

LAPORAN PRAKTIKUM MANAJEMEN DATA :

DOUCKER

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Oleh :

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PROGRAM STUDI SAINS DATA TERAPAN
DEPARTEMEN TEKNIK INFORMATIKA DAN KOMPUTER
POLITEKNIK ELEKTRONIKA NEGERI SURABAYA

JUNI 2025

TUGAS 1 (Quiz)

1.

SINTAKSIS

```
vboxuser@desktop:~$ nano monssh.sh
```

SINTAKSIS

```
GNU nano 7.2                                monssh.sh
#!/bin/bash

# Nama file log hasil
LOG_FILE="hasil_ssh.log"

# Interval cek dalam detik
INTERVAL=10
Help
echo "Mulai memonitor service ssh..." >> $LOG_FILE

while true; do
    TIMESTAMP=$(date '+%Y-%m-%d %H:%M:%S')
    SERVICE_STATUS=$(systemctl is-active ssh)

    echo "$TIMESTAMP - Status SSH: $SERVICE_STATUS" >> $LOG_FILE

    if [ "$SERVICE_STATUS" != "active" ]; then
        echo "[${TIMESTAMP}] ⚠ SSH Service tidak aktif!" | tee -a $LOG_FILE
    fi

    sleep $INTERVAL
done
```

SINTAKSIS

```
vboxuser@desktop:~$ chmod +x monssh.sh
vboxuser@desktop:~$ ./monssh.sh
[2025-06-08 07:51:13] ⚠ SSH Service tidak aktif!
[2025-06-08 07:51:24] ⚠ SSH Service tidak aktif!
[2025-06-08 07:51:34] ⚠ SSH Service tidak aktif!
```

2.

SINTAKSIS

```
vboxuser@desktop:~$ mkdir -p ~/data
vboxuser@desktop:~$ echo "file percobaan" > ~/data/file1.txt
vboxuser@desktop:~$ mkdir -p ~/backup
vboxuser@desktop:~$ nano ~/backup/backup.sh
```

SINTAKSIS

```
GNU nano 7.2 /home/vboxuser/backup/backup.sh *
#!/bin/bash

SOURCE_DIR="$HOME/data"
BACKUP_DIR="$HOME/backup"
MAX_FILES=10
INTERVAL=15 # detik
DURATION=$((60*60)) # 1 jam = 3600 detik
COUNT=0

end=$((SECONDS+DURATION))

while [ $SECONDS -lt $end ]; do
    FILE_INDEX=$(( (COUNT % MAX_FILES) + 1 ))
    TIMESTAMP=$(date +"%Y%m%d_%H%M%S")
    tar -czf "$BACKUP_DIR/backup$FILE_INDEX.tar.gz" -C "$SOURCE_DIR" .
    echo "Backup ke-$FILE_INDEX selesai pada $TIMESTAMP"
    COUNT=$((COUNT+1))
    sleep $INTERVAL
done
```

SINTAKSIS

```
vboxuser@desktop:~$ chmod +x ~/backup/backup.sh
vboxuser@desktop:~$ ~/backup/backup.sh
Backup ke-1 selesai pada 20250608_075709
Backup ke-2 selesai pada 20250608_075724
Backup ke-3 selesai pada 20250608_075739
Backup ke-4 selesai pada 20250608_075754
```

3.

SINTAKSIS

```
vboxuser@desktop:~$ nano data.txt
```

SINTAKSIS

```
GNU nano 7.2 data.txt *
timestamp      suhu    kelembaban  cahaya
2025-05-27T08:00 24.5    60          800
2025-05-27T08:15 25.0    62          850
2025-05-27T08:30 26.2    65          900
2025-05-27T08:45 27.1    67          950
```

SINTAKSIS

```
vboxuser@desktop:~$ nano suhu_maks.awk
```

SINTAKSIS

```
GNU nano 7.2 suhu_maks.awk *
BEGIN { max = -999 }
NR > 1 { if ($2 > max) max = $2 }
END { print "Suhu maksimum: " max }
```

SINTAKSIS

```
vboxuser@desktop:~$ awk -f suhu_maks.awk data.txt
Suhu maksimum: 27.1
```

SINTAKSIS

```
vboxuser@desktop:~$ nano rata_kelembaban.awk
```

SINTAKSIS

```
GNU nano 7.2 rata_kelembaban.awk
BEGIN { total = 0; count = 0 }
NR > 1 { total += $3; count++ }
END { print "Rata-rata kelembaban: " total / count }
```

SINTAKSIS

```
vboxuser@desktop:~$ awk -f rata_kelembaban.awk data.txt
Rata-rata kelembaban: 63.5
```

4.

SINTAKSIS

```
vboxuser@desktop:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
```

SINTAKSIS

```
vboxuser@desktop:~$ grep "/home/" /etc/passwd
vboxuser:x:1000:1000:vboxuser:/home/vboxuser:/bin/bash
vboxuser@desktop:~$ grep "/home/" /etc/passwd | cut -d: -f1
vboxuser
```

TUGAS 2

1. Install Docker

SINTAKSIS

Recent download history

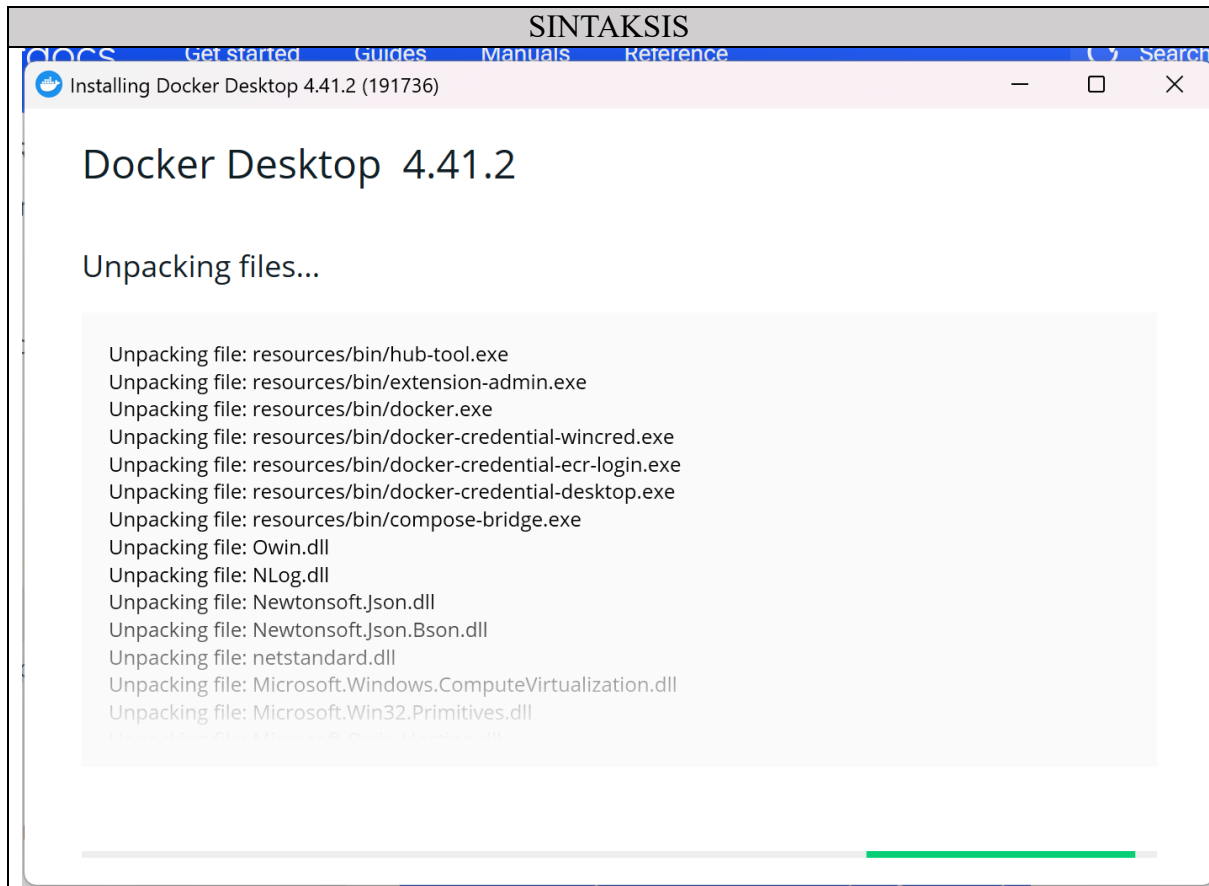
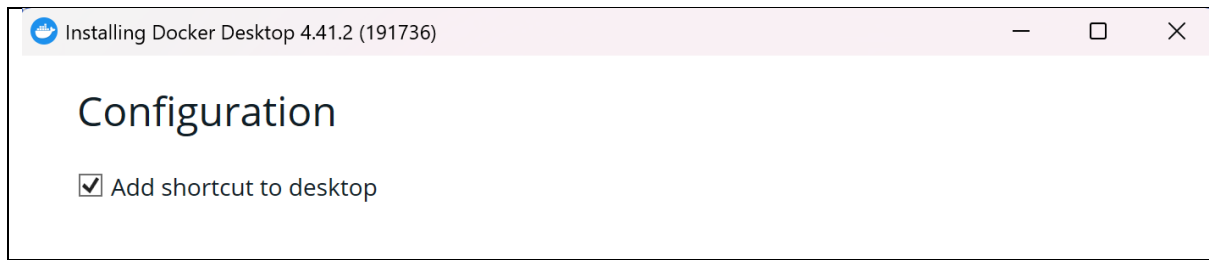


Docker Desktop Installer.exe

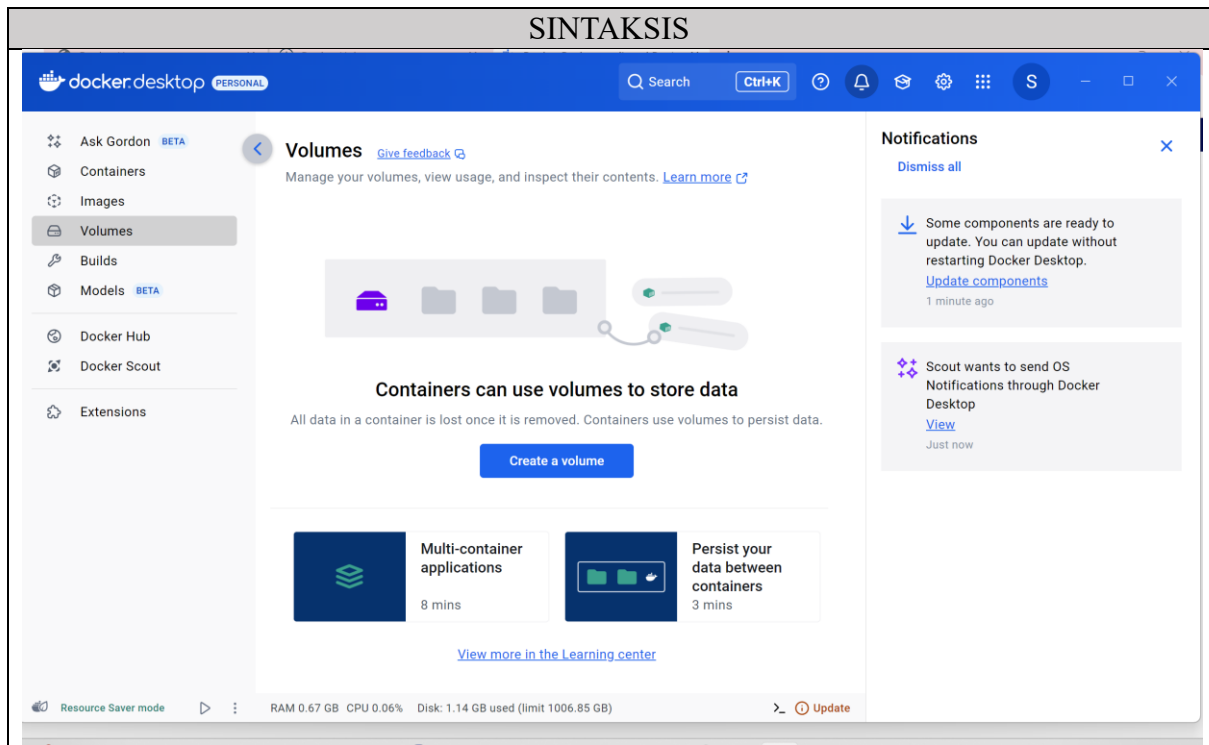
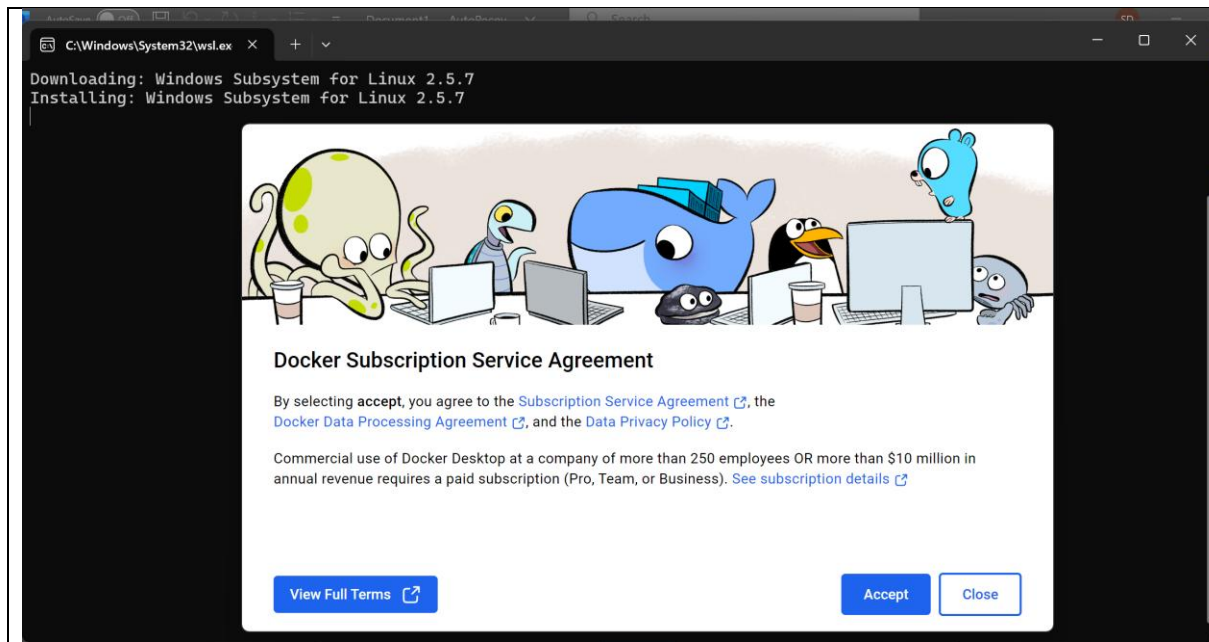
↓ 446/580 MB • 9 seconds left



SINTAKSIS



SETELAH RESTART



```
Command Prompt - wsl --ins X + v
Microsoft Windows [Version 10.0.26100.4061]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shafa Dzia>wsl --install
Downloading: Ubuntu
[===== 19,7% ]
```

2. Install WSL

```
SINTAKSIS
shaffaadz@shafa: /mnt/c/Use X + v
Microsoft Windows [Version 10.0.26100.4061]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shafa Dzia>wsl --install
Downloading: Ubuntu
Installing: Ubuntu
Distribution successfully installed. It can be launched via 'wsl.exe -d Ubuntu'
Launching Ubuntu...
Provisioning the new WSL instance Ubuntu
This might take a while...
Create a default Unix user account: shaffaadz
New password:
Retype new password:
passwd: password updated successfully
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

shaffaadz@shafa:/mnt/c/Users/Shafa Dzia$
```

3. Images

```
SINTAKSIS
C:\Users\Shafa Dzia>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
```

```
SINTAKSIS
```



```

C:\Users\Shafa Dzia> docker pull postgres
Using default tag: latest
latest: Pulling from library/postgres
dad67da3f26b: Downloading [====>] 2.097MB/28.23MB
b47a445a47f0: Download complete
c6def2c6e21d: Download complete
eb3a531023c8: Download complete
3664068a9b37: Download complete
8a1f652e0c97: Download complete
f4ce9941f6e3: Download complete
928d00623a6e: Download complete
db3ab53631e4: Download complete
64e8f1b2b243: Download complete
603ef9fcd8e: Downloading [=====] 2.097MB/8.066MB
c95f49cc11b3: Downloading [>] 1.049MB/112.8MB
05b641b3bdab: Downloading [=====] 2.097MB/4.534MB
abfd68ef219e: Download complete

```

SINTAKSIS

```

C:\Users\Shafa Dzia>docker images

```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
postgres	latest	6cf6142afacf	6 days ago	621MB

SINTAKSIS

```

C:\Users\Shafa Dzia>docker --version
Docker version 28.1.1, build 4eba377

```

```

C:\Users\Shafa Dzia>docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
43c486e74c6d: Pulling fs layer
ba155de89fc7: Download complete
958d7f5cf224: Download complete
2f44111e3dd4: Download complete
1770ba94c103: Download complete
55f4efd3f008: Download complete
e7b97b02f10e: Pulling fs layer
d89ba43c350c: Download complete
545a2bfff0604: Pulling fs layer
86362e2a75e4: Download complete

```

SINTAKSIS

```
C:\Users\Shafa Dzia>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
d9d352c11bbd: Pull complete
Digest: sha256:b59d21599a2b151e23eea5f6602f4af4d7d31c4e236d22bf0b62b86d2e386b8f
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
```

SINTAKSIS

```
C:\Users\Shafa Dzia>docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
postgres	latest	6cf6142afacf	6 days ago	621MB
ubuntu	latest	b59d21599a2b	2 weeks ago	117MB
mysql	latest	072f96c2f1eb	8 weeks ago	1.17GB

SINTAKSIS

<input type="checkbox"/>	Name	Tag	Image ID	Created	Size	Actions
<input type="checkbox"/>	<input type="radio"/> postgres	latest	6cf6142afacf	6 days ago	620.72 MB	▶ ⋮ 🗑️
<input type="checkbox"/>	<input type="radio"/> mysql	latest	072f96c2f1eb	2 months ago	1.17 GB	▶ ⋮ 🗑️
<input type="checkbox"/>	<input type="radio"/> ubuntu	latest	b59d21599a2b	15 days ago	117.29 MB	▶ ⋮ 🗑️

4. Docker Container

SINTAKSIS

```
C:\Users\Shafa Dzia>docker container ls
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
C:\Users\Shafa Dzia>docker run --name some-postgres -e POSTGRES_PASSWORD=123456 -d postgres	2f24d91f92a71e6983e95bb1b989ef9254289205bbf7d0d078dfaccf4cb8b6a3					

Run 'docker run --help' for more information

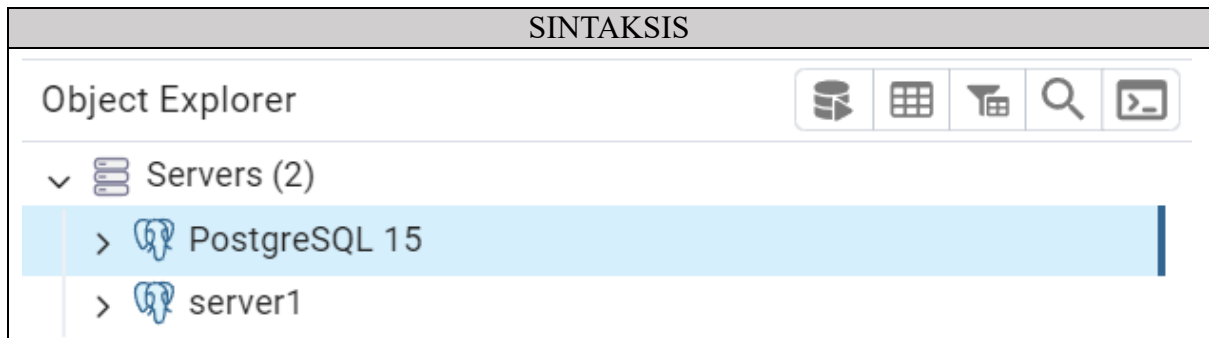
```
PS C:\Users\Shafa Dzia> docker run --name postgresserver1 -p 5431:5432 -e POSTGRES_PASSWORD=123456 -d postgres
2d6b3c01b585c192ed6b2a76b731e3cf36ea5467db4fab3566c018e85c3d656
PS C:\Users\Shafa Dzia>
```

5. Jalankan Image

SINTAKSIS

```
C:\Users\Shafa Dzia>docker run -it ubuntu
root@f6eaf97116af:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var
root@f6eaf97116af:/# pwd
/
root@f6eaf97116af:/# cd
root@f6eaf97116af:~# pwd
/root
root@f6eaf97116af:~#
```

6. Connect ke pgadmin



7. Install httpd - Run

SINTAKSIS

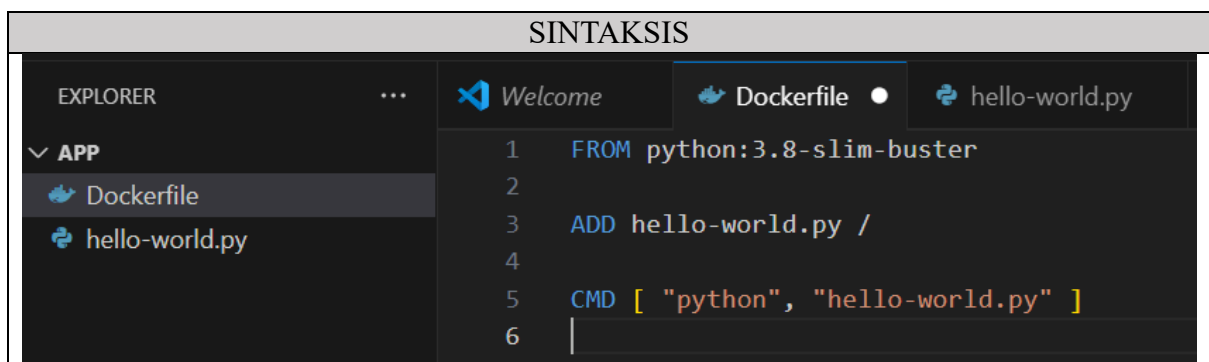
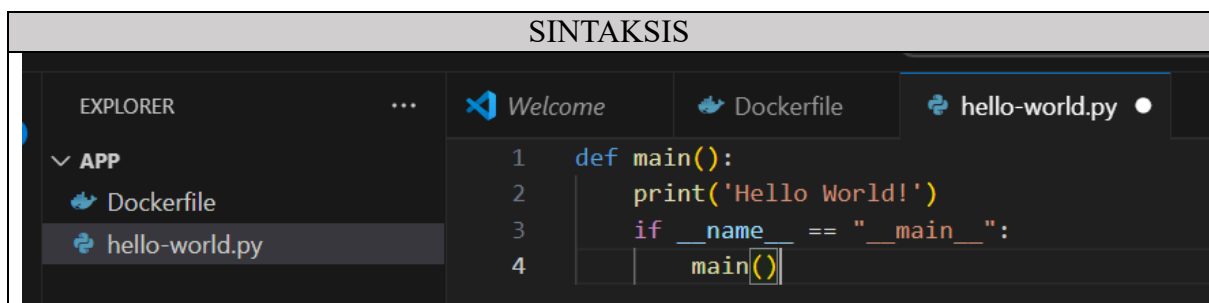
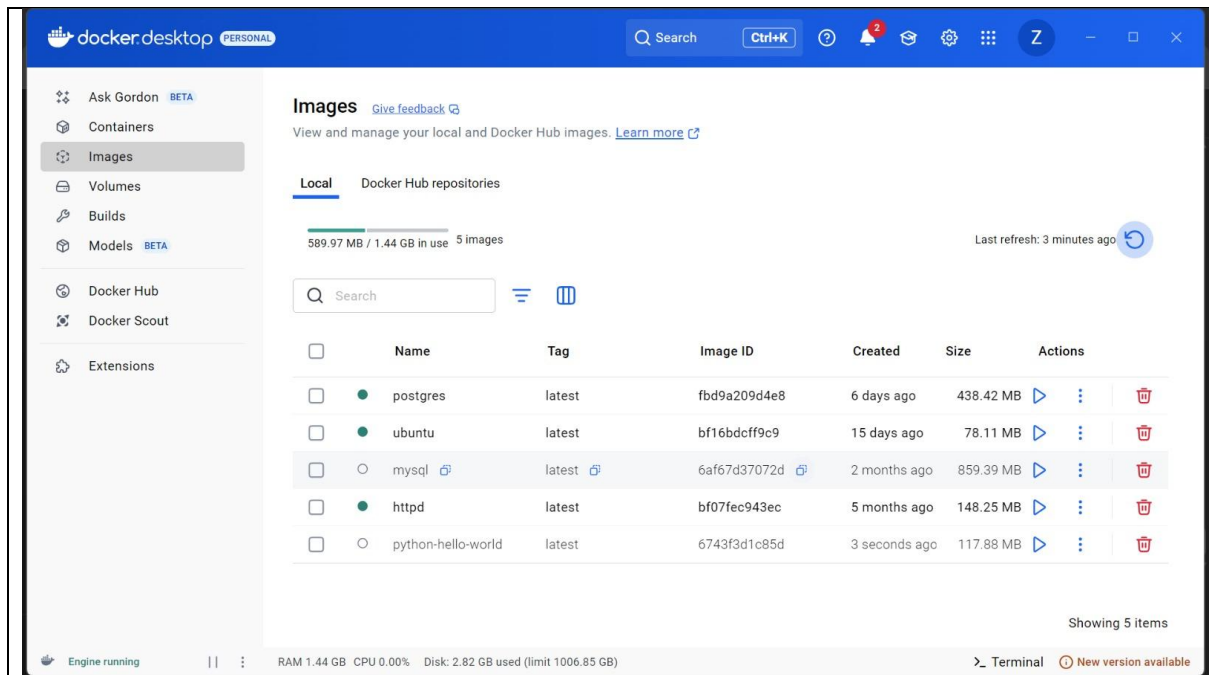
```

PS C:\Users\Shafa Dzia> docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
c06cec1379c2: Pull complete
d0a755bf09a1: Pull complete
4f4fb700ef54: Pull complete
be5c5a616c3a: Pull complete
d1042d58e186: Pull complete
Digest: sha256:f6557a77ee2f16c50a5ccbb2564a3fd56087da311bf69a160d43f73b23d3af2c
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
PS C:\Users\Shafa Dzia>
PS C:\Users\Shafa Dzia> docker run -d -p 80:80 --name my-apache httpd
7a29364b0f0115eccbc421ec5f88002b7d6a6690eeb2f142893cfcfb5f83ca18
PS C:\Users\Shafa Dzia>
PS C:\Users\Shafa Dzia> docker image ls
REPOSITORY      TAG           IMAGE ID       CREATED        SIZE
postgres        latest       6cf6142afacf   6 days ago    621MB
ubuntu          latest       b59d21599a2b   2 weeks ago   117MB
mysql           latest       072f96c2f1eb   8 weeks ago   1.17GB
httpd           latest       f6557a77ee2f   4 months ago  221MB
PS C:\Users\Shafa Dzia>

```

8. Membangun Aplikasi di Python





```
Administrator: Command Prompt

Run 'docker run --help' for more information

C:\Windows\System32>docker run python-hello-world
Hello World

C:\Windows\System32>
```

9. Aplikasi

```
SINTAKSIS

File Edit Selection View Go Run ... app_tugas2
EXPLORER
  OPEN EDITORS
    Dockerfile
    requirements.txt
    app.py
  APP_TUGAS2
    app.py
    Dockerfile
    requirements.txt

Dockerfile
1 FROM python:3.8-slim
2
3 WORKDIR /app
4
5 COPY requirements.txt .
6 RUN pip install -r requirements.txt
7
8 COPY . .
9
10 CMD ["python", "app.py"]
11

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\devin\OneDrive\Documents\app_tugas2> docker build -t flask-analisa .
>> run
[+] Building 52.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.1s
=> [internal] load metadata for docker.io/library/python:3.8-slim 0.0s
=> [internal] load metadata for docker.io/library/python:3.8-slim 3.0s
=> [auth] library/python:pull token for registry-1.docker.io 0.0s
=> [internal] load .dockerignore 0.0s
=> [internal] load context: 28 0.0s
=> [1/5] FROM docker.io/library/python:3.8-slim@sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f 40.2s
=> resolve docker.io/library/python:3.8-slim@sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f 0.0s
=> sha256:302e3ee498053a7b5332ac79e8efebec16e900289fc1ecd1c754ce8fa047fcab 29.13MB / 29.13MB 32.9s
=> sha256:030d7bdc20a63e3d22192b292d006a69fa333949f536d62865d1bd0506685cc 3.51MB / 3.51MB 11.9s
=> sha256:a3f1dfe736c5f959143f23d75ab522a60be2da902efac236f4fb2a153cc14a5d 14.53MB / 14.53MB 23.3s
=> sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f 10.41kB / 10.41kB 0.0s
=> sha256:314bc2fb0714b7807bf5699c98f0c73817e579799f2d91567ab7e9510f5601a5 1.75kB / 1.75kB 0.0s
=> sha256:b5f62925bd0f63f48cc8acd5e87d0c3a07e2f229cd2fb0a9586e68ed17f45ee3 5.25kB / 5.25kB 0.0s
```

SINTAKSIS

Visual Studio Code interface showing the Dockerfile and requirements.txt files. The Dockerfile contains the following content:

```
Dockerfile
1 flask
2
```

The requirements.txt file contains the following content:

```
requirements.txt
1 flask
2
```

The terminal output shows the Docker build process:

```
PS C:\Users\devin\OneDrive\Documents\app_tugas2> docker build -t flask-analisa .
>> run
[+] Building 52.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> [internal] load metadata for docker.io/library/python:3.8-slim
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load .dockerignore
=> [internal] load context: 28
=> [1/5] FROM docker.io/library/python:3.8-slim@sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f
=> resolve docker.io/library/python:3.8-slim@sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f
=> sha256:302e3ee498053a7b5332ac79e8efebec16e900289fc1ecd1c754ce8fa047fcab 29.13MB / 29.13MB
=> sha256:030d7bdc20a63e3d22192b292d006a69fa333949f536d2865d1bd0506685cc 3.51MB / 3.51MB
=> sha256:a3f1dfe736c5f959143f23d75ab522a60be2da902efac236f4fb2a153cc14a5d 14.53MB / 14.53MB
=> sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f 10.41kB / 10.41kB
=> sha256:314bc2fb0714b7807bf5699c98f0c73817e579799f2d91567ab7e9510f5601a5 1.75kB / 1.75kB
=> sha256:b5f62925bd0f63f48cc8acd5e87d0c3a07e2f229cd2fb0a9586e68ed17f45ee3 5.25kB / 5.25kB
```

SINTAKSIS

Visual Studio Code interface showing the app.py file. The app.py file contains the following content:

```
app.py
1 from flask import Flask, jsonify
2
3 app = Flask(__name__)
4
5 # Data dummy
6 data = [10, 20, 30, 40, 50]
7
8 @app.route('/')
9 def index():
10     return "Aplikasi Analisa Data - Buka /analisa untuk lihat hasil"
11
12 @app.route('/analisa')
13 def analisa():
14     rata_rata = sum(data) / len(data)
15     return jsonify({
16         "data": data,
17         "rata_rata": rata_rata
18     })
19
20 if __name__ == '__main__':
21     app.run(host='0.0.0.0', port=5000)
22
```

The terminal output shows the Docker build process:

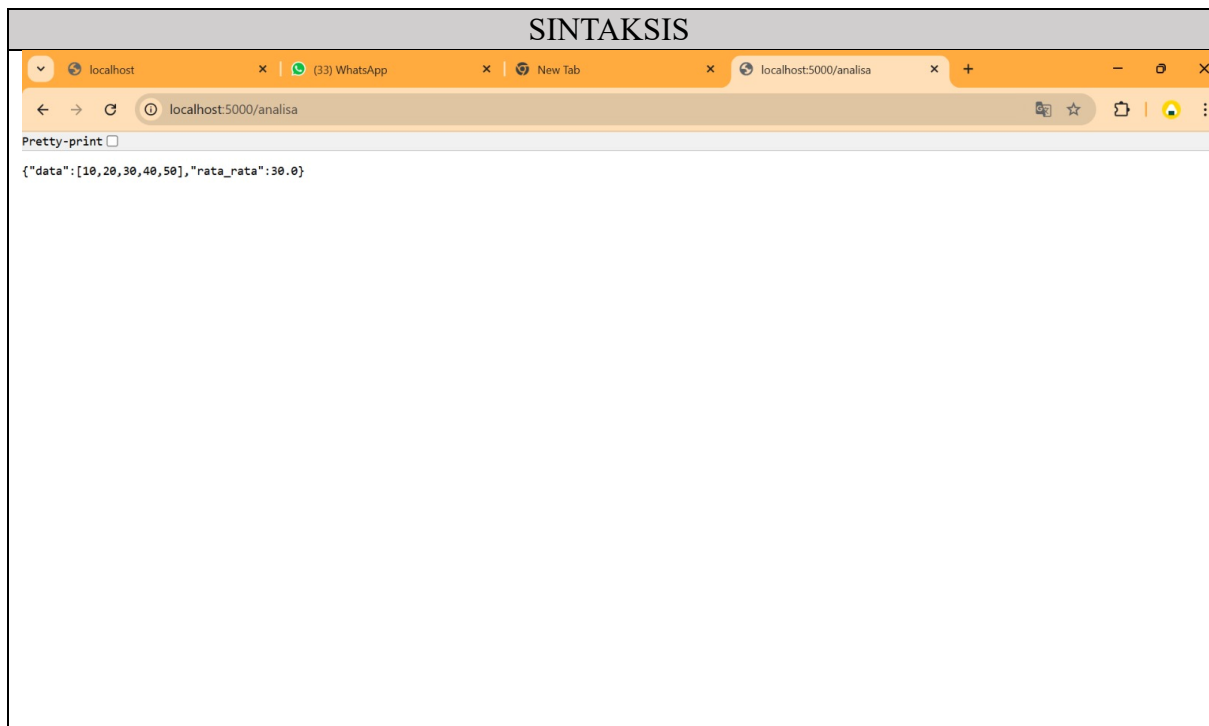
```
=> sha256:314bc2fb0714b7807bf5699c98f0c73817e579799f2d91567ab7e9510f5601a5 1.75kB / 1.75kB
=> sha256:b5f62925bd0f63f48cc8acd5e87d0c3a07e2f229cd2fb0a9586e68ed17f45ee3 5.25kB / 5.25kB
=> sha256:3971691a363796c39467aae4cdce6ef773273fe6bfc67154d81e1b589befb912 2488 / 2488
=> extracting sha256:302e3ee498053a7b5332ac79e8efebec16e900289fc1ecd1c754ce8fa047fcab 4.3s
=> extracting sha256:030d7bdc20a63e3d22192b292d006a69fa333949f536d2865d1bd0506685cc 0.4s
=> extracting sha256:a3f1dfe736c5f959143f23d75ab522a60be2da902efac236f4fb2a153cc14a5d 2.0s
```

SINTAKSIS

Administrator: Command Prompt - docker run -p 5000:5000 flask-analisa

```
Hello World

C:\Windows\System32>docker run -p 5000:5000 flask-analisa
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.4:5000
Press CTRL-C to quit
172.17.0.1 - - [13/Jun/2025 00:05:25] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [13/Jun/2025 00:05:25] "GET /favicon.ico HTTP/1.1" 404 -
```



- Link Github : <https://github.com/shaffaadz/mandat>
- Link Video : <https://drive.google.com/drive/folders/15c36qHGeG-yj7iulCGnKTvfzkM-tpITY>