After installing Docker Desktop, I downloaded an Ubuntu image and verified its presence using the given command. Afterward, I created a new user named 'john', copied the requested file into the Linux container, and executed the script. Below are the commands used.

A screenshot of a computer screen

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I created a file named 'passwd\_operations.sh' to implement the script. At the outset, I included a check to ensure that the file name is "passwd". If it's not, the script prints an error message and exits with a status of 1.

For the first task, I used echo $HOME to display the home directory. To print the list of all usernames from the passwd file, I employed the cut command to extract the first field, which corresponds to the username, from each line of the passwd file.

To determine the number of users, I utilized cat to read the passwd file and wc -l to count the number of lines, which represents the total number of users.

For finding the home directory of a specific user, I prompted the user to enter a username. Subsequently, I used grep to search for that username in the passwd file and then employed cut to extract the 6th field, which contains the home directory, from the matching line.

To list users with a specific UID range, I utilized awk to filter users with UIDs between 1000 and 1010 and printed their usernames.

For identifying users with standard shells, I employed grep with a regular expression to search for lines containing "/bin/bash" or "/bin/sh". I then used cut to extract the username field.

To replace characters in the passwd file, I used sed to replace all occurrences of "/" with "" and saved the modified text to a new file.

To obtain the private IP, I used hostname -I to retrieve a list of private IP addresses and awk to extract the first one. Conversely, for the public IP, I utilized curl to fetch it from ifconfig.me.

For switching to the 'john' user, I used su and printed a message to indicate the current user.

Finally, to print the home directory of the 'john' user, I searched for the corresponding line in the passwd file and extracted the home directory field.

Upon completing the script, I made it executable using the command 'chmod +x passwd\_operations.sh'. Subsequently, I executed the script with the command './passwd\_operations.sh /etc/passwd'.