Operating Systems: Assignment – 2

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Summary: In this assignment, multithreading has been implemented in order to find the number of unique IP addresses from the given log.

Approach: I have created and used three structures in this program:
1. Structure for finding the key value pair
2. Structure for putting these in a PHP style associative array.
3. Structure for putting the above values in a python style dictionary.

The valid key-values pairs in the associative array are entered in the dictionary as we parse the logs. If there is a new value for the same key, the new value is updated for that key in the dictionary. Whenever a new value is updated in the dictionary, a mutex lock variable is used as instructed by the professor. Accordingly, the count for the unique IP addresses is incremented. The value of the counter eventually gives us the number of unique IP addresses.

Execution instructions:

For compilation: gcc -o fileparse fileparse.c –lpthread

For execution: ./fileparse access_logs/ <number-of-threads>

Screenshot:

Reference:
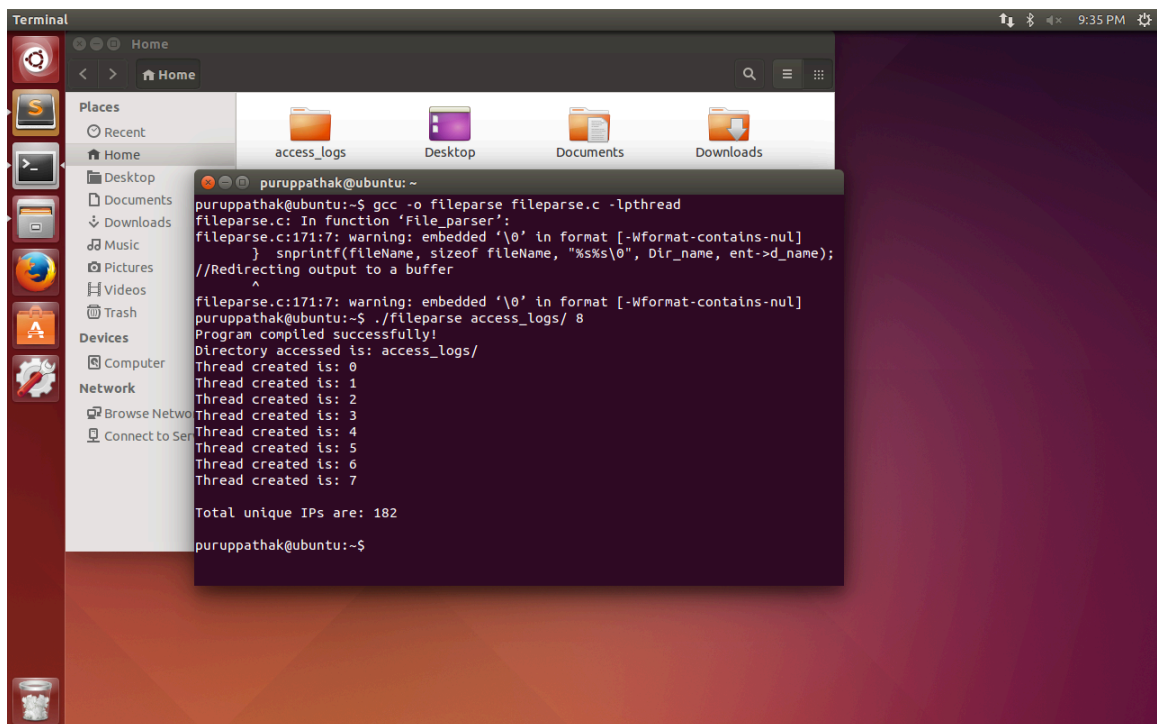
- https://computing.llnl.gov/tutorials/pthreads/
- www.gnu.org
- www.stackoverflow.org
- www.cprogramming.com
- www.github.com