.button2);
        clear = (Button) findViewById(R.id.button3);

        write.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String message = e1.getText().toString();
                try {
                    File f = new File("/sdcard/myfile.txt");
                    f.createNewFile();
                    FileOutputStream fout = new FileOutputStream(f);
                    fout.write(message.getBytes());
                    fout.close();
                    Toast.makeText(getBaseContext(), "Data Written in SDCARD",
Toast.LENGTH_LONG).show();
                } catch (Exception e) {
                    Toast.makeText(getBaseContext(), e.getMessage(),
Toast.LENGTH_LONG).show();
                }
            }
        });

        read.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String message;
                String buf = "";
                try {
                    File f = new File("/sdcard/myfile.txt");
```

```
            FileInputStream fin = new FileInputStream(f);
            BufferedReader br = new BufferedReader(new InputStreamReader(fin));
            while ((message = br.readLine()) != null) {
               buf += message;
            }
            e1.setText(buf);
            br.close();
            fin.close();
            Toast.makeText(getBaseContext(), "Data Received from SDCARD",
Toast.LENGTH_LONG).show();
          } catch (Exception e) {
            Toast.makeText(getBaseContext(), e.getMessage(),
Toast.LENGTH_LONG).show();
          }
        }
      });

      clear.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
          e1.setText("");
        }
      });
    }
}
```

Exp.No. Add3	Name of the Experiment: To setup an alarm on or cancel it	Date:

Aim: To setup an alarm on or cancel it

Activity_main xml

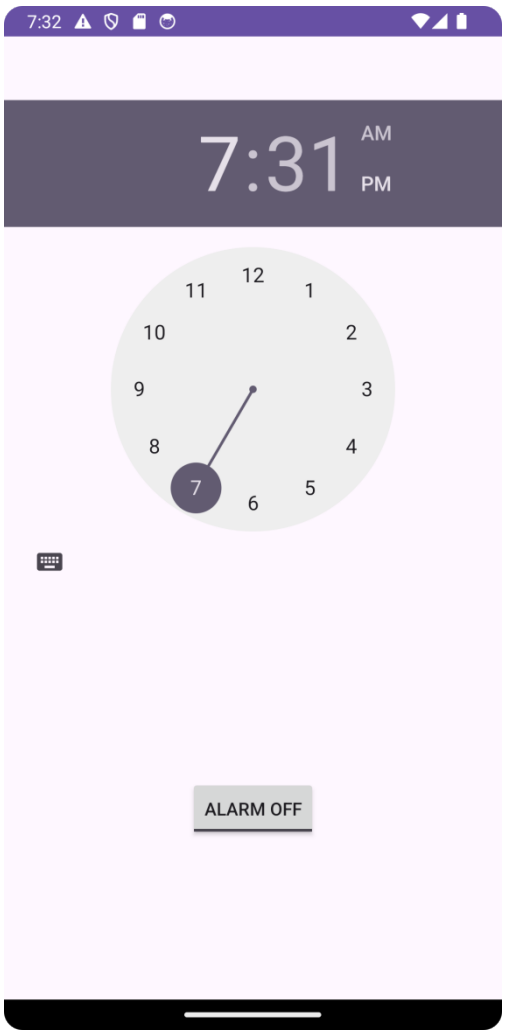
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"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

    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="50dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <ToggleButton
        android:id="@+id/alarmToggle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:textOn="Alarm On"
        android:textOff="Alarm Off"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@id/timePicker" />

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

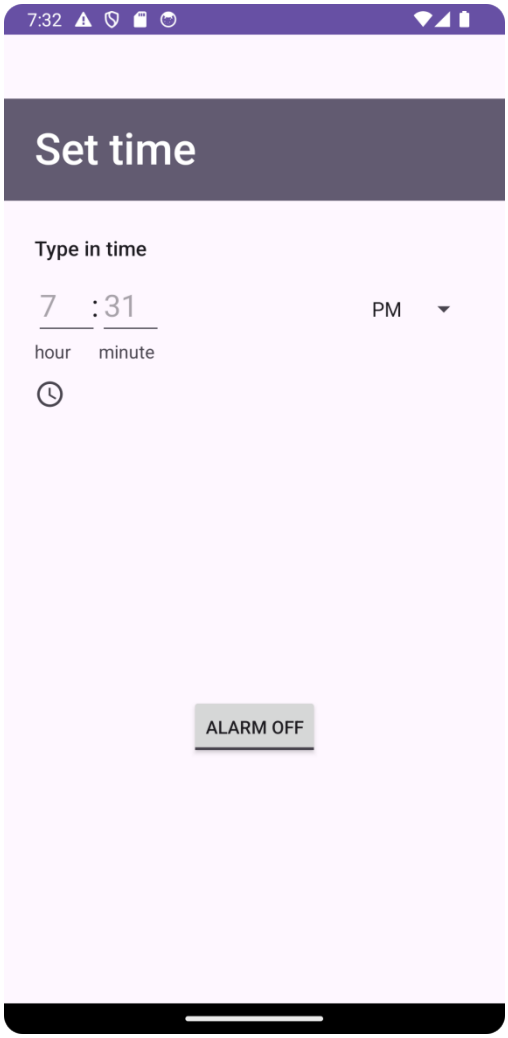
MainActivity.java

```
package com.example.aad3;

import android.os.Bundle;
import android.widget.CompoundButton;
```

```
import android.widget.TimePicker;
import android.widget.ToggleButton;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    private TimePicker timePicker;
    private ToggleButton alarmToggle;

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

        timePicker = findViewById(R.id.timePicker);
        alarmToggle = findViewById(R.id.alarmToggle);

        alarmToggle.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
                if (isChecked) {
                    setAlarm();
                } else {
                    cancelAlarm();
                }
            }
        });
    }

    private void setAlarm() {
        int hour = timePicker.getHour(); // Updated to use getHour() instead of
getCurrentHour()
        int minute = timePicker.getMinute(); // Updated to use getMinute() instead of
getCurrentMinute()
        // Add code to set the alarm using AlarmManager or another method
    }

    private void cancelAlarm() {
        // Add code to cancel the alarm
    }
}
```

Output


7:32
7:31
AM
PM
12
1
2
3
4
5
6
7
8
9
10
11
ALARM OFF


7:32
Set time
Type in time
7
:31
PM
hour
minute
ALARM OFF

Exp.No.	Name of the Experiment: 04	Date:

4.Write an application that draws basic graphical primitives on the screen.

MainActivity.java:

```
package com.example.add4;
import android.app.Activity;
import android.os.Bundle;

public class MainActivity extends Activity {

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

activity_main.xml:

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

    <com.example.add4.GraphicsView
        android:id="@+id/graphicsView"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />

</RelativeLayout>
```

GraphicsView.java:

```
package com.example.add4;

import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.RectF;
import android.view.View;

public class GraphicsView extends View {

    private Paint paint;

    public GraphicsView(Context context) {
        super(context);
        paint = new Paint();
        paint.setAntiAlias(true);
    }
```

```
    @Override
    protected void onDraw(Canvas canvas) {
        super.onDraw(canvas);

        // Draw a line
        paint.setColor(Color.RED);
        paint.setStrokeWidth(5);
        canvas.drawLine(50, 50, 250, 50, paint);

        // Draw a circle
        paint.setColor(Color.BLUE);
        canvas.drawCircle(150, 150, 100, paint);

        // Draw a rectangle
        paint.setColor(Color.GREEN);
        RectF rect = new RectF(100, 300, 300, 500);
        canvas.drawRect(rect, paint);
    }
}
```