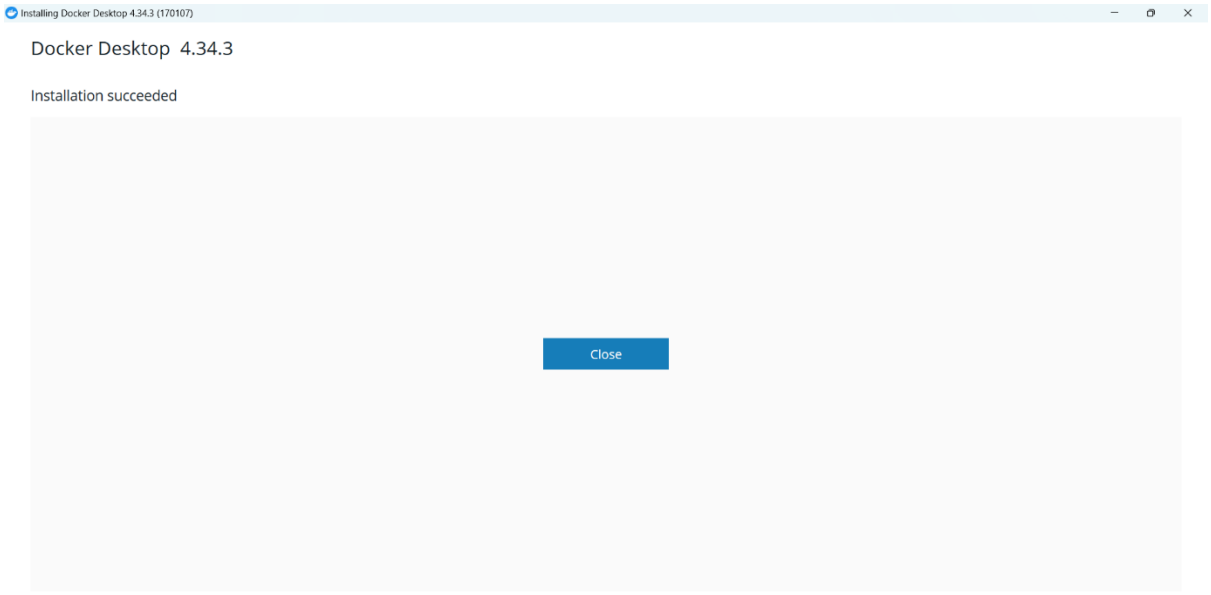
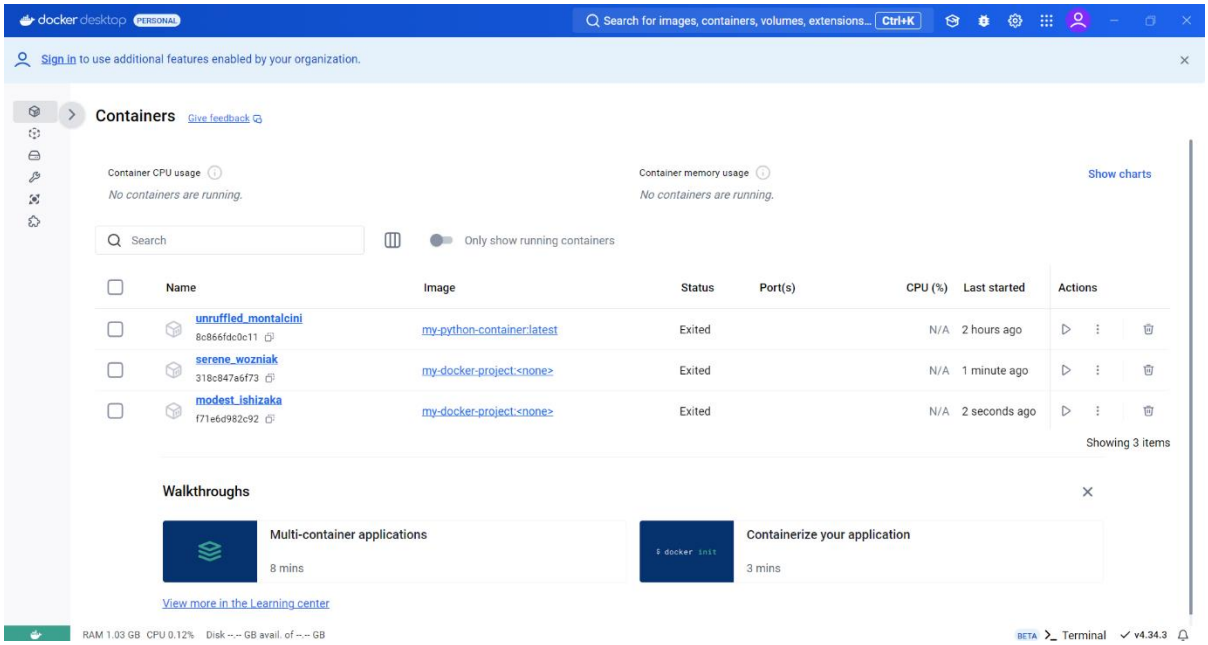
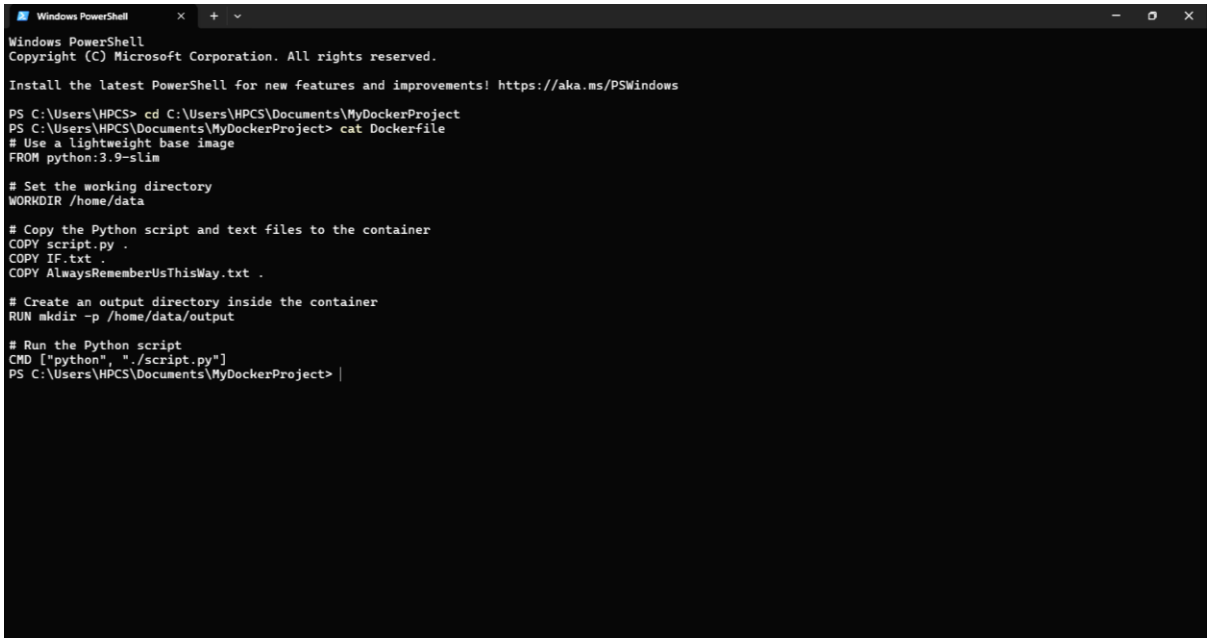
CLOUD COMPUTING ASSIGNMENT – DOCKER

1)Docker Desktop Installation

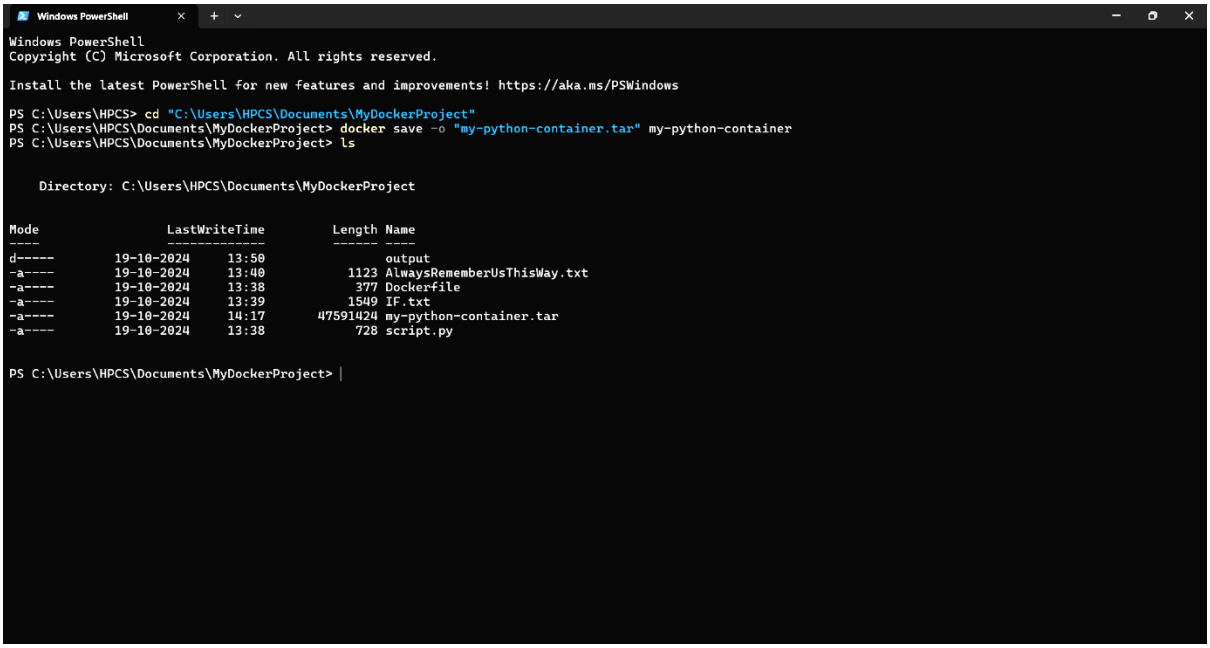




2) Dockerfile Contents Showing Lightweight Base Image (python:3.9-slim)



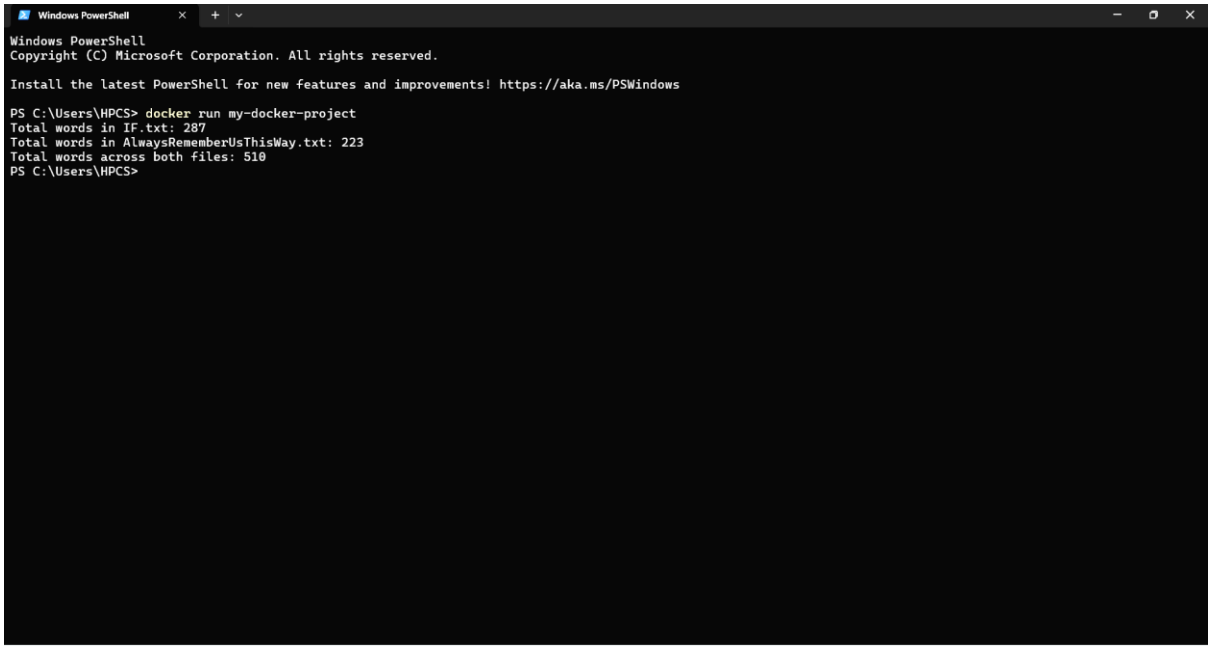
- PowerShell Output Displaying Docker Image Saved and Project Directory Structure



- Code Shared via GitHub

Git HUB link - https://github.com/niharikamg/my-docker-project/tree/master

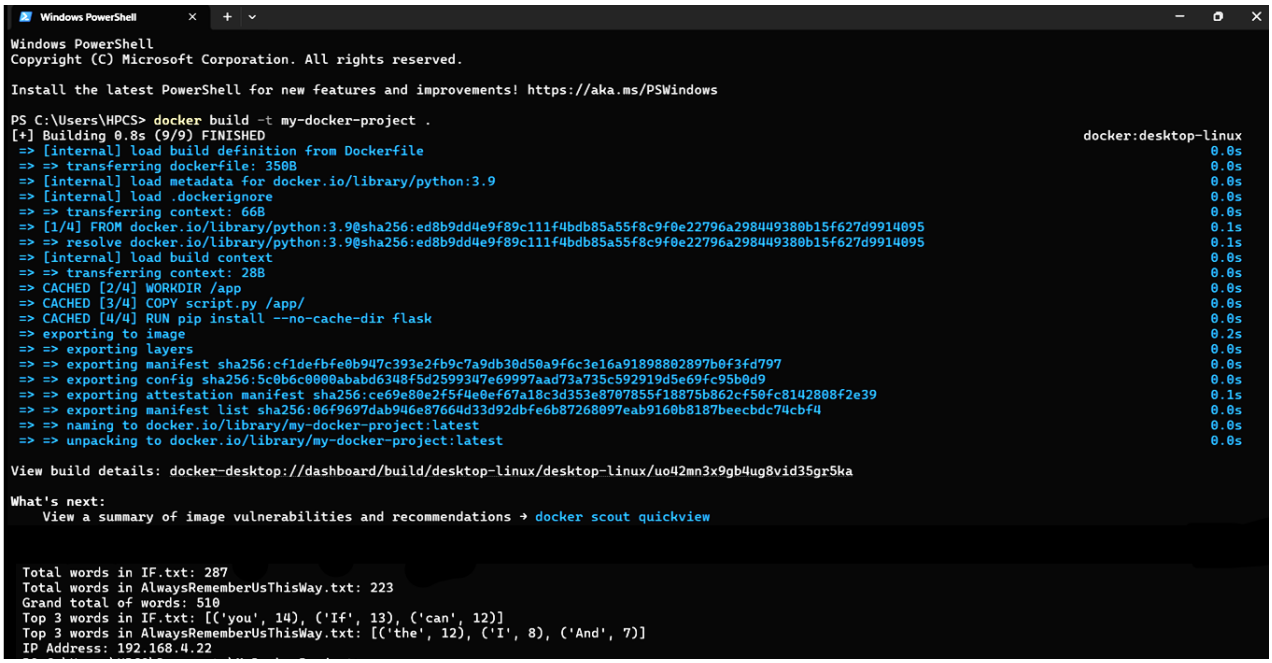
3) Docker Container Output Showing Word Counts for IF.txt and AlwaysRememberUsThisWay.txt



- The completed Python script (script.py) has been uploaded as a text file. You can also view the code in the GitHub repository at https://github.com/niharikamg/my-docker-project/tree/master

4) a. Count the total number of words in each text file located at /home/data
b. Calculate the grand total of words across both files
c. Identify the top 3 most frequent words and their respective counts in IF.txt Download IF.txt
d. Handle contractions (e.g., I'm, can't, don't) by splitting them into individual words, then find the top 3 most frequent words and their respective counts in AlwaysRememberUsThisWay.txt Download AlwaysRememberUsThisWay.txt
e. Determine the IP address of the machine running the container
f. Write the results to a text file at /home/data/output/result.txt. When the container is executed, it should print the contents of result.txt to the console before exiting

screenshot output for all the above answers :-



Commands utilized:docker build -t my-docker-project .

Word count for IF.txt: 287

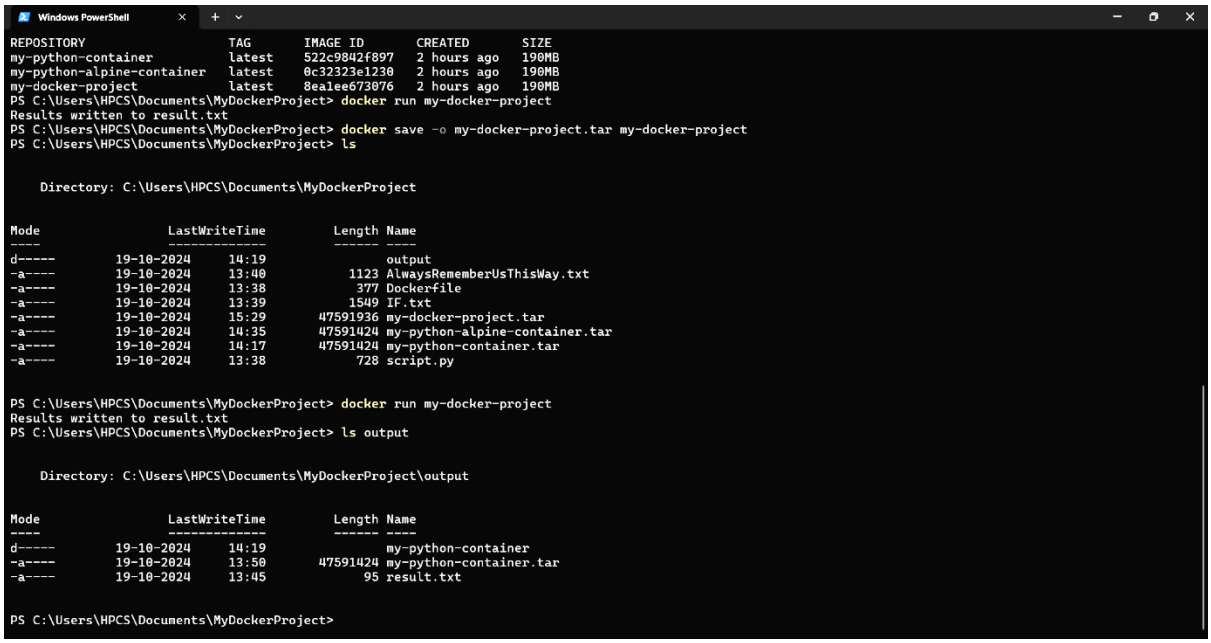
Word count for AlwaysRememberUsThisWay.txt: 223

Grand total of words: 510

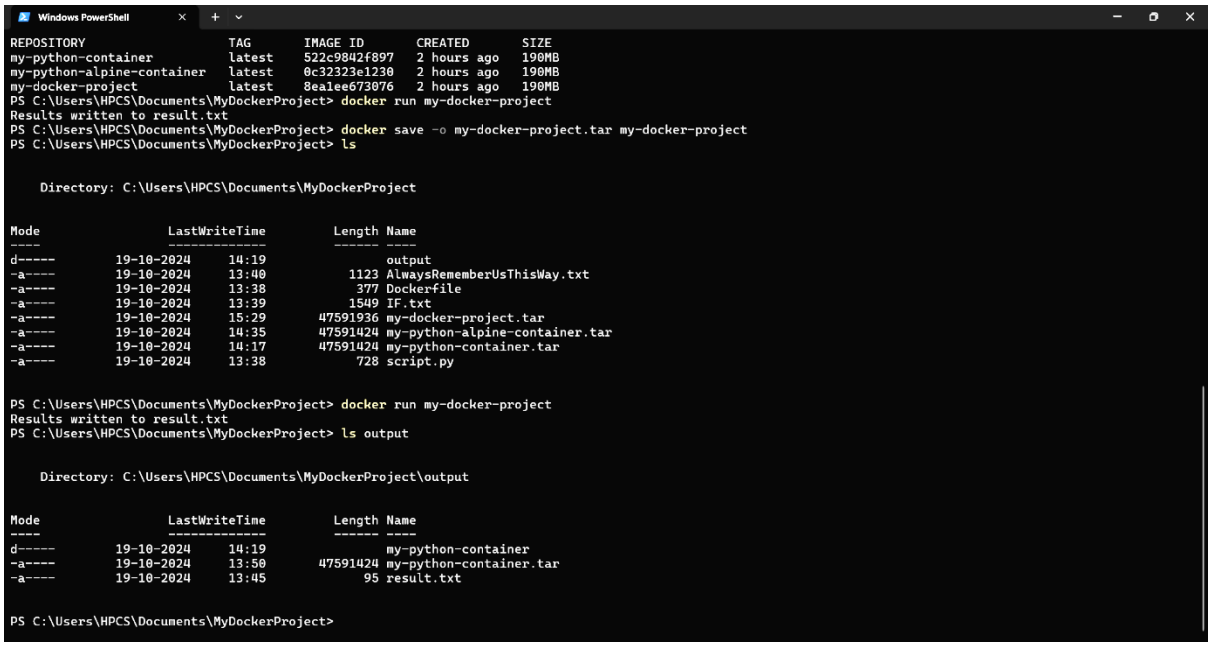
Top 3 words in IF.txt: [('you', 14), ('if', 13), ('can', 12)]

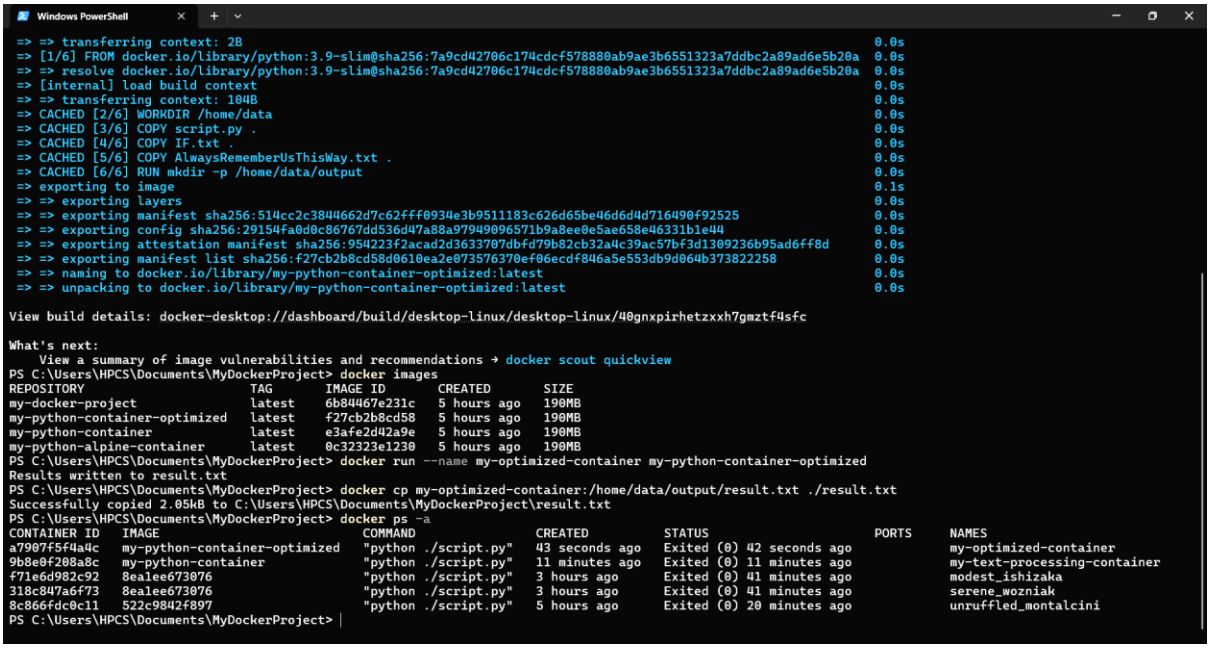
Top 3 words in AlwaysRememberUsThisWay.txt: [('the', 12), ('I', 8), ('and', 7)]

Container IP Address: 192.168.4.22

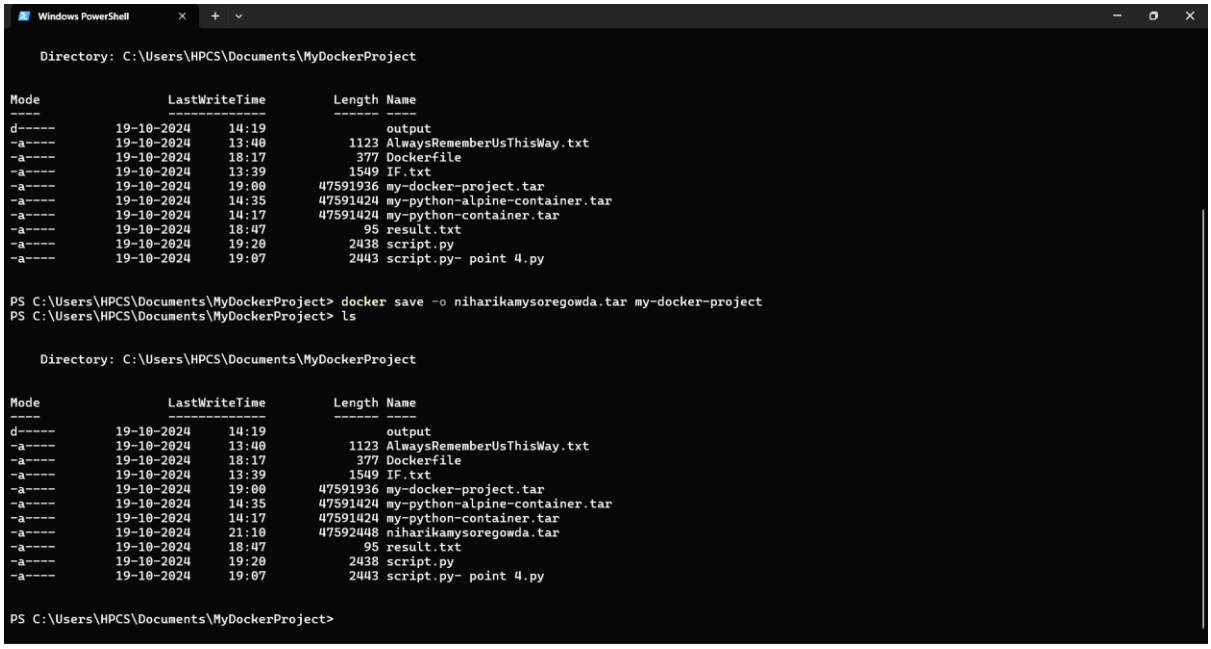


5) **Optimize your Docker image** to ensure that its size is as small as possible (target size: less than200MB).

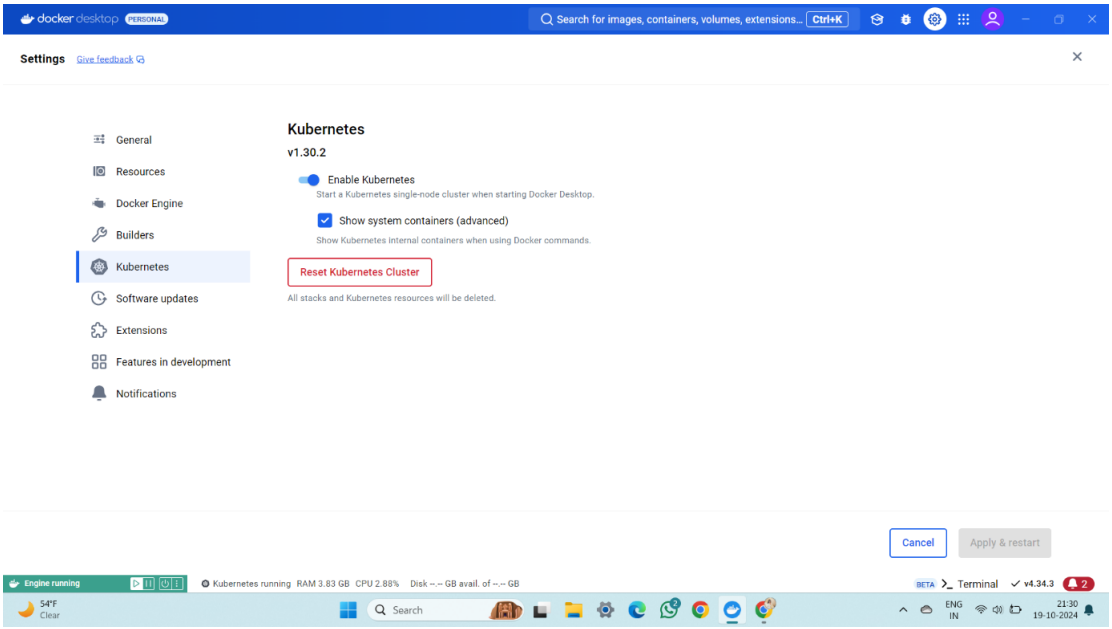




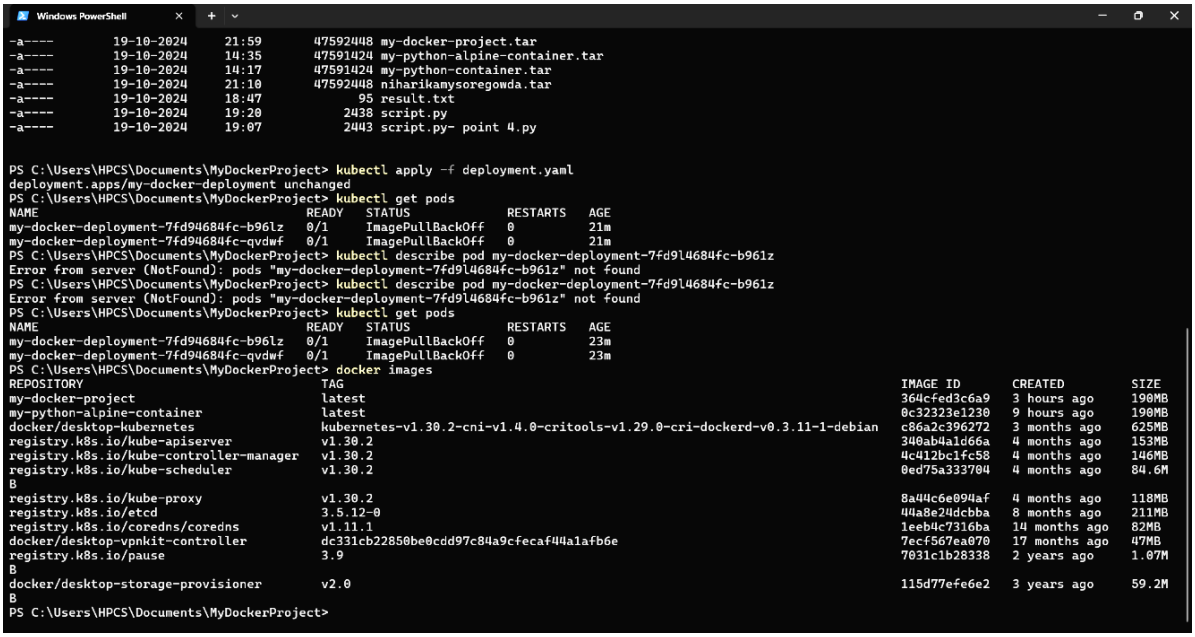
6) a) Compress the image into a tar file named with email username

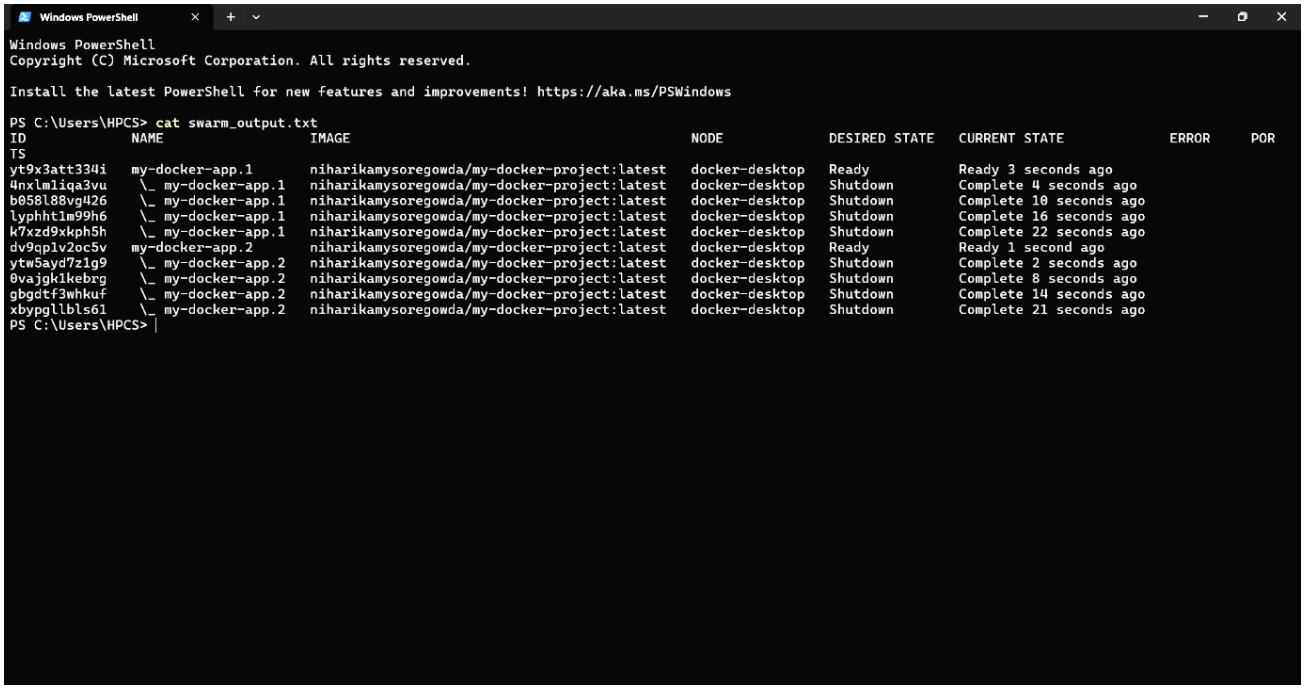


Extra Credit –



- Docker Swarm Output Showing Container States and Replica Management




Windows PowerShell
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\HPCS> cat swarm_output.txt
ID NAME IMAGE NODE DESIRED STATE CURRENT STATE ERROR POR
TS
yt9x3att334i my-docker-app.1 niharikamysoregowda/my-docker-project:latest docker-desktop Ready Ready 3 seconds ago
4nxlm1iqa3vu _ my-docker-app.1 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 4 seconds ago
b058l88vg426 _ my-docker-app.1 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 10 seconds ago
lyphht1m99h6 _ my-docker-app.1 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 16 seconds ago
k7xzd9xkph5h _ my-docker-app.1 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 22 seconds ago
dv9qp1v2oc5v my-docker-app.2 niharikamysoregowda/my-docker-project:latest docker-desktop Ready Ready 1 second ago
ytw5ayd7z1g9 _ my-docker-app.2 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 2 seconds ago
0vajgk1kebrg _ my-docker-app.2 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 8 seconds ago
gbgdtf3whkuf _ my-docker-app.2 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 14 seconds ago
xbypgllbls61 _ my-docker-app.2 niharikamysoregowda/my-docker-project:latest docker-desktop Shutdown Complete 21 seconds ago
PS C:\Users\HPCS>

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