report.md 2025-06-16

ソフトウェア工学 レポート課題11

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課題11-1: コンテナ環境での実行

実行したPythonプログラム

print("Hello, World!")

```
• fukutomi@M3-MacBook-Pro 11 % docker pull python:slim
```

slim: Pulling from library/python d9f4f37a2d6a: Download complete c7499e60179d: Download complete 34ef2a75627f: Download complete 679c4fe0cc44: Download complete

Digest: sha256:f2fdaec50160418e0c2867ba3e254755edd067171725886d5d303fd7057bbf81

Status: Downloaded newer image for python:slim

docker.io/library/python:slim

Dockerイメージをダウンロードするコマンドを実行

```
fukutomi@M3-MacBook-Pro 11 % docker image ls
REPOSITORY
                                     TAG
                                              IMAGE ID
                                                              CREATED
                                                                            SIZE
python
                                    slim
                                              f2fdaec50160
                                                                            206MB
                                                              4 days ago
shuhongchen/bizarre-pose-estimator latest
                                              aa193d0e01ab
                                                              3 years ago
                                                                            31.1GB
fukutomi@M3-MacBook-Pro 11 % docker run -it --rm python:slim bash
root@475cc2e03a83:/#
```

イメージの一覧を確認するコマンドとコンテナを起動するコマンドを実行

```
root@475cc2e03a83:/# exit
exit
fukutomi@M3-MacBook-Pro 11 % docker run -it --rm -v ${PWD}:/mnt python:slim bash
root@103c1a5ced44:/# cd /mnt
root@103c1a5ced44:/mnt# ls
1.png 2.png report.md test.py
```

コンテナをマウントするコマンドを実行

report.md 2025-06-16

root@103c1a5ced44:/mnt# python test.py Hello, World! root@103c1a5ced44:/mnt#

コンテナ内でPythonプログラムを実行するコマンドを実行

課題11-2:docker-compose.ymlの作成と検証

docker-compose.yml

Dockerfile(jupyter)

```
FROM quay.io/jupyter/datascience-notebook:2025-03-14
```

Dockerfile(plantuml)

```
FROM plantuml/plantuml-server:tomcat
```

```
fukutomi@M3-MacBook-Pro 11 % docker compose build

[+] Building 31.7s (6/10)

=> sha256:d9675235e846214e368835907fe9655bea78cad506c48c22196afab8e8daa71e 11.53MB / 142.43MB 20.0s

=> sha256:d9675235e846214e368835907fe9655bea78cad506c48c22196afab8e8daa71e 11.53MB / 142.43MB 18.4s

=> sha256:bb2921decffaaab7c22bc37b8a5862cf600f0940d31a738f57a3150c05c3d11c 16.78MB / 68.27MB 18.4s

=> sha256:d9675235e846214e368835907fe9655bea78cad506c48c22196afab8e8daa71e 11.53MB / 142.43MB 20.1s

=> sha256:d9675235e846214e368835907fe9655bea78cad506c48c22196afab8e8daa71e 11.53MB / 142.43MB 18.5s

=> sha256:d9675235e846214e368835907fe9655bea78cad506c48c22196afab8e8daa71e 11.53MB / 142.43MB 20.1s

=> sha256:bb2921decffaaab7c22bc37b8a5862cf600f0940d31a738f57a3150c05c3d11c 16.78MB / 68.27MB 14.3s

=> sha256:90071c194e0d7098ccab7ead5b78115299a93811e52933637603053da44713d1e1 68.16MB / 80.60MB 14.2s

=> sha256:90072dcff59618bc13f1790a03386842ca3871163f59d179b356324e700bdc78a5 66.06MB / 299.42MB 30.7s

=> sha256:00072dcff59618bc13f1790a03386842ca3871163f59d179b356324e700bdc78a5 66.06MB / 299.42MB 30.7s

=> sha256:5ddb6f06ad83e6bdba1859511c29746d5abfd7e2dcf4c06301bf9b10c528aac0 1.40kB / 1.40kB 1.1s

=> sha256:bb2921decffaaab7c22bc37b8a5862cf600f0940d31a738f57a3150c053d11c 16.78MB / 68.27MB 60cker:desktop-linux

=> sha256:bb2921decffaaab7c22bc37b8a5862cf600f0940d31a738f57a3150c053d11c 16.78MB / 68.27MB 60cker:desktop-linux
```

docker compose buildを実行してイメージをビルド

report.md 2025-06-16

fukutomi@M3-MacBook-Pro 11 % docker compose up -d [+] Running 3/3

- ✓ Network 11_default Created
 ✓ Container 11-jupyter-1 Started
 ✓ Container 11-plantuml-1 Started

docker compose up -d を実行してコンテナを起動

fukutomi@M3-MacBook-Pro 11 % docker compose ps						
NAME	IMAGE	COMMAND	SERVICE	CREATED	STATUS	PORTS
11-jupyter-1	11-jupyter	"tini -g start.sh "	jupyter	34 seconds ago	Up 33 seconds (healthy)	0.0.0.0:8888->8888/tcp
11-plantuml-1	11-plantuml	"/entrypoint.sh cata"	plantuml	34 seconds ago	Up 33 seconds	0.0.0.0:8080->8080/tcp

docker compose ps を実行してコンテナの状態を確認