Docker CLI commands

```
C:\Users\narra>docker --version
Docker version 25.0.3, build 4debf41

C:\Users\narra>docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
c1ec31eb5944: Pull complete
Digest: sha256:305243c734571da2d100c8c8b3c3167a098cab6049c9a5b066b6021a60fcb966
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview hello-world

C:\Users\narra>docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/
```

```
C:\Users\narra>docker ps -a
CONTAINER ID   IMAGE                          COMMAND                  CREATED          STATUS                     PORTS
       NAMES
98743cd3a8a5   hello-world                    "/hello"                 37 seconds ago   Exited (0) 37 seconds ago
       quizzical_swartz
f5133bdc85fe   puneeth5354/simple-calculator  "docker-entrypoint.s…"   20 minutes ago   Exited (0) 19 minutes ago
       eloquent_ritchie
5ccd98cda74f   jupyter-sandbox                "tini -g -- start-no…"   8 months ago     Exited (255) 6 months ago  0.0.0.0:8888->888
8/tcp   quizzical_borg

C:\Users\narra>docker rm f5133bdc85fe
f5133bdc85fe
```

```
C:\Users\narra>docker rmi -f hello-world
Untagged: hello-world:latest
Untagged: hello-world@sha256:305243c734571da2d100c8c8b3c3167a098cab6049c9a5b066b6021a60fcb966
Deleted: sha256:d2c94e258dcb3c5ac2798d32e1249e42ef01cba4841c2234249495f87264ac5a
```

Docker CLI Commands with redis

```
C:\Users\narra>docker pull redis
Using default tag: latest
latest: Pulling from library/redis
bc0965b23a04: Pull complete
9501a6ec095f: Pull complete
98e7597530ef: Pull complete
75dffa679c9b: Pull complete
8912a88e73c8: Pull complete
141f00d6fee8: Pull complete
4f4fb700ef54: Pull complete
8242f9d5b464: Pull complete
Digest: sha256:ea96c435dc17b011f54c6a883c3c45e7726242b075de61c6fe40a10ae6ae0f83
Status: Downloaded newer image for redis:latest
docker.io/library/redis:latest

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview redis

C:\Users\narra>docker run --name my-redis -d redis
866c61bb491e49d8e8ae435e8a4586df529fb9d014d43ae437cd1463bc023b4e

C:\Users\narra>docker ps
CONTAINER ID   IMAGE      COMMAND             CREATED         STATUS          PORTS        NAMES
866c61bb491e   redis      "docker-entrypoint.s…"   7 seconds ago   Up 6 seconds   6379/tcp   my-redis

C:\Users\narra>docker exec -it my-redis redis-cli
127.0.0.1:6379> SET name "Alice"
OK
127.0.0.1:6379>  GET name
"Alice"
127.0.0.1:6379>

C:\Users\narra>docker stop my-redis
my-redis
```

DOCKER CLI COMMANDS-PART-2 :

Create docker file

```
PS C:\Users\narra\Downloads\DOCKER_7> docker build -t redisnew .
[+] Building 18.6s (5/5) FINISHED                                                                docker:default
 => [internal] load build definition from Dockerfile                                                      0.0s
 => => transferring dockerfile: 77B                                                                       0.0s
 => [internal] load metadata for docker.io/library/redis:latest                                          1.7s
 => [internal] load .dockerignore                                                                         0.0s
 => => transferring context: 2B                                                                           0.0s
 => [1/1] FROM docker.io/library/redis:latest@sha256:ea96c435dc17b011f54c6a883c3c45e7726242b075de61c6fe40a10ae6ae0f83  16.8s
 => => resolve docker.io/library/redis:latest@sha256:ea96c435dc17b011f54c6a883c3c45e7726242b075de61c6fe40a10ae6ae0f83   0.8s
 => => sha256:ea96c0f83 10.26kB / 10.26kB                                                                 0.0s
 => => sha256:bc0965b23a04fe7f2d9fb20f597008fcf89891de1c705ffc1c80483a1f098e4f 28.23MB / 28.23MB        15.4s
 => => sha256:9501a6ec095f4bd5242b8ceedf1119d098b45c6e9237c53cedb022a20ce9c1fa 1.10kB / 1.10kB           1.1s
 => => sha256:98e7597530ef912e6a2cce5e6e0cd3f155b611a5d6b6ea7823640b6c4f2c4a30 874B / 874B               1.2s
 => => sha256:fa84a527b1808ee5ad2778e5d89aae791e7040b5c303f1d45569a9ca8d5b61ee 2.48kB / 2.48kB           0.0s
 => => sha256:b5e874b32a794f96b6119e5478f93165d4110cdd8c056d470b3d48b27114f716 8.59kB / 8.59kB           0.0s
 => => sha256:75dffa679c9bb360fd358682b0842b9f32a732e6f80d47e8a7f3efde5f05dc07 1.44MB / 1.44MB           2.6s
 => => sha256:8912a88e73c83f622d19fd2dac8a055ca96342628d29d56b81fde09475ef7007 15.33MB / 15.33MB         7.2s
 => => sha256:141f00d6fee86bf601ac2eca3db312a24d3e4147bc166bbecb09428be54794b5 97B / 97B                 3.4s
 => => sha256:4f4fb700ef54461cfa02571ae0db9a0dc1e0cdb5577484a6d75e68dc38e8acc1 32B / 32B                 3.8s
 => => sha256:8242f9d5b464f375c010545626f3107bcfe0f68e7a2a78e95c8d397427a12c0e 572B / 572B               4.7s
 => => extracting sha256:bc0965b23a04fe7f2d9fb20f597008fcf89891de1c705ffc1c80483a1f098e4f                 0.9s
 => => extracting sha256:9501a6ec095f4bd5242b8ceedf1119d098b45c6e9237c53cedb022a20ce9c1fa                 0.0s
 => => extracting sha256:98e7597530ef912e6a2cce5e6e0cd3f155b611a5d6b6ea7823640b6c4f2c4a30                 0.0s
 => => extracting sha256:75dffa679c9bb360fd358682b0842b9f32a732e6f80d47e8a7f3efde5f05dc07                 0.0s
 => => extracting sha256:8912a88e73c83f622d19fd2dac8a055ca96342628d29d56b81fde09475ef7007                 0.2s
 => => extracting sha256:141f00d6fee86bf601ac2eca3db312a24d3e4147bc166bbecb09428be54794b5                 0.0s
 => => extracting sha256:4f4fb700ef54461cfa02571ae0db9a0dc1e0cdb5577484a6d75e68dc38e8acc1                 0.0s
 => => extracting sha256:8242f9d5b464f375c010545626f3107bcfe0f68e7a2a78e95c8d397427a12c0e                 0.0s
 => exporting to image                                                                                   0.0s
 => => exporting layers                                                                                   0.0s
 => => writing image sha256:16fcce8dd9b7591b9a2bdcdb0b9b4f37f7a5c6e0b938a9ea1553b4509fe74227              0.0s
 => => naming to docker.io/library/redisnew                                                               0.0s

View build details: docker-desktop://dashboard/build/default/default/jqdzffe6ep5e0ntdf63zaiegf

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview
PS C:\Users\narra\Downloads\DOCKER_7> docker run --name myredisnew -d redisnew
4c5c76905bf571ee474888f9678e19692fcf5919e7b8f72ce174047be69662d0
PS C:\Users\narra\Downloads\DOCKER_7> docker ps
CONTAINER ID   IMAGE      COMMAND              CREATED                 STATUS                  PORTS       NAMES
4c5c76905bf5   redisnew   "docker-entrypoint.s…"  Less than a second ago  Up Less than a second   6379/tcp    myredisnew
PS C:\Users\narra\Downloads\DOCKER_7> docker stop myredisnew
myredisnew
```

```
PS C:\Users\narra\Downloads\DOCKER_7> docker ps -a
CONTAINER ID   IMAGE             COMMAND                 CREATED         STATUS                      PORTS                     NAMES
4c5c76905bf5   redisnew          "docker-entrypoint.s…"  About a minute ago  Exited (0) About a minute ago                        myredisnew
98743cd3a8a5   d2c94e258dcb      "/hello"                17 minutes ago  Exited (0) 17 minutes ago                            quizzical_swartz
5ccd98cda74f   jupyter-sandbox   "tini -g -- start-no…"  8 months ago    Exited (255) 6 months ago   0.0.0.0:8888->8888/tcp    quizzical_borg
PS C:\Users\narra\Downloads\DOCKER_7> docker commit 4c5c76905bf5 puneeth5354/redis1
sha256:5233c028e486f82757f173547e7ef97bd6b9261ee8aa9b4414338a84c2dfbf86
PS C:\Users\narra\Downloads\DOCKER_7> docker images
REPOSITORY                                        TAG          IMAGE ID       CREATED                 SIZE
puneeth5354/redis1                                latest       5233c028e486   Less than a second ago  117MB
puneeth5354/simple-calculator                     latest       67cbed8e42ff   44 minutes ago          118MB
simple-calculator                                 latest       67cbed8e42ff   44 minutes ago          118MB
redisnew                                          latest       16fcce8dd9b7   2 months ago            117MB
mcr.microsoft.com/devcontainers/typescript-node   20-bookworm  180a87146b5c   2 months ago            1.72GB
jupyter-sandbox                                   latest       7c4f2709f56e   8 months ago            1.44GB
PS C:\Users\narra\Downloads\DOCKER_7> docker push puneeth5354/redis1
Using default tag: latest
The push refers to repository [docker.io/puneeth5354/redis1]
4c3a66986d54: Mounted from library/redis
5f70bf18a086: Mounted from library/redis
59858d305cb4: Mounted from library/redis
3c008636f68d: Mounted from library/redis
d3ce9d926f3b: Mounted from library/redis
d575106a8e12: Mounted from library/redis
74264edca52d: Mounted from library/redis
c0f1022b22a9: Mounted from library/redis
latest: digest: sha256:86cf8332ff2c5638179e278dbbf7f6e1cd18aafa3ac3452316bd888f14be7041 size: 1986
PS C:\Users\narra\Downloads\DOCKER_7> docker rm 4c5c76905bf5
4c5c76905bf5
PS C:\Users\narra\Downloads\DOCKER_7> docker rmi puneeth5354/redis1
Untagged: puneeth5354/redis1:latest
Untagged: puneeth5354/redis1@sha256:86cf8332ff2c5638179e278dbbf7f6e1cd18aafa3ac3452316bd888f14be7041
Deleted: sha256:5233c028e486f82757f173547e7ef97bd6b9261ee8aa9b4414338a84c2dfbf86
PS C:\Users\narra\Downloads\DOCKER_7> docker ps -a
CONTAINER ID   IMAGE             COMMAND                 CREATED         STATUS                      PORTS                     NAMES
98743cd3a8a5   d2c94e258dcb      "/hello"                18 minutes ago  Exited (0) 18 minutes ago                            quizzical_swartz
5ccd98cda74f   jupyter-sandbox   "tini -g -- start-no…"  8 months ago    Exited (255) 6 months ago   0.0.0.0:8888->8888/tcp    quizzical_borg
PS C:\Users\narra\Downloads\DOCKER_7> docker logout
Removing login credentials for https://index.docker.io/v1/
```

```
C:\Users\narra>docker exec -it myredis redis-cli
127.0.0.1:6379> SET name "Abcdef"
OK
127.0.0.1:6379> GET name
"Abcdef"
127.0.0.1:6379> exit
```

```
C:\Users\narra>docker ps -a
CONTAINER ID    IMAGE              COMMAND                 CREATED         STATUS                      PORTS
            NAMES
954c66443310    puneeth5354/redis1 "docker-entrypoint.s…"  2 minutes ago   Up 2 minutes                6379/tcp
            myredis
98743cd3a8a5    d2c94e258dcb       "/hello"                21 minutes ago  Exited (0) 21 minutes ago
            quizzical_swartz
5ccd98cda74f    jupyter-sandbox    "tini -g -- start-no…"  8 months ago    Exited (255) 6 months ago   0.0.0.0:8888->
8888/tcp    quizzical_borg

C:\Users\narra>docker stop myredis
myredis
```
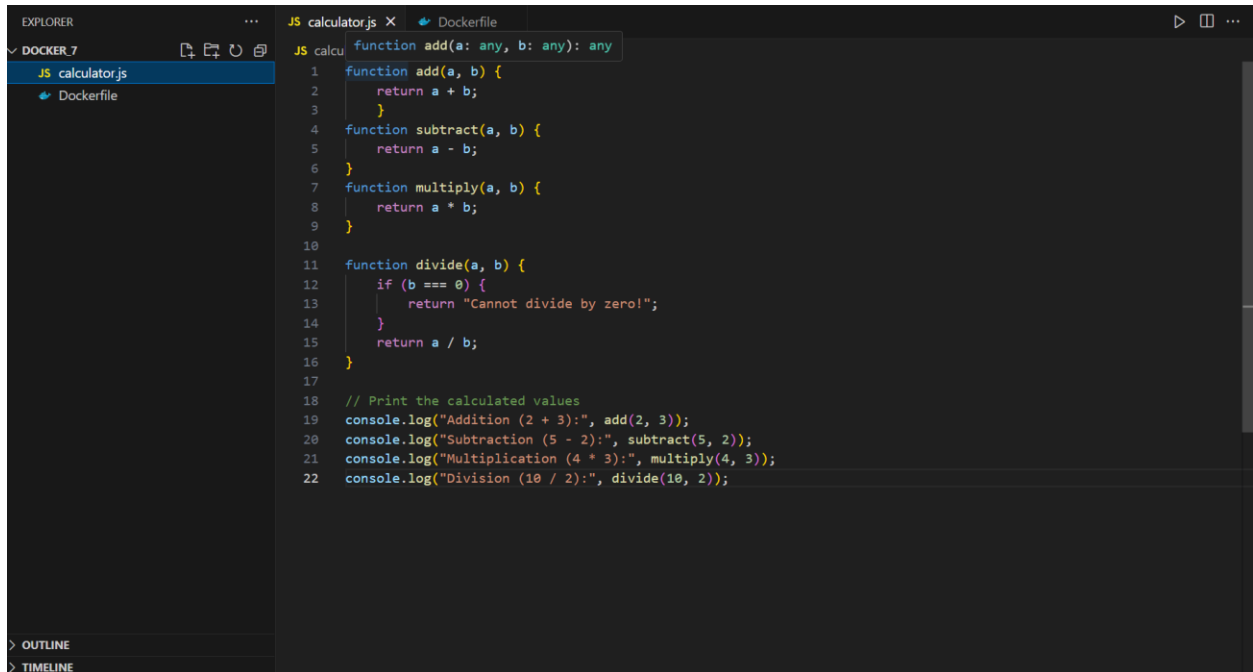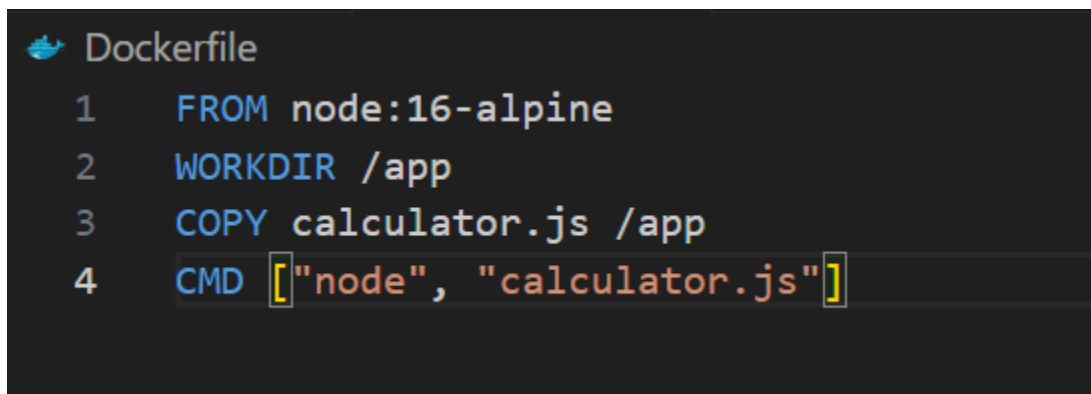
```
C:\Users\narra>docker rm 954c66443310
954c66443310

C:\Users\narra>docker images
REPOSITORY                                          TAG          IMAGE ID       CREATED         SIZE
puneeth5354/redis1                                  latest       5233c028e486   4 minutes ago   117MB
simple-calculator                                   latest       67cbed8e42ff   48 minutes ago  118MB
puneeth5354/simple-calculator                       latest       67cbed8e42ff   48 minutes ago  118MB
redisnew                                            latest       16fcce8dd9b7   2 months ago    117MB
mcr.microsoft.com/devcontainers/typescript-node     20-bookworm  180a87146b5c   2 months ago    1.72GB
jupyter-sandbox                                     latest       7c4f2709f56e   8 months ago    1.44GB

C:\Users\narra>docker rmi puneeth5354/redis1
Untagged: puneeth5354/redis1:latest
Untagged: puneeth5354/redis1@sha256:86cf8332ff2c5638179e278dbbf7f6e1cd18aafa3ac3452316bd888f14be7041
Deleted: sha256:5233c028e486f82757f173547e7ef97bd6b9261ee8aa9b4414338a84c2dfbf86
```

Single containerization using Docker

Step 1: Create the JavaScript File

Step 2: Create a Dockerfile


```dockerfile
FROM node:16-alpine
WORKDIR /app
COPY calculator.js /app
CMD ["node", "calculator.js"]
```

Step 3: Build the Docker Image

```
PS C:\Users\narra\Downloads\DOCKER_7> docker build -t simple-calculator .
[+] Building 16.2s (8/8) FINISHED                                                      docker:default
 => [internal] load build definition from Dockerfile                                          0.0s
 => => transferring dockerfile: 129B                                                          0.0s
 => [internal] load metadata for docker.io/library/node:16-alpine                             1.4s
 => [internal] load .dockerignore                                                             0.0s
 => => transferring context: 2B                                                               0.0s
 => [internal] load build context                                                             0.0s
 => => transferring context: 35B                                                              0.0s
 => [1/3] FROM docker.io/library/node:16-alpine@sha256:a1f9d027912b58a7c75be7716c97cfbc6d3099f3a97ed84aa490be9de   14.6s
 => => resolve docker.io/library/node:16-alpine@sha256:a1f9d027912b58a7c75be7716c97cfbc6d3099f3a97ed84aa490be9dee   0.0s
 => => sha256:a1f9d027912b58a7c75be7716c97cfbc6d3099f3a97ed84aa490be9dee20e787 1.43kB / 1.43kB   0.0s
 => => sha256:72e89a86be58c922ed7b1475e5e6f151537676470695dd106521738b060e139d 1.16kB / 1.16kB   0.0s
 => => sha256:2573171e0124bb95d14d128728a52a97bb917ef45d7c4fa8cfe76bc44aa78b73 6.73kB / 6.73kB   0.0s
 => => sha256:7264a8db6415046d36d16ba98b79778e18accee6ffa71850405994cffa9be7de 3.40MB / 3.40MB   3.6s
 => => sha256:eee371b9ce3ffdbb8aa703b9a14d318801ddc3468f096bb6cfeabbeb715147f9 36.63MB / 36.63MB  13.4s
 => => sha256:93b3025fe10392717d06ec0d012a9ffa2039d766a322aac899c6831dd93382c2 2.34MB / 2.34MB   1.6s
 => => sha256:d9059661ce70092af66d2773666584fc8addcb78a2be63f720022f4875577ea9 452B / 452B       2.7s
 => => extracting sha256:7264a8db6415046d36d16ba98b79778e18accee6ffa71850405994cffa9be7de        0.1s
 => => extracting sha256:eee371b9ce3ffdbb8aa703b9a14d318801ddc3468f096bb6cfeabbeb715147f9        1.0s
 => => extracting sha256:93b3025fe10392717d06ec0d012a9ffa2039d766a322aac899c6831dd93382c2        0.0s
 => => extracting sha256:d9059661ce70092af66d2773666584fc8addcb78a2be63f720022f4875577ea9        0.0s
 => [2/3] WORKDIR /app                                                                         0.1s
 => [3/3] COPY calculator.js /app                                                             0.0s
 => exporting to image                                                                        0.0s
 => => exporting layers                                                                       0.0s
 => => writing image sha256:67cbed8e42ff82ae4dc948524e0a004c9eaef173ac5da2ca6318c9983283a6f8   0.0s
 => => naming to docker.io/library/simple-calculator                                          0.0s

View build details: docker-desktop://dashboard/build/default/default/l5tluo2dcx9ovatmxxl514ay4

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview
PS C:\Users\narra\Downloads\DOCKER_7> |
```

Step 4: Run the Docker Container

```
PS C:\Users\narra\Downloads\DOCKER_7> docker run simple-calculator
Addition (2 + 3): 5
Subtraction (5 - 2): 3
Multiplication (4 * 3): 12
Division (10 / 2): 5
PS C:\Users\narra\Downloads\DOCKER_7>
```

Step 6: Push the Image to Docker Hub

Docker login :

```
Division (10 / 2): 5
PS C:\Users\narra\Downloads\DOCKER_7> docker login
Authenticating with existing credentials...
Login Succeeded
```

Tag the Image for Docker Hub:

Push the Image to Docker Hub:

```
PS C:\Users\narra\Downloads\DOCKER_7> docker tag simple-calculator puneeth5354/simple-calculator
PS C:\Users\narra\Downloads\DOCKER_7> docker push puneeth5354/simple-calculator
Using default tag: latest
The push refers to repository [docker.io/puneeth5354/simple-calculator]
fb9802e01875: Pushed
63c7c7189269: Pushed
365ccd918307: Mounted from library/node
1bba629c69e9: Mounted from library/node
139c1270acf1: Mounted from library/node
4693057ce236: Mounted from library/node
latest: digest: sha256:0aac43344cc65500032488e5780f5864ecc0a91033aaba0d7207413444bab820 size: 1571
PS C:\Users\narra\Downloads\DOCKER_7>
```

remove the existing image and container:

```
PS C:\Users\narra\Downloads\DOCKER_7> docker ps -a
CONTAINER ID   IMAGE              COMMAND                CREATED        STATUS                     PORTS                    NAMES
43d7a4e1db1a   simple-calculator  "docker-entrypoint.s…" 3 minutes ago  Exited (0) 3 minutes ago                            hungry_sutherland
5ccd98cda74f   jupyter-sandbox    "tini -g -- start-no…" 8 months ago   Exited (255) 6 months ago  0.0.0.0:8888->8888/tcp   quizzical_borg
PS C:\Users\narra\Downloads\DOCKER_7> docker rm 43d7a4e1db1a
43d7a4e1db1a
PS C:\Users\narra\Downloads\DOCKER_7> docker rmi puneeth5354/simple-calculator
Untagged: puneeth5354/simple-calculator:latest
Untagged: puneeth5354/simple-calculator@sha256:0aac43344cc65500032488e5780f5864ecc0a91033aaba0d7207413444bab820
PS C:\Users\narra\Downloads\DOCKER_7>
```

Step 8: Run the Pulled Image

pull the image from Docker Hub:

Run the container from the pulled image:

```
PS C:\Users\narra\Downloads\DOCKER_7> docker pull puneeth5354/simple-calculator
Using default tag: latest
latest: Pulling from puneeth5354/simple-calculator
Digest: sha256:0aac43344cc65500032488e5780f5864ecc0a91033aaba0d7207413444bab820
Status: Downloaded newer image for puneeth5354/simple-calculator:latest
docker.io/puneeth5354/simple-calculator:latest

What's Next?
  View a summary of image vulnerabilities and recommendations → docker scout quickview puneeth5354/simple-calculator
PS C:\Users\narra\Downloads\DOCKER_7> docker run puneeth5354/simple-calculator
Addition (2 + 3): 5
Subtraction (5 - 2): 3
Multiplication (4 * 3): 12
Division (10 / 2): 5
PS C:\Users\narra\Downloads\DOCKER_7>
```