A Novel Captive Portal System for Reduction of Wireless Networks Security Threats in the Tamale Metropolis

Abstract

This research work provides an entire overview of Wireless Local Area Network (WLAN), its structure or components and the security threats associated with it. Review of literature and survey of institutions and businesses in the Tamale Metropolis, shows that Wireless Local Area Network is commonly used especially by hospitals, schools, internet cafes and some other private organizations. Its main’s advantage to the society is that a wireless network allows machines to be fully mobile as long as they remain in radio range and also avoids the burden of having cables between the machines. However, Wireless Local Area Networks with these advantages comes with the security threats. The research therefore evaluates the advantages and disadvantages of Wireless Local Area Networks, determine the structure/components of Wireless Local Area Networks and the security threats associated with it. It also revealed that Wireless Local Area Networks must be protected or the security of wireless networks must be enhanced. The research therefore developed a web-based application (a captive portal) to help reduce the security threats associated with Wireless Local Area Network, by preventing intruders or hackers into the system through; capturing user credentials, masquerading as an
authorized Access Point by beaconing the WLAN’s service set identifier (SSID) and capturing data to recover a Wired Equivalent Privacy (WEP) key.

References


Index Terms

Computer Science Security

Keywords

Bootstrap (JavaScript, CSS), Structured query Language (SQL), Hypertext markup language (HTML), Adobe Dreamweaver, Personal Home Page (PhP), web-based, Proposed system, Wireless Local Area Network (WLAN).