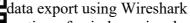
COMP4336/9336 Mobile Data Networking

Lab 2: Experimental stills of Virlags signal sangificant piss

Objectives

1. To learn WiFi to

2. To observe sor capturing and a may not be able



perties of wireless signal strength and noise through aces [noise measurement is optional as some platforms d signal-to-noise ratio]

Prerequisites

- Access to two mobile devices, such as a laptop and a mobile phone with WiFi interfaces
- Wireshark (and any additional monitoring software, e.g., Network Monitor for Windows users) installed in one of the delices, we talk the light of
- Familiarity with Wireshark, such as completion of Lab 1

Task 1 [2 marks] Assignment Project Exam Help

For this task, you will be using a pre-collected WiFi trace available for you to download from https://cloudstor.aarnet.edu.au/plus/s/wVjxpWUJaEsgUgi. This trace was collected by a laptop connected to a mobile phone was moved away from the laptop slowly, then moved back close to it again, and moved away once again. The trace was captured in *monitor mode*, so it also includes packets from other near by Viris SSDA 9389476

Your tasks are:

- Plot signal strength Soise (N) to light to Soise (N) to
- Provide a short (one paragraph) commentary about your observation of the dynamics of S, N, and SNR over time as the mobile phone moved back and forth (**Hint:** Did S increase/decrease? How about N and SNR? Why they did or did not increase/decrease, or why some increased/decreased more than others and why the increase/decrease followed certain parameters?) [1 mark]

Here are the 5 steps to complete the plotting/graphing tasks:

- **Step 1:** Import the trace into Wireshark
- **Step 2:** Use *display filter* to remove all other packets except the **beacons** from SSID=COMP4336
- Step 3: Add signal strength, noise level, and SNR columns to the display (Hint: Find one of the beacon frames of COMP4336 and in the packet details in 802.11 radio information, find its Signal Strength. Right click on it and select "apply as column". A new column should be appeared in the packet list in the upper window. Do the same for Noise Level and SNR).
- **Step 4.** Export and save all beacon data (all columns) of SSID=COMP4336 into a CSV file (Hint: File menu usually will have this export option for most Wireshark versions).
- Step 5. Open the CSV file in your favourite graphing tool, e.g., Excel, Matlab, Python, etc., and plot the S, N, and SNR over time (Hint: There is a time associated with each packet capture, which is available in one of the Wireshark trace columns).

Task 2 [2 marks]

For this task, you are required of apture amanalyse four tlaces at a low [the property about noise and SNR if your platform cannot capture them].

- Set your phone (usually you muyour mobile phone and start captured from the laptop from the laptop close to the laptop seconds or so depending on how far and fast you travel/walk.
- After the capture, follows the 5 steps described under Task 1 to plot the S, N, and SNR graphs for the beacon parket ou captured for Stible Our ZIS". [1 mark]
- Write a commentary for the graphs [1 mark]

Assignment Project Exam Help

What to submit?

Submit the following tweeting air productions of the submit the submit

- 1. A **PDF** report that includes the following information:
 - a. Task 1: Wiresbark screen showing the filter expression, display of all beacon frames from SSID=COMP4336 ("COMP4336" should be visible) including columns for S, N, and SNR
 - b. Task 1: https://autorcs.com
 - c. Task 1: Commentary on the graphs following the guidelines given under Task 1
 - d. Task 2: Wireshark screen shot showing the filter expression, display of all beacon frames from SSID="your ZID" ("your ZID" should be visible) including columns for S, N, and SNR
 - e. Task 2: 3 graphs (S, N, and SNR)
 - f. Task 2: Commentary on the graphs following the guidelines given under Task 1
- 2. A compressed **ZIP** file containing the following files (name them clearly to identify which is what):
 - a. Task 1: The CSV file
 - b. Task 2: The CSV file and the trace file (Wireshark should be able to open the trace file)

Penalty at the rate of 5% for each day late will be strictly enforced for all lab submissions.

All submissions will be subject to strict UNSW plagiarism rules.

End of Lab 2 (We hope you enjoyed this lab)