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.

(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.

E.g.

To run the generator:
./generate.sh DATA_PATH

To run the interactive query tool:
./query.sh DATA_PATH
>QUERY 192.168.1.10 1 2014-10-31 00:00 2014-10-31 00:05
CPU1 usage on 192.168.1.10:
(2014-10-31 00:00, 90%), (2014-10-31 00:01, 89%), (2014-10-31 00:02, 87%), (2014-10-31 00:03, 94%) (2014-10-31 00:04, 88%)
>QUERY 192.168.1.12 0 2014-10-31 00:00 2014-10-31 00:05
CPU0 usage on 192.168.1.12:
(2014-10-31 00:00, 90%), (2014-10-31 00:01, 89%), (2014-10-31 00:02, 87%), (2014-10-31 00:03, 94%), (2014-10-31 00:04, 88%)
>EXIT

You may use C, C++, Java, or a scripting language like Perl, Python, or PHP.
Please provide the code, along with documentation and project file to compile it if needed, and an output file demonstrating its operation.   Also, tell us how much time you spent on the exercise.