**MINI PROJECT -2020**

**Computer Science Department**

**B.tech 3rd year**

Project Name- File Transfer App

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File Transferring App

Project idea -To develop an Android application that will transfer data from one device to another without access to the internet (using Wi-Fi Direct).

## Synopsis -

**How it works ?**

1. The app uses WIFI P2P API to establish connection.
2. After connection establishment, a socket connection is established between two devices.
3. The groupOwner acts as Server and other acts as client.
4. Data is sent through streams.

### Technical Requirements

* Using Wi-Fi direct requires a phone or tablet running Android 4.0 later.
* You also need to make sure the specific device supports Wi-Fi Direct.
* We use Android studio environment to develop app.

Feature: For secure connection we use QRCode .

|  |  |  |
| --- | --- | --- |
| The lead device:  1.Create a hotspot | 2. Accept Socket connection | 3. Create QRCode |
| The other device:  1. Scan QRCode | 2. Connects to hotspot | 3. Connect as Client |

## Methodology - Java Language

* Create user interface (UI)
* Enable & Disable Wi-Fi Programmatically

**Import** WifiManager

**Create object** of wifiManager

**Check current status**- wifiManager.isWifiEnabled(); // return boolean

**Enabled / Disabled**- wifiManager.setWifiEnabled(boolean);

* Creating a Broadcast Receiver for Wi-Fi P2P Intents

WIFI\_P2P\_STATE\_CHANGED\_ACTION

(Indicate whether Wi-Fi p2p is enabled)

WIFI\_P2P\_PEERS\_CHANGED\_ACTION

(Indicate that the available peer list has changed)

WIFI\_P2P\_CONNECTION\_CHANGED\_ACTION

(Indicate the state of WI-FI P2P connectivity has changed)

WIFI\_P2P\_THIS\_DEVICE\_CHANGED\_ACTION

(Indicate this device's configuration detail have changed)

* Discovering peers for Wi-Fi direct **Override** two methods for discoveryPeers- 1.onSuccess() 2-onFailure()

**Create** ListView to contain device name **Create** String Array to show device name **Create** Array to connect a device

* Connect to a Peer for Wi-Fi direct

**Create** object of WIFIP2PDevice using device Array

**Create** object of groupOwnerAddress

**Check** connection status of host & Client

* Wi-Fi Direct Data Transfer (Server Thread)
* Wi-Fi Direct Data Transfer (Send \_ Receive)

## Comparison of Wireless Technologies -

* WiFi Direct is a better option than Bluetooth & NFC

# NFC

### Advantages:

* + Simple operation to connect with others and transfer files.

### Disadvantages:

* + A number of devices don't support NFC.
  + Its range is very short (<0.1m).

# Bluetooth

### Advantages:

* + Bluetooth is a traditional data transferring way.
  + Bluetooth APIs are easy to follow and implement.

### Disadvantages:

* + Its transmission speed is slow.
  + Signal coverage up to 20 meters at most.

# Wi-Fi Direct

### Advantages:

* + It has a faster transfer speed than others.
  + Wi-Fi Direct signal can cover a wider range (200m) than Bluetooth.
  + It supports WPA2 encryption.
  + It is a software-based feature.
  + Its transmission processes are flexible and controllable.

### Disadvantages:

* + It require Android 4.0 (API level 14) or later devices.
  + It consume more battery than Bluetooth.

Reason for selecting this topic -

* + In business, file sharing is a major business application used by millions of companies and individual users across the world.
  + With file sharing app, employee effort and time–become efficiently utilized.
  + File sharing apps hastened the nature of work collaboration.

## Contribution of the File transfer app -

* + Cyber Security field- File sharing apps are a common tool used in cyber attacks, both by professional hackers and ordinary individuals.
  + Education field- Study stuff & business documents instantly shared.
  + Government- Government use file sharing to share the important information on websites with limited rights.
  + IT Industries-With file sharing app, employee effort and time–become efficiently utilized.

## Future Scope -

* + It can extend into a cloud-based productivity platform like *Google Drive and Dropbox.*
  + Transferring large files quicker by seeding process as seen in *Spotify and BitTorrent.*
  + It can works as a built-in capability of an OS to share files among computers with the same OS.
  + It can extend into a centralized File system like *IBM Aspera.*

Conclusion -

With its simple setup, longer range and much higher transfer speeds, WiFi Direct is a better option than Bluetooth & NFC for wireless file transfers between two devices.This project is developed using java & android platform.It indubitably meet to our expectation of file sharing.