

## Introduction:

This Flask-based REST API provides functionality for managing log files. It allows users to:

- Count distinct queries based on date.
- Add new log entries.
- Delete specific log entries that is kept as data\_prefix in the code(both date and full timestamp).

## Features:

### GET Requests:

- Endpoint: /queries/count/<date\_prefix>
- Description: Returns the count of distinct queries in the log file that match the provided date prefix. Wrks both just dates or full timestamp: YYYY-MM-DD or YYYY-MM-DD HH:MM:SS.
- Example: curl -X GET <http://127.0.0.1:5000/queries/count/2024-09-13> or <http://127.0.0.1:5000/queries/count/2024-09-13%2012:45:00>

### POST Requests:

- Endpoint: /queries/count/<date\_prefix>
- Description: Adds a new log entry to the log file.
- Payload Example: // IN POWER SHELL- since the curl does not support post request method on windows i used Invoke-RestMethod  
PS C:\Users\FatPenguin> \$headers = @{"Content-Type"="application/json"}  
>> \$body = '{"timestamp": "2024-09-13 12:45:00", "query": "search term 1"}'  
>>  
>> Invoke-RestMethod -Uri http://127.0.0.1:5000/queries/count/2024 -Method POST -Headers \$headers -Body \$body

\*\* this is a template that i prepared so that it would be easy for me to edit and create specific post requests. Thats why i am using header and body.

### DELETE Requests:

- Endpoint: /queries/count/<date\_prefix>
- Description: Deletes log entries that match the provided date\_prefix. Supports both date and full timestamp prefixes.
- Example: curl -X DELETE http://127.0.0.1:5000/queries/count/2024-09-13

## Efficiency Choices:

### 1. lru\_cache:

This cache decorator is used to avoid reading the log file multiple times when querying for the same date\_prefix. In code i used the line `@lru_cache(maxsize=4)` because initially there is only 4 different days in .tsv file as in 2015-08-01/04.

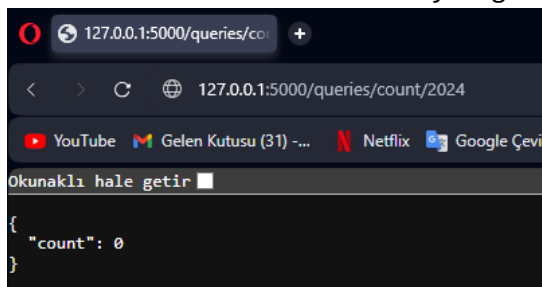
### 2. File Parsing with startswith:

This would ensure that the code will be able to filter log entries with both full timestamps and date prefixes using the startswith method,

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Here is how the features work with example case and images:

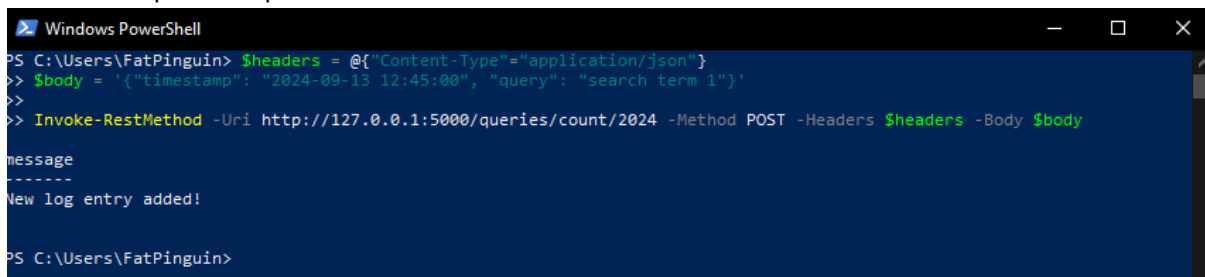
we want to search for the log "2024-09-13 12:45:00 search term 1". First thing we do is to create a get request after starting the flask server. I used <http://127.0.0.1:5000/queries/count/2024> it is a get request i don't have to use curl on cmd. I can simply execute this on the browser. And i get count: 0 , since the .tsv file doesn't have any logs that starts with 2024.



Then i want to add a log that starts with 2024. For example one of the examples from assignment mail:

2024-09-13 12:45:00 search term 1

Then i need to use windows power shell in order to use Invoke-RestMethod to create a post request.



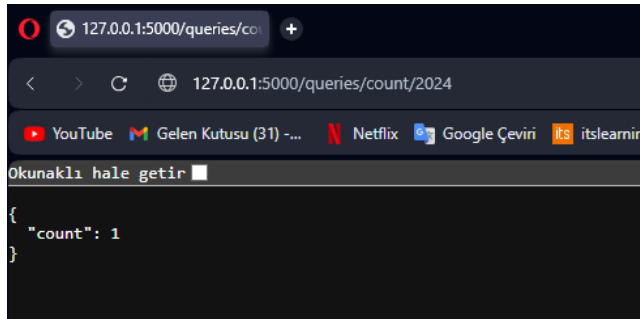
The command that i use to create post request:

```
$headers = @{"Content-Type"="application/json"}
```

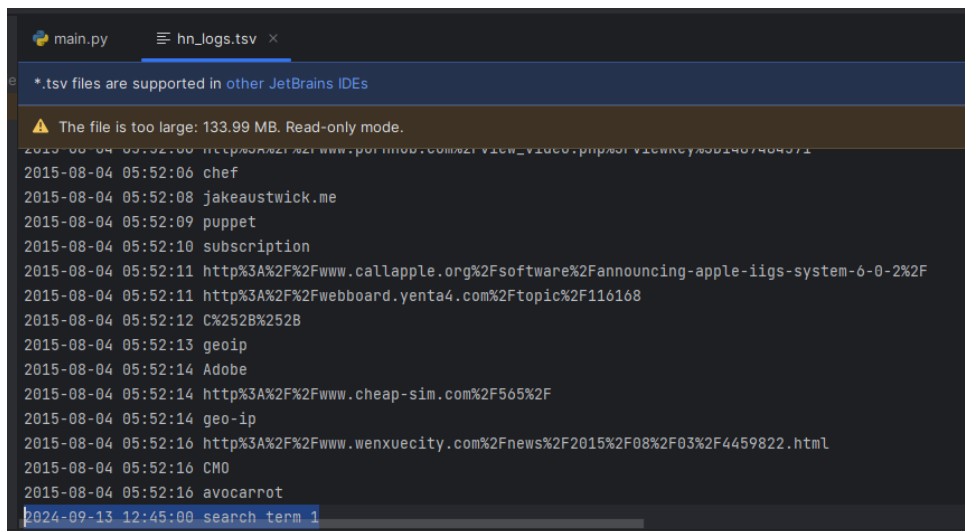
```
$body = '{"timestamp": "2024-09-13 12:45:00", "query": "search term 1"}'
```

```
Invoke-RestMethod -Uri http://127.0.0.1:5000/queries/count/2024 -Method POST -
Headers $headers -Body $body"
```

After “adding” the specific log file we create the get request again:



Now we can see the count is 1. Lets check the tsv file:



If we try to delete the specific logs that starts with a specific date or full timestamp we can use something like this:

```
curl -X DELETE http://127.0.0.1:5000/queries/count/2024-09-13
```

Or

```
curl -X DELETE http://127.0.0.1:5000/queries/count/2024-09-13%2012:45:00
```

Since there is no “ ”(space) in curl commands we identify it with “%20” in timestamps.