Lab Activity 1 - SHELL

Software System Development – Monsoon 2024
Due Date: 14 August 2024, 05:00 pm

Instructions:

1. Deadline mentioned during the Lab is strictly immutable. **No extensions will be given.**
2. Any naming convention mentioned in the lab activity must be followed strictly or marks may be deducted for the same.
3. Any plagiarized content will fetch zero marks for the current lab and will be followed by strict action against the students involved. However, discussion of ideas is allowed.
4. Use of any LLMs is strictly prohibited and would fetch zero marks for the lab if found. This is a learning activity, and academic integrity is taken seriously.

Submission Criteria:

➢ Create a folder with your roll number as its name and containing the following files corresponding to the questions:
  ○ <roll_number>_q1.sh
  ○ <roll_number>_q2.sh
  ○ README.md

➢ Compress the folder as a zip file (name should be <roll_number>.zip) and then upload it on the Moodle before deadline.

➢ README.md should contain steps for execution of your script and any extra information that you want the evaluator to know before running your script, such as dependencies on some external tools or libraries.

➢ For Example:
2023201079.zip
         |_____2023201079
                 |_____2023201079_q1.sh
                 |_____2023201079_q2.sh
                 |_____README.md

Note : Please take care of the directory structure and naming convention because the lab will be graded via automated scripts and any lack of adherence will be your own responsibility.

Question 1: (5 marks)

You have a log file named **access.log** containing HTTP request data, with each line in the following format:

127.0.0.1 - - [08/Aug/2024:14:55:02 +0000] "GET /index.html HTTP/1.1" 200 1043

Task: Write a bash script to extract all lines from access.log where the request method is POST and the HTTP status code is 404.

[access.log]
127.0.0.1 - - [08/Aug/2024:14:55:02 +0000] "GET /index.html HTTP/1.1" 200 1043
127.0.0.1 - - [08/Aug/2024:14:55:03 +0000] "POST /login HTTP/1.1" 200 512
127.0.0.1 - - [08/Aug/2024:14:55:05 +0000] "POST /submit HTTP/1.1" 404 1024
127.0.0.1 - - [08/Aug/2024:14:55:06 +0000] "GET /about.html HTTP/1.1" 404 2048
127.0.0.1 - - [08/Aug/2024:14:55:08 +0000] "POST /upload HTTP/1.1" 404 512
127.0.0.1 - - [08/Aug/2024:14:55:10 +0000] "POST /data HTTP/1.1" 200 256
127.0.0.1 - - [08/Aug/2024:14:55:12 +0000] "GET /home HTTP/1.1" 500 1024
127.0.0.1 - - [08/Aug/2024:14:55:14 +0000] "POST /edit HTTP/1.1" 404 768
127.0.0.1 - - [08/Aug/2024:14:55:16 +0000] "GET /contact HTTP/1.1" 200 2048

Expected Output :
127.0.0.1 - - [08/Aug/2024:14:55:05 +0000] "POST /submit HTTP/1.1" 404 1024
127.0.0.1 - - [08/Aug/2024:14:55:08 +0000] "POST /upload HTTP/1.1" 404 512
127.0.0.1 - - [08/Aug/2024:14:55:14 +0000] "POST /edit HTTP/1.1" 404 768

Question 2: (5 marks)

Welcome to IIIT Hyderabad, where you've just embarked on your journey as a fresh student. The campus is a blend of excitement and nerves as you and your fellow newbies explore the halls, marvel at the cutting-edge labs, and try to get your bearings. Little do you know, lurking behind the warm welcomes and orientation sessions, is the true beast of IIIT: the unrelenting workload that's about to crash down on you like a tidal wave.

In your first week, the professors seem kind enough—until they casually drop the bombshell: a massive group project with an impossible deadline. You've barely settled into your dorm room, and now you're expected to juggle research papers, coding assignments, and presentations like a seasoned pro. But here's the twist—no one told you just how intense things get around here.

As you and your new friends gather at the JC, you realize you have no idea how much work anyone actually completed. One of your more tech-savvy buddies suggests checking out a

mysterious file they found on the server, labeled **power_levels.txt**. It seems that some upperclassmen left behind a record of their "workload power levels"—a kind of secret indicator of how much work each student managed to survive. The file looks like this:

101,Goku,DBZ,88000
102,Saitama,One Punch Man,83000
103,Gojo,JJK,57000
104,Luffy,One Piece,64000
105,Ichigo,Bleach,43000

Each line represents how much work a senior (disguised as anime characters) has completed. To gauge whether your group has any hope of surviving this first onslaught of IIIT Hyderabad's legendary workload, you need to sum up these "power levels" and see if you can make it through with your sanity (and social life) intact.

Your task: Write a bash script to calculate the total power level of all the seniors in power_levels.txt. A single-liner command is very much possible.

Expected Output: 335000
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