INTRODUCTION

The first project in the networking lab will be a simple application that processes a configuration file and interacts with a user while producing output to both the screen and a log file. This project serves as an orientation to the Python programming language as well as configuration and log file modules. It will also be the foundation for the other two projects.

BACKGROUND

Python is a high-level, general-purpose programming language that runs on many system architectures and operating systems. It is widely used in web applications, software development, data science, and machine learning (ML). Python is efficient, easy to learn, and open source.

There are three constructs that we will use throughout the network lab that will be introduced in this project:

- Prompting for and processing input
- Using a configuration file to control an application's settings
- Write entries to a log file to show processing status as well as warnings and errors

REQUIREMENTS

1. Create a standalone, interactive, application that performs these tasks:
   a. Open and read a configuration file using the Python **`configparser`** library, then print to the screen each configuration option

      A configuration file is an industry "best practice" for passing run-time configuration values to an application

   b. Open a log file using the Python **`logger`** library and write your application activity to the log file

      Producing a log file from an application is an industry best practice that assists with debugging and auditing activity

   c. Loop while prompting the user of the application for input strings and then process each as follows:
      i. Input strings should be made up of one or more words
      ii. Print the input string to the screen and to the log file
      iii. Parse the input string by tokenizing the string, delimiting on whitespace (blanks)
      iv. Convert (translate) only the first token to all uppercase characters
      v. Concatenate all tokens back into a string separated by whitespace (blanks)
      vi. Print the processed string to the screen and to the log file

d. If the first token was the word "QUIT", then
   i. Display "Shutting down …" to the screen and to the log file
   ii. Exit the application

Grading

To earn credit for this project, you will need to;

1. Record a video of you running your completed project in the OSU Student Linux environment
2. Submitting the video, along with your source code and the log file produced after running your application, to Carmen

STEPS

1. Login to the OSU Student Linux environment
2. Upload your application (Python script) and the provided configuration file
3. Start a Zoom session, share your terminal window and begin recording
4. Run your application and type in each of the provided strings
5. After the last of the provided strings and you've quit running your application, stop recording
6. Download your application's log file
7. Create a ZIP file with your source code, your log file, and the recording of your session
8. Submit your ZIP file to Carmen

CREDIT

Credit will be given as follows:

• Application runs without failures/errors	5 Points
• Fulfills each of the stated requirements	5 points

Partial credit will be given wherever possible.

Notes

- Python resources:
  - https://www.learnpython.org
  - https://www.w3schools.com/python
  - https://docs.python.org/3/library/configparser.html
  - https://pypi.org/project/configparser
  - https://docs.python.org/3/howto/logging.html
  - https://realpython.com/python-logging

- Commenting code is an industry best practice and will assist in assigning partial credit if necessary
- Please review the Grading section of the syllabus