MAD Practical Exam Question Bank

1. Write a program to demonstrate the use of Linear Layout and and Absolute Layout

Ans :

Linear Layout :

```
<?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:padding="20dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Linear Layout Example" />

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Click Me" />
</LinearLayout>
```

```
package com.example.layoutdemo;

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

public class LinearActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_linear);
    }
}
```

Absolute Layout :

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

  <Button
    android:layout_width="150dp"
    android:layout_height="50dp"
    android:layout_x="50dp"
    android:layout_y="100dp"
    android:text="Absolute Button" />
</AbsoluteLayout>
package com.example.layoutdemo;

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

public class AbsoluteActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_absolute);
  }
}
```

2. Develop a program to implement table layout and relative layout

Ans :

Table Layout :

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:stretchColumns="1">
```

```
  <TableRow>
    <TextView android:text="Name" />
    <EditText android:hint="Enter Name" />
  </TableRow>

  <TableRow>
    <TextView android:text="Email" />
    <EditText android:hint="Enter Email" />
  </TableRow>
</TableLayout>
package com.example.layoutdemo;

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

public class TableActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_table);
  }
}
```
Relative Layout :
```
<?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">

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

  <Button
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Second Button"
    android:layout_below="@id/button1"
    android:layout_marginTop="20dp" />
</RelativeLayout>
package com.example.layoutdemo;

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

public class RelativeActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_relative);
  }
}
```

3. Write a program to demonstrate the use of Autocomplete Textview

Ans :

```
<?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:padding="20dp">

  <AutoCompleteTextView
    android:id="@+id/autoCompleteTextView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Type a country" />
</LinearLayout>
package com.example.layoutdemo;

import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.AutoCompleteTextView;
```

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

public class AutoCompleteActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_autocomplete);

    AutoCompleteTextView actv = findViewById(R.id.autoCompleteTextView);
    String[] countries = {"India", "Indonesia", "Iceland", "Italy", "Iran", "Iraq"};

    ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, countries);
    actv.setAdapter(adapter);
  }
}
```

4. Write a program to demonstrate the use of Radio Button

Ans :

```
<?xml version="1.0" encoding="utf-8"?>
<RadioGroup xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="wrap_content"
  android:orientation="vertical"
  android:padding="20dp"
  android:id="@+id/radioGroup">

  <RadioButton
    android:id="@+id/radioMale"
    android:text="Male" />
  <RadioButton android:id="@+id/radioFemale" android:text="Female" />
</RadioGroup>
```

```
package com.example.layoutdemo;

import android.os.Bundle;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class RadioActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_radio);

    RadioGroup rg = findViewById(R.id.radioGroup);
    rg.setOnCheckedChangeListener((group, checkedId) -> {
      RadioButton selected = findViewById(checkedId);
      Toast.makeText(this, "Selected: " + selected.getText(),
Toast.LENGTH_SHORT).show();
    });
  }
}
```

5. Write a program to demonstrate the use of List View

Ans :

```
<?xml version="1.0" encoding="utf-8"?>
<ListView xmlns:android="http://schemas.android.com/apk/res/android"
  android:id="@+id/listView"
  android:layout_width="match_parent"
  android:layout_height="match_parent" />
package com.example.layoutdemo;

import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import androidx.appcompat.app.AppCompatActivity;

public class ListActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_list);

    ListView listView = findViewById(R.id.listView);
    String[] names = {"Apple", "Banana", "Mango", "Orange"};
```

```
    ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, names);
    listView.setAdapter(adapter);
  }
}
```

6. Write a program to create a of Custom Toast

Ans :

activity_main.xml code:

```
<?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="15dp"
  tools:context=".MainActivity">
  <TextView
    android:id="@+id/t1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Toast Example"

    />
  <Button
    android:id="@+id/customToast"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Custom Toast" />
</LinearLayout>
```

custom_toast_layout.xml code:

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

```
  android:background="@color/black"
  android:padding="8dp"
  >
  <TextView
    android:id="@+id/largetext"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    />
  <TextView
    android:id="@+id/smalltext"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    />
</LinearLayout>
```

MainActivity.java :

```
package com.example.q1;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
Button simpleToast, customToast;
@Override
protected void onCreate(Bundle savedInstanceState) {
  super.onCreate(savedInstanceState);
  setContentView(R.layout.activity_main);
  customToast = (Button) findViewById(R.id.customToast);
  customToast.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
      LayoutInflater inflater = getLayoutInflater();
      View layout = inflater.inflate(R.layout.custom_toast_layout, (ViewGroup)
          findViewById(R.id.toast_layout_root));
      TextView toastTextView = (TextView) layout.findViewById(R.id.largetext);
```

```
        TextView toastTextView2 = (TextView)
layout.findViewById(R.id.smalltext);
        toastTextView.setText("Message for you :");
        toastTextView2.setText("Hii John");
        Toast toast = new Toast(getApplicationContext());
        toast.setDuration(Toast.LENGTH_LONG);
        toast.setView(layout);
        toast.show();
      }
   });
}
}
```

7. Write a program to demonstrate the use of DatePicker

Ans :

```
<?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:padding="20dp"
   android:gravity="center">

   <DatePicker
      android:id="@+id/datePicker"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:datePickerMode="calendar" />

   <Button
      android:id="@+id/btnShowDate"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Show Selected Date"
      android:layout_marginTop="20dp" />

   <TextView
      android:id="@+id/txtDate"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Selected date will appear here"
    android:textSize="18sp"
    android:layout_marginTop="20dp" />
</LinearLayout>
```

```
package com.example.datepickerxml;

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

public class MainActivity extends AppCompatActivity {

  DatePicker datePicker;
  Button btnShowDate;
  TextView txtDate;

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

    datePicker = findViewById(R.id.datePicker);
    btnShowDate = findViewById(R.id.btnShowDate);
    txtDate = findViewById(R.id.txtDate);

    btnShowDate.setOnClickListener(v -> {
      int day = datePicker.getDayOfMonth();
      int month = datePicker.getMonth() + 1; // month is 0-based
      int year = datePicker.getYear();
      String date = day + "/" + month + "/" + year;
      txtDate.setText("Selected Date: " + date);
    });
  }
}
```

8. Android Program to enable and disable WiFi Connection

Ans :

activity_main.xml code :

```
<?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"
  tools:context=".MainActivity"
  android:orientation="vertical">
  <Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Enable_wifi" />
  <Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Disable_wifi" />
</LinearLayout>
```

MainActivity.java code:

```
package com.example.q8;

import android.net.wifi.WifiManager;
import android.os.Bundle;
import android.app.Activity;
import android.content.Context;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
public class MainActivity extends Activity {
  Button enableButton,disableButton;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    enableButton=(Button)findViewById(R.id.button1);
```

```
    disableButton=(Button)findViewById(R.id.button2);
    enableButton.setOnClickListener(new OnClickListener(){
      public void onClick(View v){
        WifiManager wifi = (WifiManager)
getApplicationContext().getSystemService(Context.WIFI_SERVICE);
        wifi.setWifiEnabled(true);
      }
    });
    disableButton.setOnClickListener(new OnClickListener(){
      public void onClick(View v){
        WifiManager wifi = (WifiManager)
getApplicationContext().getSystemService(Context.WIFI_SERVICE);
        wifi.setWifiEnabled(false);
      }
    });
  }
}
```

Manifest code:

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

9. Develop a program to implement explicit intent and implicit intent

Ans :

Manifest :

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

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

  <Button android:id="@+id/btnExplicit"
    android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:text="Explicit Intent" />

  <Button android:id="@+id/btnImplicit"
    android:layout_width="wrap_content"
android:layout_height="wrap_content"
    android:text="Implicit Intent" />
</LinearLayout>
package com.example.layoutdemo;

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

public class MainActivity extends AppCompatActivity {
  Button btnExplicit, btnImplicit;

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

    btnExplicit = findViewById(R.id.btnExplicit);
    btnImplicit = findViewById(R.id.btnImplicit);

    btnExplicit.setOnClickListener(v -> {
      Intent intent = new Intent(MainActivity.this, SecondActivity.class);
      startActivity(intent);
    });
```

```
        btnImplicit.setOnClickListener(v -> {
            Intent intent = new Intent(Intent.ACTION_VIEW,
Uri.parse("https://www.google.com"));
            startActivity(intent);
        });
    }
}
```

Second activity :

```
package com.example.myapplication;

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

public class SecondActivity extends AppCompatActivity {

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

        TextView textView = findViewById(R.id.textView);
        textView.setText("This is the Second Activity");
    }
}
<?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:gravity="center"
    android:orientation="vertical"
    android:padding="20dp">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome!"
        android:textSize="20sp" />
</LinearLayout>
```

10. Write a program to send SMS

Ans :

activity_main.xml code:

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

  <TextView
    android:id="@+id/fstTxt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Mobile No"
    android:layout_marginTop="50dp" />

  <EditText
    android:id="@+id/mblTxt"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter mobile number"
    android:inputType="phone" />

  <TextView
    android:id="@+id/secTxt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Message"
    android:layout_marginTop="30dp" />

  <EditText
    android:id="@+id/msgTxt"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Type your message"
    android:inputType="textMultiLine" />
```

```
    <Button
        android:id="@+id/btnSend"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send SMS"
        android:layout_marginTop="30dp" />
</LinearLayout>
```

MainActivity.java Code:

```
package com.example.q10;

import android.Manifest;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

public class MainActivity extends AppCompatActivity {

    private EditText txtMobile;
    private EditText txtMessage;
    private Button btnSms;

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

        txtMobile = findViewById(R.id.mblTxt);
        txtMessage = findViewById(R.id.msgTxt);
        btnSms = findViewById(R.id.btnSend);
```

```
    // Request SMS permission if not already granted
    if (ContextCompat.checkSelfPermission(this,
Manifest.permission.SEND_SMS)
          != PackageManager.PERMISSION_GRANTED) {
        ActivityCompat.requestPermissions(this, new
String[]{Manifest.permission.SEND_SMS}, 1);
    }

    btnSms.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        String number = txtMobile.getText().toString();
        String message = txtMessage.getText().toString();

        if (!number.isEmpty() && !message.isEmpty()) {
          try {
            SmsManager smsManager = SmsManager.getDefault();
            smsManager.sendTextMessage(number, null, message, null, null);
            Toast.makeText(MainActivity.this, "SMS Sent Successfully",
Toast.LENGTH_SHORT).show();
          } catch (Exception e) {
            Toast.makeText(MainActivity.this, "SMS Failed: " + e.getMessage(),
Toast.LENGTH_SHORT).show();
          }
        } else {
          Toast.makeText(MainActivity.this, "Please enter both number and
message", Toast.LENGTH_SHORT).show();
        }
      }
    });
  }
}
```

AndroidManifest.xml code:

```
<uses-permission android:name="android.permission.SEND_SMS"/>
<uses-feature android:name="android.hardware.telephony"
android:required="false" />
```

11. Android to display all available sensors in a mobile device.

Ans :

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

package com.example.layoutdemo;

import android.hardware.Sensor;
import android.hardware.SensorManager;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import androidx.appcompat.app.AppCompatActivity;
import java.util.ArrayList;
import java.util.List;

public class SensorsActivity extends AppCompatActivity {
   ListView listView;
   SensorManager sensorManager;
   List<Sensor> sensors;
   ArrayList<String> sensorNames = new ArrayList<>();

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

      listView = findViewById(R.id.listSensors);
      sensorManager = (SensorManager) getSystemService(SENSOR_SERVICE);
      sensors = sensorManager.getSensorList(Sensor.TYPE_ALL);
```

```
      for (Sensor s : sensors) {
         sensorNames.add(s.getName());
      }

      ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, sensorNames);
      listView.setAdapter(adapter);
   }
}
```

12. Write a Bluetooth Android program to Turn ON Bluetooth, Turn OFF Bluetooth, make device visible and display the list of all available Bluetooth devices.

Ans :

activity_main.xml code:

```
<?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">

   <TextView
      android:id="@+id/textview"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Bluetooth Example"
      android:textSize="30sp"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="30dp"/>

   <Button
      android:id="@+id/button"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Turn On"
    android:onClick="on"
    android:layout_below="@id/textview"
    android:layout_marginTop="20dp"
    android:layout_alignParentStart="true"
    android:layout_marginStart="20dp"/>

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Get Visible"
    android:onClick="visible"
    android:layout_below="@id/textview"
    android:layout_toEndOf="@id/button"
    android:layout_marginTop="20dp"
    android:layout_marginStart="20dp"/>

<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Turn Off"
    android:onClick="off"
    android:layout_below="@id/button"
    android:layout_marginTop="20dp"
    android:layout_alignParentStart="true"
    android:layout_marginStart="20dp"/>

<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
        android:text="List Devices"
        android:onClick="list"
        android:layout_below="@id/button2"
        android:layout_toEndOf="@id/button4"
        android:layout_marginTop="20dp"
        android:layout_marginStart="20dp"/>

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Paired devices:"
        android:textColor="#00AA00"
        android:textSize="20sp"
        android:layout_below="@id/button3"
        android:layout_marginTop="20dp"
        android:layout_marginStart="20dp"/>

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/textView2"
        android:layout_marginTop="10dp"
        android:layout_marginStart="20dp"
        android:layout_marginEnd="20dp"/>
</RelativeLayout>
```

MainActivity.java code:

```
package in.edu.vpt.bluetooth;

import android.bluetooth.BluetoothAdapter;
import android.bluetooth.BluetoothDevice;
import android.content.Intent;
import android.os.Bundle;
```

```
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.ListView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;
import java.util.Set;

public class MainActivity extends AppCompatActivity {

   Button b1, b2, b3, b4;
   private BluetoothAdapter BA;
   private Set<BluetoothDevice> pairedDevices;
   ListView lv;

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

      b1 = findViewById(R.id.button);
      b2 = findViewById(R.id.button2);
      b3 = findViewById(R.id.button3);
      b4 = findViewById(R.id.button4);

      lv = findViewById(R.id.listView);

      BA = BluetoothAdapter.getDefaultAdapter();

      if (BA == null) {
         Toast.makeText(getApplicationContext(), "Bluetooth not supported",
Toast.LENGTH_LONG).show();
```

```
        finish(); // Close app if Bluetooth is not supported
      }
    }

    public void on(View v) {
      if (!BA.isEnabled()) {
        Intent turnOn = new
Intent(BluetoothAdapter.ACTION_REQUEST_ENABLE);
        startActivityForResult(turnOn, 0);
        Toast.makeText(getApplicationContext(), "Bluetooth Turned ON",
Toast.LENGTH_SHORT).show();
      } else {
        Toast.makeText(getApplicationContext(), "Bluetooth is already ON",
Toast.LENGTH_SHORT).show();
      }
    }

    public void off(View v) {
      if (BA.isEnabled()) {
        BA.disable();
        Toast.makeText(getApplicationContext(), "Bluetooth Turned OFF",
Toast.LENGTH_SHORT).show();
      } else {
        Toast.makeText(getApplicationContext(), "Bluetooth is already OFF",
Toast.LENGTH_SHORT).show();
      }
    }

    public void visible(View v) {
      Intent getVisible = new
Intent(BluetoothAdapter.ACTION_REQUEST_DISCOVERABLE);

getVisible.putExtra(BluetoothAdapter.EXTRA_DISCOVERABLE_DURATION,
120);
      startActivity(getVisible);
```

```
  }

  public void list(View v) {
    pairedDevices = BA.getBondedDevices();
    ArrayList<String> list = new ArrayList<>();

    for (BluetoothDevice bt : pairedDevices) {
      list.add(bt.getName() + "\n" + bt.getAddress());
    }

    Toast.makeText(getApplicationContext(), "Showing Paired Devices",
Toast.LENGTH_SHORT).show();

    ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, list);
    lv.setAdapter(adapter);
  }
}
```

AndroidManifest.xml code:

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

  <uses-permission android:name="android.permission.BLUETOOTH" />
  <uses-permission android:name="android.permission.BLUETOOTH_ADMIN"
/>
  <uses-permission
android:name="android.permission.ACCESS_FINE_LOCATION" />
  <uses-permission
android:name="android.permission.BLUETOOTH_CONNECT" />
  <uses-permission android:name="android.permission.BLUETOOTH_SCAN"
/>

  <application
```

```
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:theme="@style/Theme.AppCompat.Light.DarkActionBar">
    <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>
```