GITHUB LINK: https://github.com/RickSlick3/CS5165-LearningDocker

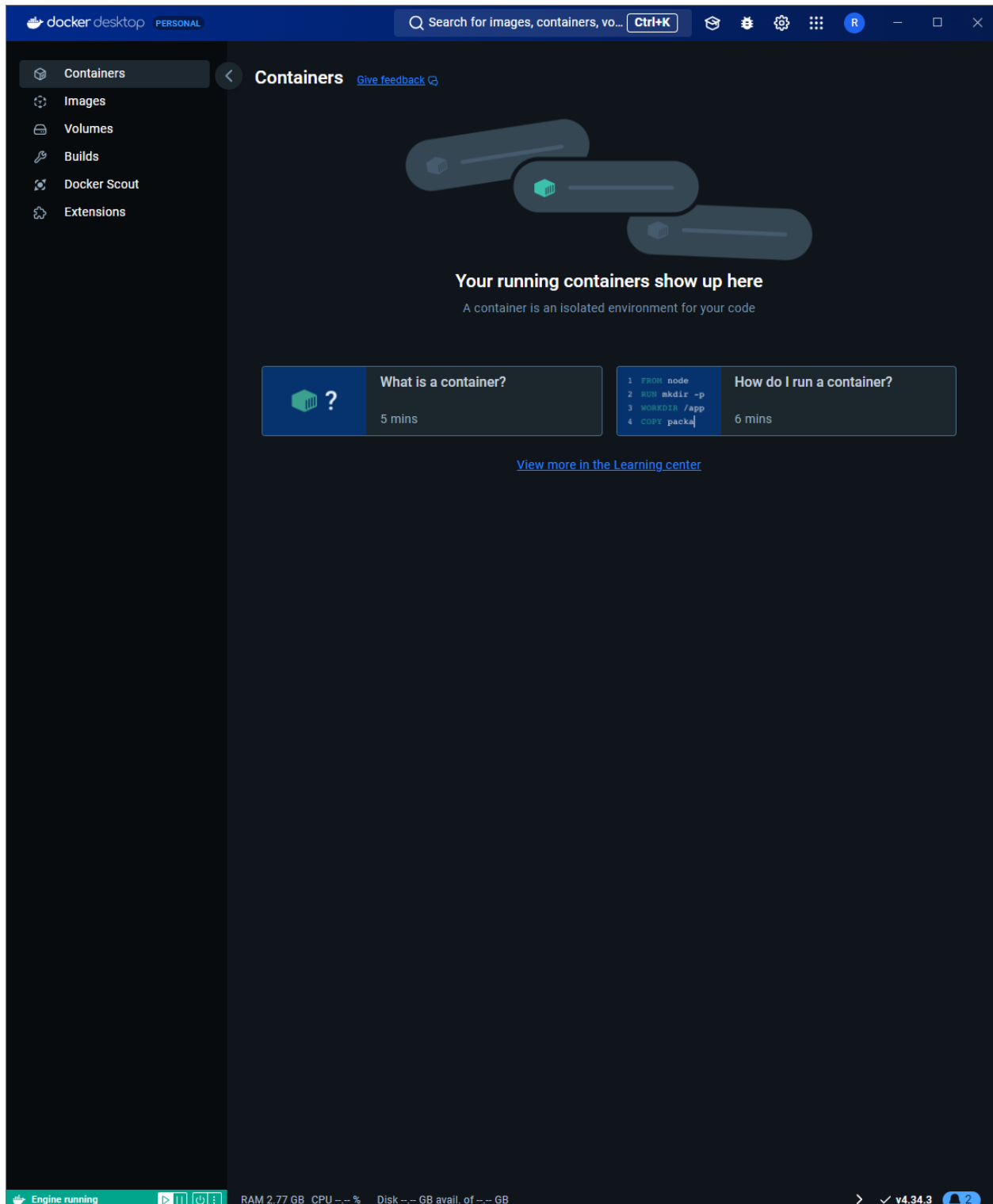**Install Docker Desktop** on your personal computer. **(1 Point)**

```
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker buildx b -t my-python-container .
[+] Building 0.7s (14/14) FINISHED                                                    docker:desktop-linux
 => [internal] load build definition from Dockerfile                                                0.0s
 => => transferring dockerfile: 530B                                                                0.0s
 => [internal] load metadata for docker.io/library/python:3.9-slim                                 0.5s
 => [auth] library/python:pull token for registry-1.docker.io                                      0.0s
 => [internal] load .dockerignore                                                                  0.0s
 => => transferring context: 2B                                                                     0.0s
 => [1/8] FROM docker.io/library/python:3.9-slim@sha256:68a2336b5d5e94d1f2d411f914ab80be75c54147c547cab31222df2bd  0.0s
 => [internal] load build context                                                                  0.0s
 => => transferring context: 104B                                                                  0.0s
 => CACHED [2/8] RUN apt-get update && apt-get install -y python3                                   0.0s
 => CACHED [3/8] WORKDIR /home/data                                                                0.0s
 => CACHED [4/8] COPY script.py .                                                                   0.0s
 => CACHED [5/8] COPY IF.txt .                                                                      0.0s
 => CACHED [6/8] COPY AlwaysRememberUsThisWay.txt .                                                 0.0s
 => CACHED [7/8] RUN mkdir -p /home/data/output                                                     0.0s
 => CACHED [8/8] RUN python3 script.py                                                              0.0s
 => exporting to image                                                                             0.0s
 => => exporting layers                                                                            0.0s
 => => writing image sha256:5117b624ed0a8e7d6d0140530bc37922a85e36af54e4b9a38a4e53dfd51264af        0.0s
 => => naming to docker.io/library/my-python-container                                             0.0s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/njqt9wvyqdvycdobd6ev0ao14
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker run --rm my-python-container
There are 287 words in IF.txt
There are 223 words in IF.txt
There are 510 words in the two files combined

The top 3 most frequent words in IF.txt:
you: 18
and: 16
if: 14

The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
i: 15
the: 13
not: 9

The IP address of the machine is: 172.17.0.2
```

```
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker tag my-python-container rickslick3/my-python-container
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker save -o ROBERRF.tar my-python-container
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker load -i ROBERRF.tar
Loaded image: my-python-container:latest
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker run --rm my-python-container
There are 287 words in IF.txt
There are 223 words in IF.txt
There are 510 words in the two files combined

The top 3 most frequent words in IF.txt:
you: 18
and: 16
if: 14

The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
i: 15
the: 13
not: 9

The IP address of the machine is: 172.17.0.2

PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker run -ti my-python-container bash
root@9689fa617104:/home/data# cat output/result.txt
There are 287 words in IF.txt
There are 223 words in IF.txt
There are 510 words in the two files combined

The top 3 most frequent words in IF.txt:
you: 18
and: 16
if: 14

The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
i: 15
the: 13
not: 9

The IP address of the machine is: 127.0.0.1
root@9689fa617104:/home/data#
```

EXTRA CREDIT

- Docker Swarm wouldn't work, so I used **docker compose**
- Instructions are below, code for **docker-compose.yaml** is in the github link at the top of this document
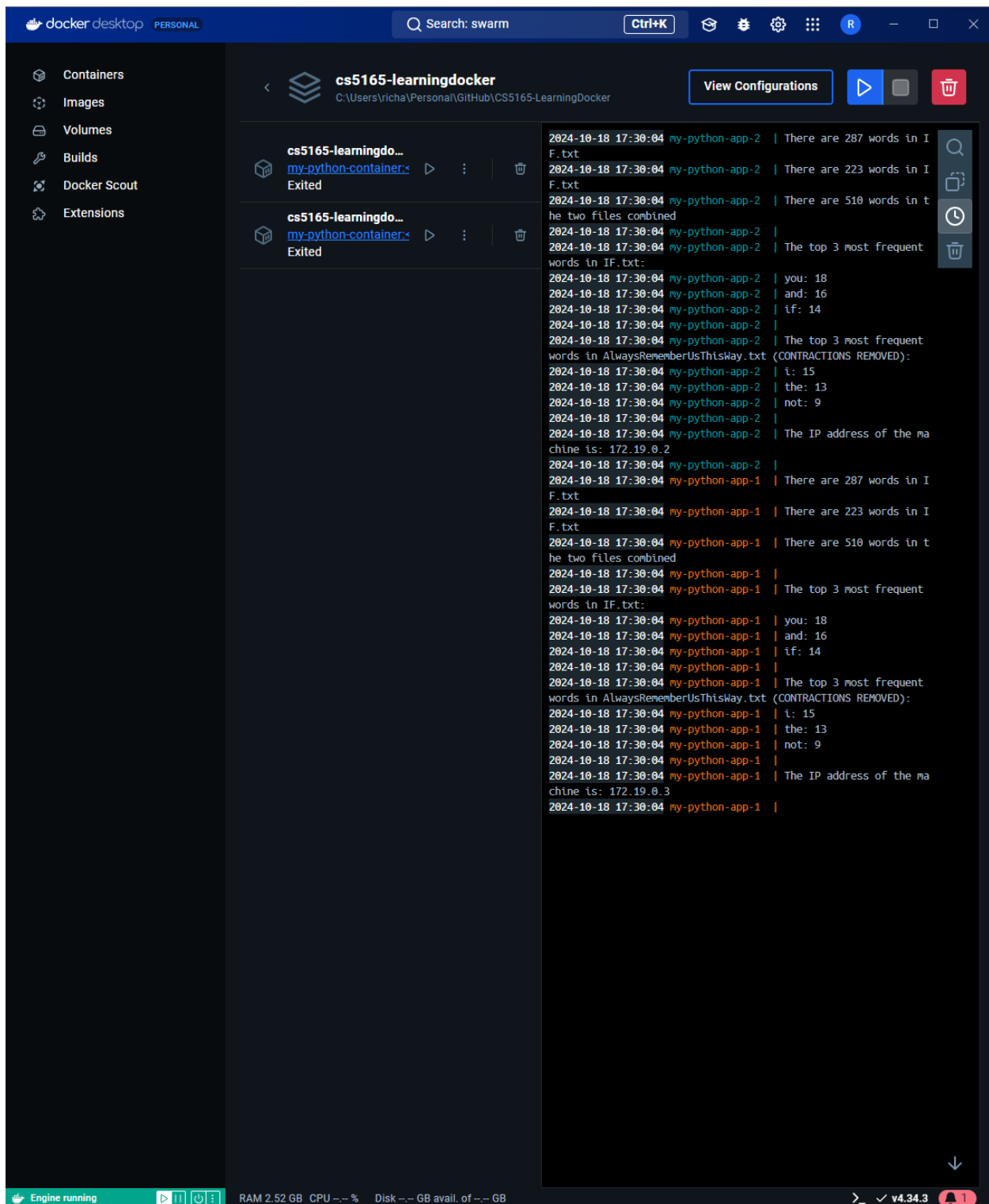- See next pages for screenshots

Docker Compose (EXTRA CREDIT):

- download/make `docker-compose.yaml` , then launch containers
  - `docker compose up`
    - command line and docker desktop should display outputs of the 2 containers
  - `docker compose ps --all` to show containers created with docker compose
  - `docker compose down` to remove containers

2 replicas

```
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker compose up
[+] Running 3/3
  ✔Network cs5165-learningdocker_default          Created                                      0.0s
  ✔Container cs5165-learningdocker-my-python-app-2  Created                                     0.1s
  ✔Container cs5165-learningdocker-my-python-app-1  Created                                     0.0s
Attaching to my-python-app-1, my-python-app-2
my-python-app-2  | There are 287 words in IF.txt
my-python-app-2  | There are 223 words in IF.txt
my-python-app-2  | There are 510 words in the two files combined
my-python-app-2  |
my-python-app-2  | The top 3 most frequent words in IF.txt:
my-python-app-2  | you: 18
my-python-app-2  | and: 16
my-python-app-2  | if: 14
my-python-app-2  |
my-python-app-2  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-2  | i: 15
my-python-app-2  | the: 13
my-python-app-2  | not: 9
my-python-app-2  |
my-python-app-2  | The IP address of the machine is: 172.19.0.2
my-python-app-2  |
my-python-app-2 exited with code 0
my-python-app-1  | There are 287 words in IF.txt
my-python-app-1  | There are 223 words in IF.txt
my-python-app-1  | There are 510 words in the two files combined
my-python-app-1  |
my-python-app-1  | The top 3 most frequent words in IF.txt:
my-python-app-1  | you: 18
my-python-app-1  | and: 16
my-python-app-1  | if: 14
my-python-app-1  |
my-python-app-1  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-1  | i: 15
my-python-app-1  | the: 13
my-python-app-1  | not: 9
my-python-app-1  |
my-python-app-1  | The IP address of the machine is: 172.19.0.3
my-python-app-1  |
my-python-app-1 exited with code 0
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker compose ps --all
NAME                               IMAGE               COMMAND            SERVICE          CREATED          STA
TUS                 PORTS
cs5165-learningdocker-my-python-app-1   my-python-container   "python3 script.py"   my-python-app   11 seconds ago   Exi
ted (0) 10 seconds ago
cs5165-learningdocker-my-python-app-2   my-python-container   "python3 script.py"   my-python-app   11 seconds ago   Exi
ted (0) 11 seconds ago
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker compose down
[+] Running 3/3
  ✔Container cs5165-learningdocker-my-python-app-1  Removed                                     0.0s
  ✔Container cs5165-learningdocker-my-python-app-2  Removed                                     0.0s
  ✔Network cs5165-learningdocker_default            Removed                                     0.3s
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> |
```

Search: swarm   Ctrl+K

Containers   Give feedback ⎋

Container CPU usage ⓘ

No containers are running.

Container memory usage ⓘ

No containers are running.

Show charts

🔍 Search   ▌▌   ⚪ Only show running containers

	Name	Image	Status	Port(s)	CPU...	La	Actions
☐ ∨ ⬚	**cs5165-learningdocker**		Exited		N/A	9	▷ ⋮ 🗑
☐ ⬚	**my-python-app-1** 6a89aa268179 ⎘	my-python-container: <none>	Exited		N/A	9	▷ ⋮ 🗑
☐ ⬚	**my-python-app-2** 3fad823defbc ⎘	my-python-container: <none>	Exited		N/A	9	▷ ⋮ 🗑

Showing 3 items

Containers

Images

Volumes

Builds

Docker Scout

Extensions

cs5165-learningdocker
C:\Users\richa\Personal\GitHub\CS5165-LearningDocker

View Configurations

cs5165-learningdo...
my-python-container:<
Exited

cs5165-learningdo...
my-python-container:<
Exited

```
2024-10-18 17:30:04 my-python-app-2 | There are 287 words in I
F.txt
2024-10-18 17:30:04 my-python-app-2 | There are 223 words in I
F.txt
2024-10-18 17:30:04 my-python-app-2 | There are 510 words in t
he two files combined
2024-10-18 17:30:04 my-python-app-2 |
2024-10-18 17:30:04 my-python-app-2 | The top 3 most frequent
words in IF.txt:
2024-10-18 17:30:04 my-python-app-2 | you: 18
2024-10-18 17:30:04 my-python-app-2 | and: 16
2024-10-18 17:30:04 my-python-app-2 | if: 14
2024-10-18 17:30:04 my-python-app-2 |
2024-10-18 17:30:04 my-python-app-2 | The top 3 most frequent
words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
2024-10-18 17:30:04 my-python-app-2 | i: 15
2024-10-18 17:30:04 my-python-app-2 | the: 13
2024-10-18 17:30:04 my-python-app-2 | not: 9
2024-10-18 17:30:04 my-python-app-2 |
2024-10-18 17:30:04 my-python-app-2 | The IP address of the ma
chine is: 172.19.0.2
2024-10-18 17:30:04 my-python-app-2 |
2024-10-18 17:30:04 my-python-app-1 | There are 287 words in I
F.txt
2024-10-18 17:30:04 my-python-app-1 | There are 223 words in I
F.txt
2024-10-18 17:30:04 my-python-app-1 | There are 510 words in t
he two files combined
2024-10-18 17:30:04 my-python-app-1 |
2024-10-18 17:30:04 my-python-app-1 | The top 3 most frequent
words in IF.txt:
2024-10-18 17:30:04 my-python-app-1 | you: 18
2024-10-18 17:30:04 my-python-app-1 | and: 16
2024-10-18 17:30:04 my-python-app-1 | if: 14
2024-10-18 17:30:04 my-python-app-1 |
2024-10-18 17:30:04 my-python-app-1 | The top 3 most frequent
words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
2024-10-18 17:30:04 my-python-app-1 | i: 15
2024-10-18 17:30:04 my-python-app-1 | the: 13
2024-10-18 17:30:04 my-python-app-1 | not: 9
2024-10-18 17:30:04 my-python-app-1 |
2024-10-18 17:30:04 my-python-app-1 | The IP address of the ma
chine is: 172.19.0.3
2024-10-18 17:30:04 my-python-app-1 |
```

5 replicas

```
Windows PowerShell                    ×    +    ∨                              —   □   ×

PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker compose up
[+] Running 6/6
 ✔Network cs5165-learningdocker_default         Created                              0.0s
 ✔Container cs5165-learningdocker-my-python-app-1  Created                           0.1s
 ✔Container cs5165-learningdocker-my-python-app-5  Created                           0.1s
 ✔Container cs5165-learningdocker-my-python-app-4  Created                           0.1s
 ✔Container cs5165-learningdocker-my-python-app-2  Created                           0.1s
 ✔Container cs5165-learningdocker-my-python-app-3  Created                           0.1s
Attaching to my-python-app-1, my-python-app-2, my-python-app-3, my-python-app-4, my-python-app-5
my-python-app-1  | There are 287 words in IF.txt
my-python-app-1  | There are 223 words in IF.txt
my-python-app-1  | There are 510 words in the two files combined
my-python-app-1  |
my-python-app-1  | The top 3 most frequent words in IF.txt:
my-python-app-1  | you: 18
my-python-app-1  | and: 16
my-python-app-1  | if: 14
my-python-app-1  |
my-python-app-1  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-1  | i: 15
my-python-app-1  | the: 13
my-python-app-1  | not: 9
my-python-app-1  |
my-python-app-1  | The IP address of the machine is: 172.19.0.2
my-python-app-1  |
my-python-app-1 exited with code 0
my-python-app-5  | There are 287 words in IF.txt
my-python-app-5  | There are 223 words in IF.txt
my-python-app-5  | There are 510 words in the two files combined
my-python-app-5  |
my-python-app-5  | The top 3 most frequent words in IF.txt:
my-python-app-5  | you: 18
my-python-app-5  | and: 16
my-python-app-5  | if: 14
my-python-app-5  |
my-python-app-5  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-5  | i: 15
my-python-app-5  | the: 13
my-python-app-5  | not: 9
my-python-app-5  |
my-python-app-5  | The IP address of the machine is: 172.19.0.3
my-python-app-5  |
my-python-app-5 exited with code 0
my-python-app-4  | There are 287 words in IF.txt
my-python-app-4  | There are 223 words in IF.txt
my-python-app-4  | There are 510 words in the two files combined
my-python-app-4  |
my-python-app-4  | The top 3 most frequent words in IF.txt:
my-python-app-4  | you: 18
my-python-app-4  | and: 16
my-python-app-4  | if: 14
my-python-app-4  |
my-python-app-4  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-4  | i: 15
my-python-app-4  | the: 13
my-python-app-4  | not: 9
my-python-app-4  |
my-python-app-4  | The IP address of the machine is: 172.19.0.2
my-python-app-4  |
my-python-app-4 exited with code 0
my-python-app-2  | There are 287 words in IF.txt
my-python-app-2  | There are 223 words in IF.txt
my-python-app-2  | There are 510 words in the two files combined
my-python-app-2  |
my-python-app-2  | The top 3 most frequent words in IF.txt:
my-python-app-2  | you: 18
my-python-app-2  | and: 16
my-python-app-2  | if: 14
my-python-app-2  |
```

```
my-python-app-2  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-2  | i: 15
my-python-app-2  | the: 13
my-python-app-2  | not: 9
my-python-app-2  |
my-python-app-2  | The IP address of the machine is: 172.19.0.3
my-python-app-2  |
my-python-app-2 exited with code 0
my-python-app-3  | There are 287 words in IF.txt
my-python-app-3  | There are 223 words in IF.txt
my-python-app-3  | There are 510 words in the two files combined
my-python-app-3  |
my-python-app-3  | The top 3 most frequent words in IF.txt:
my-python-app-3  | you: 18
my-python-app-3  | and: 16
my-python-app-3  | if: 14
my-python-app-3  |
my-python-app-3  | The top 3 most frequent words in AlwaysRememberUsThisWay.txt (CONTRACTIONS REMOVED):
my-python-app-3  | i: 15
my-python-app-3  | the: 13
my-python-app-3  | not: 9
my-python-app-3  |
my-python-app-3  | The IP address of the machine is: 172.19.0.2
my-python-app-3  |
my-python-app-3 exited with code 0
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker compose ps --all
NAME                                     IMAGE                COMMAND                SERVICE          CREATED          STA
TUS                      PORTS
cs5165-learningdocker-my-python-app-1    my-python-container  "python3 script.py"    my-python-app    36 seconds ago   Exi
ted (0) 35 seconds ago
cs5165-learningdocker-my-python-app-2    my-python-container  "python3 script.py"    my-python-app    36 seconds ago   Exi
ted (0) 33 seconds ago
cs5165-learningdocker-my-python-app-3    my-python-container  "python3 script.py"    my-python-app    36 seconds ago   Exi
ted (0) 33 seconds ago
cs5165-learningdocker-my-python-app-4    my-python-container  "python3 script.py"    my-python-app    36 seconds ago   Exi
ted (0) 34 seconds ago
cs5165-learningdocker-my-python-app-5    my-python-container  "python3 script.py"    my-python-app    36 seconds ago   Exi
ted (0) 35 seconds ago
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker> docker compose down
[+] Running 6/6
 ✔ Container cs5165-learningdocker-my-python-app-1  Removed                                                        0.0s
 ✔ Container cs5165-learningdocker-my-python-app-5  Removed                                                        0.0s
 ✔ Container cs5165-learningdocker-my-python-app-3  Removed                                                        0.0s
 ✔ Container cs5165-learningdocker-my-python-app-4  Removed                                                        0.0s
 ✔ Container cs5165-learningdocker-my-python-app-2  Removed                                                        0.0s
 ✔ Network cs5165-learningdocker_default            Removed                                                        0.3s
PS C:\Users\richa\Personal\GitHub\CS5165-LearningDocker>
```