Vidya Vikas Education Trust's
Universal College of Engineering, Kaman Road,
Vasai-401212 Accredited by B+ Grade by NAAC

Experiment No.:2 BLUETOOTH

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Aim: To implement a Bluetooth network with the application for the transfer of a file from one device to another.

Theory:

Bluetooth is a wireless technology standard used for exchanging data between fixed and mobile devices over short distances using UHF radio waves in the industrial, scientific and medical radio bands, from 2.402 GHz to 2.480 GHz, and building personal area networks (PANs). It was originally conceived as a wireless alternative to RS-232 data cables.
Bluetooth is managed by the Bluetooth Special Interest Group (SIG), which has more than 35,000 member companies in the areas of telecommunication, computing, networking, and consumer electronics. The IEEE standardized Bluetooth as IEEE 802.15.1, but no longer maintains the standard. The Bluetooth SIG oversees the development of the specification, manages the qualification program, and protects the trademarks. A manufacturer must meet Bluetooth SIG standards to market it as a Bluetooth device.

Transfer of words between two phones using Bluetooth is done below.

Code:

Main_Activity.java:

```
package com.santossingh.bluetoothfiletransfer;
import android.app.Dialog;
import android.bluetooth.BluetoothAdapter;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.content.pm.ResolveInfo;
import android.net.Uri;
import android.os.Environment;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
```

```
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import java.io.File;
import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {
    //Create Objects----------------------------------------------------
    Button buttonopenDailog, buttonUp, send;
    TextView textFolder;
    EditText dataPath;
    static final int CUSTOM_DIALOG_ID = 0;
    ListView dialog_ListView;
    File root, fileroot, curFolder;
    private List<String> fileList = new ArrayList<String>();
    private static final int DISCOVER_DURATION = 300;
    private static final int REQUEST_BLU = 1;
    BluetoothAdapter btAdatper = BluetoothAdapter.getDefaultAdapter();
    //------------------------------------------------------------
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        dataPath=(EditText)findViewById(R.id.FilePath);
        buttonopenDailog= (Button) findViewById(R.id.opendailog);
        send=(Button)findViewById(R.id.sendBtooth);
        buttonopenDailog.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                dataPath.setText("");
                showDialog(CUSTOM_DIALOG_ID);
            }
        });

        root = new File(Environment.getExternalStorageDirectory().getAbsolutePath());
        curFolder = root;
        send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                sendViaBluetooth();
            }
        });
```

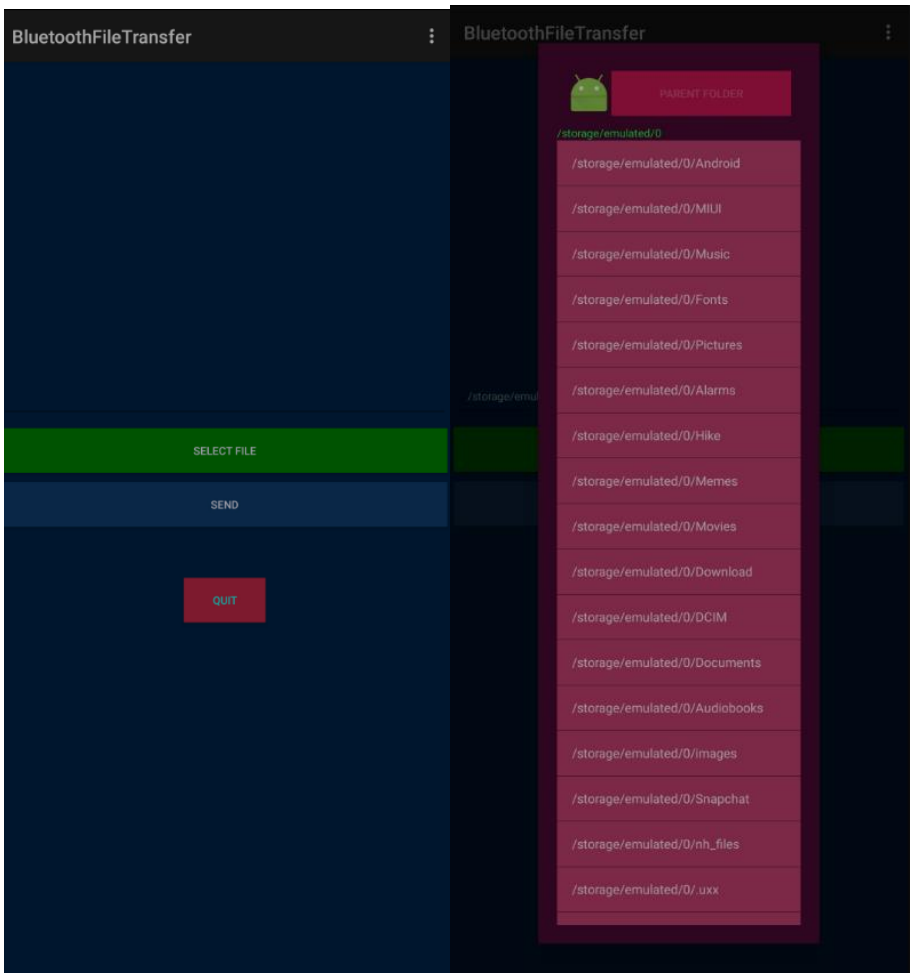
```
}
  @Override
  protected Dialog onCreateDialog(int id) {
    Dialog dialog = null;
    switch (id) {
      case CUSTOM_DIALOG_ID:
        dialog = new Dialog(MainActivity.this);
        dialog.setContentView(R.layout.dailoglayout);
        dialog.setTitle("File Selector");
        dialog.setCancelable(true);
        dialog.setCanceledOnTouchOutside(true);
        textFolder = (TextView) dialog.findViewById(R.id.folder);
        buttonUp = (Button) dialog.findViewById(R.id.up);
        buttonUp.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            ListDir(curFolder.getParentFile());
          }
        });
        dialog_ListView = (ListView) dialog.findViewById(R.id.dialoglist);
        dialog_ListView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
          @Override
          public void onItemClick(AdapterView<?> parent, View view, int position, long id)
{
            File selected = new File(fileList.get(position));
            if (selected.isDirectory()) {
              ListDir(selected);
            } else if (selected.isFile()) {
              getselectedFile(selected);
            } else {
              dismissDialog(CUSTOM_DIALOG_ID);
            }
          }
        });
        break;
    }
    return dialog;
  }
  @Override
  protected void onPrepareDialog(int id, Dialog dialog) {
    super.onPrepareDialog(id, dialog);
    switch (id) {
      case CUSTOM_DIALOG_ID:
        ListDir(curFolder);
```

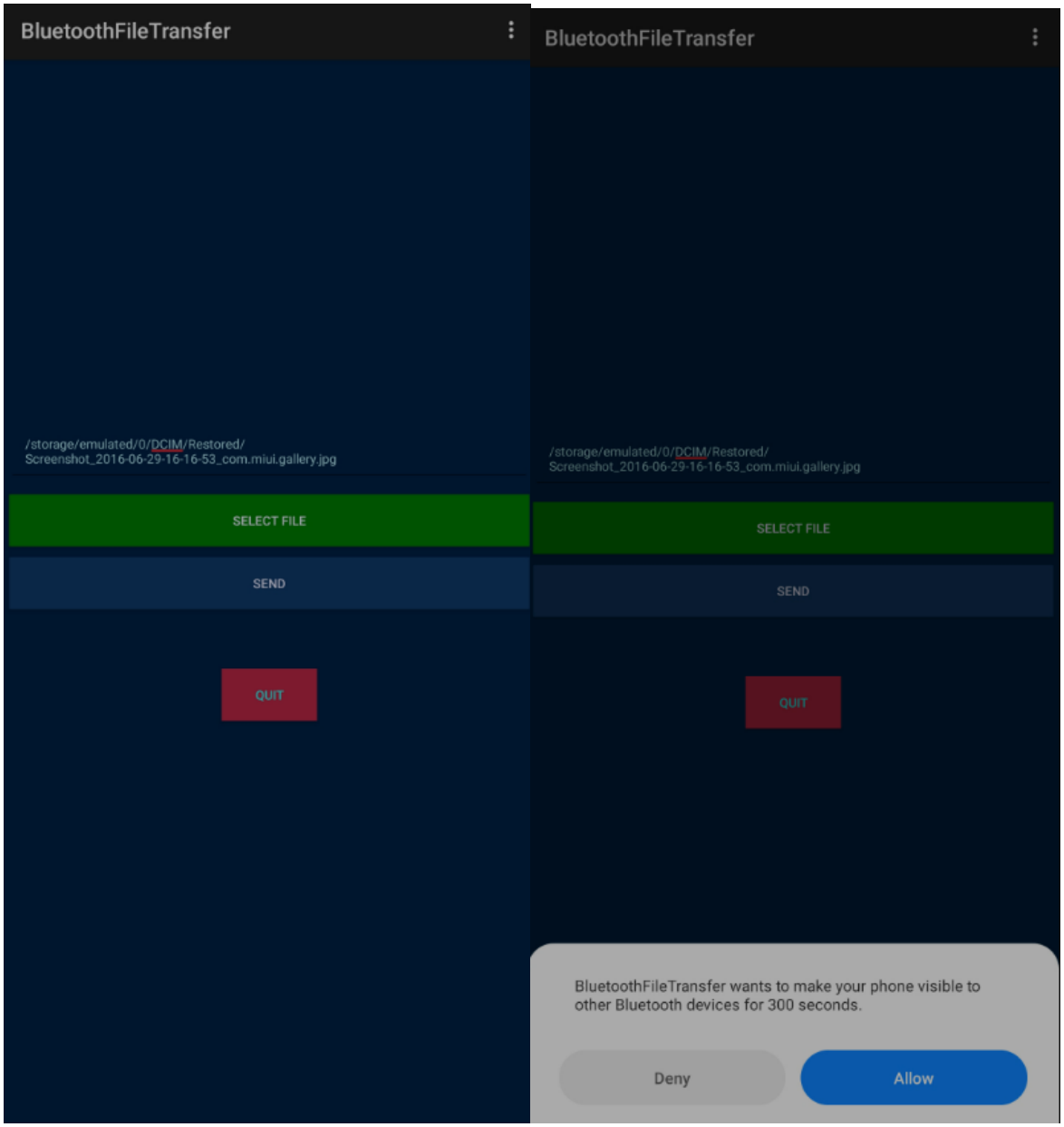
```
 break;
        }
    }
    public void getselectedFile(File f){
        dataPath.setText(f.getAbsolutePath());
        fileList.clear();
        dismissDialog(CUSTOM_DIALOG_ID);
    }
    public void ListDir(File f) {
        if (f.equals(root)) {
            buttonUp.setEnabled(false);
        } else {
            buttonUp.setEnabled(true);
        }
        curFolder = f;
        textFolder.setText(f.getAbsolutePath());
        dataPath.setText(f.getAbsolutePath());
        File[] files = f.listFiles();
        fileList.clear();
        for (File file : files) {
            fileList.add(file.getPath());
        }
        ArrayAdapter<String> directoryList = new ArrayAdapter<String>(this,
android.R.layout.simple_list_item_1, fileList);
        dialog_ListView.setAdapter(directoryList);
    }
    //exit to application-------------------------------------------------------------------------
    public void exit(View V) {
        btAdatper.disable();
        Toast.makeText(this,"*** Now Bluetooth is off... Thanks.
***",Toast.LENGTH_LONG).show();
        finish(); }
    //Method for send file via bluetooth----------------------------------------------------------
    public void sendViaBluetooth() {
        if(!dataPath.equals(null)){
        if (btAdatper == null) {
            Toast.makeText(this, "Device not support bluetooth", Toast.LENGTH_LONG).show();
        } else {
            enableBluetooth();
        }
    }else{
            Toast.makeText(this,"Please select a file.",Toast.LENGTH_LONG).show();
        }
```

```
}
  public void enableBluetooth() {
     Intent discoveryIntent = new
Intent(BluetoothAdapter.ACTION_REQUEST_DISCOVERABLE);
     discoveryIntent.putExtra(BluetoothAdapter.EXTRA_DISCOVERABLE_DURATION,
DISCOVER_DURATION);
     startActivityForResult(discoveryIntent, REQUEST_BLU);
  }

  //Override method for sending data via bluetooth availability-------------------------
  @Override
  protected void onActivityResult(int requestCode, int resultCode, Intent data) {
     if (resultCode == DISCOVER_DURATION && requestCode == REQUEST_BLU) {
        Intent i = new Intent();
        i.setAction(Intent.ACTION_SEND);
        i.setType("*/*");
        File file = new File(dataPath.getText().toString());

        i.putExtra(Intent.EXTRA_STREAM, Uri.fromFile(file));

        PackageManager pm = getPackageManager();
        List<ResolveInfo> list = pm.queryIntentActivities(i, 0);
        if (list.size() > 0) {
           String packageName = null;
           String className = null;
           boolean found = false;

           for (ResolveInfo info : list) {
              packageName = info.activityInfo.packageName;
              if (packageName.equals("com.android.bluetooth")) {
                 className = info.activityInfo.name;
                 found = true;
                 break;
              }
           }
           //CHECK BLUETOOTH available or not-----------------------------------------------
           if (!found) {
              Toast.makeText(this, "Bluetooth not been found",
Toast.LENGTH_LONG).show();
           } else {
              i.setClassName(packageName, className);
              startActivity(i);
           }
        }
```

```
} else {
            Toast.makeText(this, "Bluetooth is cancelled", Toast.LENGTH_LONG).show();
        }
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.menu_main, menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        // Handle action bar item clicks here. The action bar will
        // automatically handle clicks on the Home/Up button, so long
        // as you specify a parent activity in AndroidManifest.xml.
        int id = item.getItemId();

        //noinspection SimplifiableIfStatement
        if (id == R.id.action_settings) {
            Toast.makeText(this, "*****************\nDeveloper: Santosh Kumar
Singh\nContact: superssingh@gmail.com\n*****************",
Toast.LENGTH_LONG).show();
            return true;
        }
        return super.onOptionsItemSelected(item);
    }
}
```

Output:


BluetoothFileTransfer
SELECT FILE
SEND
QUIT
BluetoothFileTransfer
PARENT FOLDER
/storage/emulated/0
/storage/emulated/0/Android
/storage/emulated/0/MIUI
/storage/emulated/0/Music
/storage/emulated/0/Fonts
/storage/emulated/0/Pictures
/storage/emulated/0/Alarms
/storage/emulated/0/Hike
/storage/emulated/0/Memes
/storage/emulated/0/Movies
/storage/emulated/0/Download
/storage/emulated/0/DCIM
/storage/emulated/0/Documents
/storage/emulated/0/Audiobooks
/storage/emulated/0/images
/storage/emulated/0/Snapchat
/storage/emulated/0/nh_files
/storage/emulated/0/.uxx



GITHUB LINK: https://github.com/jayparekh1290/Mobile-Computing-Lab/tree/main/02%20BlueTooth

Conclusion: Thus, we have successfully performed the experiment of transferring data between two mobile phones using Bluetooth network and after that have checked and it performed.