Wi-Fi Network Scanner

1. Introduction

The Wi-Fi Network Scanner project demonstrates how to scan nearby wireless networks using Python. The tool identifies surrounding Wi-Fi networks, displaying their SSID, BSSID (MAC address), and signal strength in dBm. This project is useful for understanding network environments and optimizing wireless connectivity.

2. Abstract

Using the 'pywifi' library, this tool scans the available Wi-Fi networks through the first wireless network interface. It gathers information such as network names, unique MAC addresses, and signal strength levels. The results are displayed in a simple tabular format on the command line for user analysis.

3. Tools Used

- Python 3.x
- pywifi
- time

4. Steps Involved in Building the Project

1. Installed the 'pywifi' library to interact with the system's wireless interface.
2. Initialized the Wi-Fi interface using the PyWiFi class.
3. Performed a scan for nearby networks.
4. Retrieved and processed scan results.
5. Displayed network information including SSID, BSSID, and signal strength.
6. Implemented error handling and ethical usage disclaimer in the code.

5. Conclusion

The Wi-Fi Network Scanner successfully identifies nearby wireless networks and provides valuable information for network optimization and analysis. This tool serves as a simple demonstration of network scanning using Python in cybersecurity education.