**CI 201 Spring 2023 - Reinsch**

**CI 201 Spring 2023 Group Scripting Project #1: Network Reconnaissance**

* Create a Bash shell script including Your name, Course (and section #), and information on what the script does in a comments section at the top of the shell script.

**Due: April 3, 2023 11:59pm**

Submittals: Bash Shell Script for the Network Reconnaissance Tool

Output for the Ping Sweep Results

Output for the Port Scan Results

* **CI 201 Spring 2023 Group Scripting Project #1 Directions**

Project will consist of a Bash shell script consisting of a series of functions that contain menus and sub-menus for a network reconnaissance tool. The script will use the following shell concepts to implement the menus:

1. Functions
2. Select Loops or Statements
   1. Case Statements (where the actual code will be implemented)
3. Flow Controls
   1. For Loops
   2. While Loops
   3. If statements
4. Re-direction / Pipe Utilization
5. Linux Exit Code Usage

The script will require that the developer declare the following functions:

1. Main Menu
2. Ping Sweep
3. Port Scan
4. Print Scan Results

Further each function will implement the following

1. Main Menu Function
   1. Echo the following to the screen (echo "---------- Main Menu ----------")
   2. Use select loops and case statements to implement the following menu:
      1. Ping Sweep
      2. Port Scan
      3. Print Scan Results
      4. Exit Program
   3. Each case statement should perform a function call to the applicable function
   4. For the exit program case; developer should echo an exit related comment to the user and then exit the program using an exit 0 command.
2. Ping Sweep Function
   1. Echo the following to the screen (echo "---------- Ping Sweep ----------")
   2. Re-direct the date to the file: pingresults.txt (Do not initialize file)
   3. Prompt the user to enter in the first three number sequences of an IP address (after giving the user specific directions on how to enter the numbers (remember you will want to iterate through the final number sequence))
   4. Use a for loop to iterate through each number in a subnet
   5. Inside the loop:
      1. Echo to the screen the IP address being pinged
      2. Using a ping command inside an if statement determine if a host is active. If so identify the host as being active. Redirect this response to the pingresults.txt file
   6. Outside the loop return to the Main Menu function
3. Port Scan Function
   1. Echo the following to the screen (echo "---------- Port Scan ----------")
   2. Re-direct the date to the file: portscanresults.txt (Do not initialize file)
   3. Prompt the user to enter in the IP address number for the active host that will be scanned (after giving the user specific directions on how to enter the numbers).
   4. Use a for loop to iterate through port numbers on the host device
   5. Inside the loop:
      1. Echo to the screen the host address being scanned
      2. Using an if statement determine if a port is active on the host address and if it is identify that port as being active. Redirect this response to the portscanresults.txt file
   6. Outside the loop return to the Main Menu function
4. Print Scan Results Function
   1. Use select loops and Case statements to implement the following menu:
      1. Display “Ping Sweep Results”
      2. Display “Port Scan Results”
      3. Remove Ping Sweep Results file
      4. Remove Port Scan Results file
      5. Return to Main Menu
   2. In the Ping Sweep Results case Display (to the screen) the pingresults.txt file. Then return to the Print Scan Results function
   3. In the Port Scan Results case; Display (to the screen) the portscanresults.txt file. Then return to the Print Scan Results function.
   4. In the Remove Ping Sweep Results case; Remove the pingresults.txt file. Then return to the Print Scan Results function
   5. In the Remove Port Scan Results case; Remove the portscanresults.txt file. Then return to the Print Scan Results function
   6. In the Return to Main Menu case perform a function call and return to the main menu function.