

# Network Programming

## Assignment 4

### Submission Instruction:

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- Due date: Jun 10, 2022
- Compress the following files in a zip format
  - (1) python scripts (2) data files(CSVs) (3) Execution results(PDFs)
- zip file name: {student ID}.zip (e.g., 123456789.py)
- Example File tree
  - 123456789.zip
    - problem1\_server.py
    - problem1\_client.py
    - problem1\_csv.csv
    - problem2\_scraper.py
    - problem2\_csv.csv
    - output.pdf
- There will be a deduction of points (up to 50%) if you do not follow the above instruction.

### Evaluation Criteria:

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- Your codes will be cross-checked with others to detect copying, and you will get zero points under such circumstances.
- Your codes will be evaluated based on programming style (organization, comments, readability), program function (completeness), documentation (demonstration, exception handling), etc.

### Inquiries:

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- Send inquiries to the TA: Ankit Kumar Singh (ankit@soongsil.ac.kr).

**Some Suggestions to solve the problem:**

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- Read the submission instructions carefully (Incorrect submission format may lead to deduction of points).
- Read textbook chapters 9, 10, and 11.
- Read problem statements 2-3 times to understand.
- After following the above suggestions don't solve your problem or doubt send an inquiry to TA.

**Questions:**

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[Total: 10 points]

**Problem Statements:****1. (5 points) What is ...?**

Write Python scripts to create an HTTP server and client.

**Functions of HTTP server :**

1. The HTTP server will have a CSV file(read CSV instruction below) containing the keywords and their definitions (a brief summary of each keyword).
2. The server will receive a keyword request(e.g. Host) from the client, read the keyword definition from the CSV file, and send the respective definition back to the client.

*For example, "Host" is defined as a "The HTTP host header is a request header that specifies the domain to which a client wants to connect. This header is required because it is fairly common for servers to host websites and applications at the same IP address. They don't always know where to send the request, though."*

**Functions of HTTP client:**

1. The client will take input from the keyboard for the keyword and send the keyword to the server to get its definition.

**Instruction for CSV file:**

1. Manually create a CSV file.
2. The first column of the CSV file will contain the keywords and the second column will contain its definitions.
3. The CSV file must contain at least ten keywords and their definitions / short summaries.

Example:

Keyword: Host

*Definition: The HTTP host header is a request header that specifies the domain to which a client wants to connect. This header is required because it is fairly common for servers to host websites and applications at the same IP address. They don't always know where to send the request, though.*

**Keywords:** HTTP, Host, Port, Header, Encryption, and Framing, GET common method, POST common method, URL, Status Code, Caching, Content type, Content-Encoding, HTTP Authentication, Cookies, Session, WSGI, HTTP proxy, Gunicorn, Apache, Nginx, REST, HTML, JSON, XML, WWW, etc.

## **2. [5 points] Scraper**

Develop a web scraper application to scrape the details of the members(current and alumni) from the site(<https://sites.google.com/view/davidchoi/home/members>) and store them in a CSV file.

Notes:

1. Format of CSV value (name, job\_role, start\_year, end\_year, research\_interest(for Current Members), current\_job\_role (for Alumnies), profile\_pic\_url)
2. Place **“NA”** for the missing value.