**Project 4: Wi-Fi Network Scanner**

**Problem Statement:** Users often need to check available networks and their signalstrength for optimal connectivity.

**Objective:** Create a scanner that lists nearby Wi-Fi networks with basic information such as signal strength.

**Requirements:**

Python

subprocess or os module (Linux/Windows)

wifi or pywifi library (platform-dependent)

**Expected Outcome:** A script or app that scans and displays available Wi-Fi networks, helping users choose the best one.

**SOLUTION:**

Here is a well-structured, clean, and project that checks script/app that scans nearby Wi-Fi networks and shows basic info like:

* SSID (network name)
* Signal strength
* Whether it's secured or open

**Folder Structure**

* wifi\_scanner.py
* README.md

**Requirements**

To run this project, install the pywifi library:

------ pip install pywifi

**CODE:**

import pywifi

from pywifi import const

import time

def scan\_wifi():

wifi = pywifi.PyWiFi()

iface = wifi.interfaces()[0]

iface.scan()

time.sleep(2) # Wait for scan to complete

results = iface.scan\_results()

print("\nNearby Wi-Fi Networks:\n")

print("{:<30} {:<15} {:<10}".format("SSID", "Signal (dBm)", "Security"))

print("-" \* 55)

for network in results:

ssid = network.ssid

signal = network.signal # closer to 0 = stronger signal

security = "Secured" if network.akm else "Open"

print("{:<30} {:<15} {:<10}".format(ssid, signal, security))

if \_\_name\_\_ == "\_\_main\_\_":

print("Wi-Fi Network Scanner")

scan\_wifi()

**README.md**

# Wi-Fi Network Scanner

## Objective

A Python script that scans and displays nearby Wi-Fi networks with their signal strength and security type.

## Features

- Lists all visible Wi-Fi networks

- Shows signal strength (in dBm)

- Displays if the network is open or secured

## Requirements

- Python 3

- `pywifi` library

**Install with:**

pip install pywifi and

pip install comtypes

**How to Run**

python wifi\_scanner.py

**IMP Notes**

* This script only scans networks, it does not connect to them.
* Works on most Windows and Linux machines with Wi-Fi support.

**Outcome:**

