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UNIVERSITY OF NEW BRUNSWICK
Faculty of Computer Science
Network Security (CS4415-CS6415) - Winter 2023
Assignment (1) – Unsecure Socket and Capturing Traffic

Due date/time: Saturday, Feb 7, 2023, at 11:59 PM

The main goal of this assignment is to familiarize you with unsecure sockets and data leakage problem as a serious security threat.

Instructions: Turn on the **Victim-Windows** machine.

- Be sure that your firewall is off.
- Execute the Server-Side socket program and specify the IP and Port Number.

Turn on the **Attacker-Kali** machine and

- Develop your own client-side socket program to connect the running Server-Side socket program.
- Develop your own Client-Side socket program to send your full name as well as student ID from the **Attacker-Kali** machine to the Server-Side socket program running on **Victim-Windows**.
- My suggestion is to develop your client-side socket program by either Python or C as both gcc compiler (version 8.3) and python interpreter (version 2.7.16) are available on Kali by default.

Note: Save all outputs, including screenshots, scripts, source codes, and so on, in one file namely <Your entire name>_<StuID>_A<Assignment Number>". For example, if your name is John Johny with 1234567 as your student ID and this is your first assignment, your assignment file name should be

"JohnJohny_1234567_A1.doc".

Requests:

- Send your full name and student ID from the Client-Side application to the listening Server-Side socket.
- Copy your developed **Client-side socket source code**.
- Screenshots from both Client-Side and Server-Side programs.
- Screenshots of all **netstat -an** command before, during, and after executing each program.
- Run Wireshark on the attacker-Kali and find the communicated plaintext data (your name and student ID) and insert the screenshot.
- List all possible socket's states and briefly explain them.