

User Manual with sample screenshots

Instructions: Keep all the files in the same folder.

The code is written in Python.

Problem Statement: Consider a monitoring system, which monitors 1000 servers. Each server has 2 CPUs. Each server generates a log for CPU usage every minute.

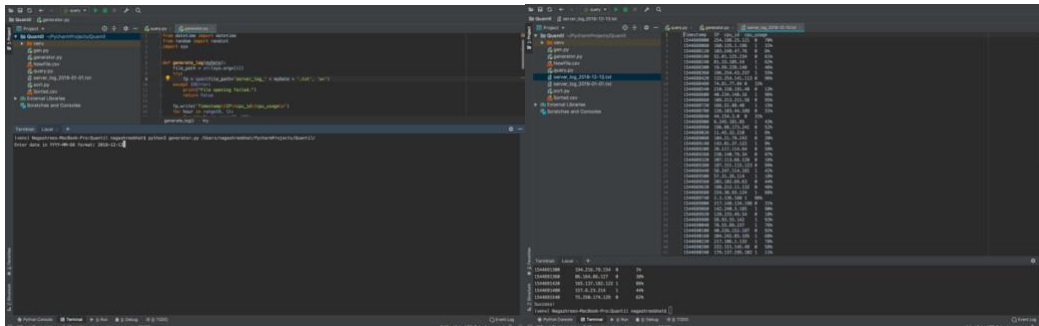
The format is like this:

| timestamp | IP | cpu_id | usage |
|------------|--------------|--------|-------|
| 1414689783 | 192.168.1.10 | 0 | 87 |
| 1414689783 | 192.168.1.10 | 1 | 90 |
| 1414689783 | 192.168.1.11 | 1 | 93 |

1. Please write a simulator to generate the logs for one day, say 2014-10-31, just use random numbers between 0% to 100% as CPU usage. The generator should write data to files in a directory. The timestamp is Unix time.

Run the following query: `python generator.py DATA_PATH`

Eg: `python3 generator.py /Users/nagashreebhat/PycharmProjects/Quantil/`



2. Please create a command line tool which takes a directory of data files as a parameter and lets you query CPU usage for a specific CPU in a given time period. It is an interactive command line tool which read a user's commands from stdin.

The tool should support two commands. One command will print results to stdout. Its syntax is `QUERY IP cpu_id time_start time_end`. Time_start and time_end should be specified in the format `YYYY-MM-DD HH:MM` where YYYY is a four digit year, MM is a two digit month (i.e., 01 to 12), DD is the day of the month (i.e., 01 to 31), HH is the hour of the day, and MM is the minute of an hour. The second command to support is `EXIT`. It will exit the tool.

The tool may take several minutes to initialize, but the query result should be returned within 1 second.

Run the following command: `python3 querying.py ./`

`python3 querying.py ./server_log_2017-10-01.txt 2017-10-01T01:01 2017-10-01T10:01`

The image shows a PyCharm IDE with a Jupyter Notebook and a terminal window. The Jupyter Notebook contains a list of IP addresses and their associated percentages, which are displayed in a table format. The terminal window shows the output of a script, including a list of IP addresses and their associated percentages, and a success message.

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Success!
(jupyter) Magazines-MacBook-Pro:Quant11 [magazines@157.140.2.100] python query.py ./
Enter date in YYYY-MM-DD format: 2017-10-01
```

I spent 4-5 hours on this exercise.