

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"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/txt"
        android:text="Bluetooth"
        android:textSize="20sp"/>

    <Button
        android:layout_below="@id/txt"
        android:id="@+id/btnTurnOn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Turn On"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id/btnGetVisible"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Get Visible"
        android:layout_below="@id/btnTurnOn"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id/btnListDevices"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="List Devices"
        android:layout_below="@id/btnGetVisible"
        android:layout_marginTop="16dp"/>

    <Button
        android:id="@+id/btnTurnOff"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Turn Off"
        android:layout_below="@id/btnListDevices"
        android:layout_marginTop="16dp"/>

    <ListView
        android:id="@+id/listViewDevices"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/btnTurnOff"
        android:layout_marginTop="8dp" />

</RelativeLayout>
```

MainActivity.java:

```
package com.example.pracrical24;

import android.bluetooth.BluetoothAdapter;
import android.bluetooth.BluetoothDevice;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.ListView;
import android.widget.Toast;

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

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

public class MainActivity extends AppCompatActivity {

    private BluetoothAdapter bluetoothAdapter;
    private ArrayAdapter<String> arrayAdapter;
    private ArrayList<String> pairedDevices;

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

        Button btnTurnOn = findViewById(R.id.btnTurnOn);
        Button btnGetVisible = findViewById(R.id.btnGetVisible);
        Button btnListDevices = findViewById(R.id.btnListDevices);
        Button btnTurnOff = findViewById(R.id.btnTurnOff);
        ListView listViewDevices = findViewById(R.id.listViewDevices);

        bluetoothAdapter = BluetoothAdapter.getDefaultAdapter();
        pairedDevices = new ArrayList<>();
        arrayAdapter = new ArrayAdapter<>(this, android.R.layout.simple_list_item_1, pairedDevices);
        listViewDevices.setAdapter(arrayAdapter);

        btnTurnOn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                enableBluetooth();
            }
        });

        btnGetVisible.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                makeVisible();
            }
        });

        btnListDevices.setOnClickListener(new View.OnClickListener() {
            @Override
```

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        public void onClick(View v) {
            listPairedDevices();
        }
    });

    btnTurnOff.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            disableBluetooth();
        }
    });

    listViewDevices.setOnItemClickListener(new AdapterView.OnItemClickListener() {
        @Override
        public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
            String deviceName = pairedDevices.get(position);
            Toast.makeText(MainActivity.this, "Selected device: " + deviceName,
                Toast.LENGTH_SHORT).show();
        }
    });
}

private void enableBluetooth() {
    if (bluetoothAdapter == null) {
        Toast.makeText(this, "Bluetooth is not supported on this device",
            Toast.LENGTH_SHORT).show();
        return;
    }

    if (!bluetoothAdapter.isEnabled()) {
        Intent enableBluetoothIntent = new Intent(BluetoothAdapter.ACTION_REQUEST_ENABLE);
        if (ActivityCompat.checkSelfPermission(this,
            android.Manifest.permission.BLUETOOTH_CONNECT) !=
            PackageManager.PERMISSION_GRANTED) {
            // TODO: Consider calling
            // ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            // public void onRequestPermissionsResult(int requestCode, String[] permissions,
            // int[] grantResults)
            // to handle the case where the user grants the permission. See the documentation
            // for ActivityCompat#requestPermissions for more details.
            return;
        }
        startActivity(enableBluetoothIntent);
    }
}

private void makeVisible() {
    if (bluetoothAdapter == null) {
        Toast.makeText(this, "Bluetooth is not supported on this device",
            Toast.LENGTH_SHORT).show();
        return;
    }

    if (!bluetoothAdapter.isEnabled()) {
        Toast.makeText(this, "Bluetooth must be turned on to make the device visible",
            Toast.LENGTH_SHORT).show();
        return;
    }
}

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        Intent discoverableIntent = new
Intent(BluetoothAdapter.ACTION_REQUEST_DISCOVERABLE);
        discoverableIntent.putExtra(BluetoothAdapter.EXTRA_DISCOVERABLE_DURATION, 300);
        if (ActivityCompat.checkSelfPermission(this,
android.Manifest.permission.BLUETOOTH_ADVERTISE) !=
PackageManager.PERMISSION_GRANTED) {
            // TODO: Consider calling
            // ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            // public void onRequestPermissionsResult(int requestCode, String[] permissions,
            // int[] grantResults)
            // to handle the case where the user grants the permission. See the documentation
            // for ActivityCompat#requestPermissions for more details.
            return;
        }
        startActivity(discoverableIntent);
    }

    private void listPairedDevices() {
        if (bluetoothAdapter == null) {
            Toast.makeText(this, "Bluetooth is not supported on this device",
Toast.LENGTH_SHORT).show();
            return;
        }

        if (!bluetoothAdapter.isEnabled()) {
            Toast.makeText(this, "Bluetooth must be turned on to list paired devices",
Toast.LENGTH_SHORT).show();
            return;
        }

        if (ActivityCompat.checkSelfPermission(this,
android.Manifest.permission.BLUETOOTH_CONNECT) !=
PackageManager.PERMISSION_GRANTED) {
            // TODO: Consider calling
            // ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            // public void onRequestPermissionsResult(int requestCode, String[] permissions,
            // int[] grantResults)
            // to handle the case where the user grants the permission. See the documentation
            // for ActivityCompat#requestPermissions for more details.
            return;
        }
        Set<BluetoothDevice> pairedDeviceSet = bluetoothAdapter.getBondedDevices();
        pairedDevices.clear();

        if (pairedDeviceSet.size() > 0) {
            for (BluetoothDevice device : pairedDeviceSet) {
                pairedDevices.add(device.getName() + "\n" + device.getAddress());
            }
        } else {
            pairedDevices.add("No paired devices found");
        }

        arrayAdapter.notifyDataSetChanged();
    }

    private void disableBluetooth() {
        if (bluetoothAdapter == null) {

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        Toast.makeText(this, "Bluetooth is not supported on this device",
        Toast.LENGTH_SHORT).show();
        return;
    }

    if (bluetoothAdapter.isEnabled()) {
        if (ActivityCompat.checkSelfPermission(this,
        android.Manifest.permission.BLUETOOTH_CONNECT) !=
        PackageManager.PERMISSION_GRANTED) {
            // TODO: Consider calling
            //    ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            //    public void onRequestPermissionsResult(int requestCode, String[] permissions,
            //                                            int[] grantResults)
            // to handle the case where the user grants the permission. See the documentation
            // for ActivityCompat#requestPermissions for more details.
            return;
        }
        bluetoothAdapter.disable();
    }
}
}
}

```

Output:

