

PRAKTIKUM MANAJEMEN DATA DOCKER

Dosen Pengampu : Isbat Uzzin Nadhori S.Kom., M.T



Oleh :

Dhini Fita Amanda

3324600004

POLITEKNIK ELEKTRONIKA NEGERI SURABAYA
PROGRAM STUDI SAINS DATA TERAPAN
JUNI 2025

1. Tugas 1
Soal No. 1

Sintaks	
	<pre>vboxuser@desktop:~\$ nano monssh.sh</pre>

Sintaks	
	<pre>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_ fi sleep \$INTERVAL done</pre>

Sintaks	
	<pre>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!</pre>

Soal No. 2

Sintaks	
	<pre>vboxuser@desktop:~\$ mkdir -p ~/data vboxuser@desktop:~\$ echo "file percobaan" > ~/data/file1. vboxuser@desktop:~\$ mkdir -p ~/backup vboxuser@desktop:~\$ nano ~/backup/backup.sh</pre>

```
Sintaks
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
```

```
Sintaks
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
```

Soal 3

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

```
Sintaks
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
```

Sintaks

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

Sintaks

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

Sintaks

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

Sintaks

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

Sintaks

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

Sintaks

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

Soal 4

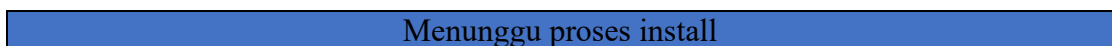
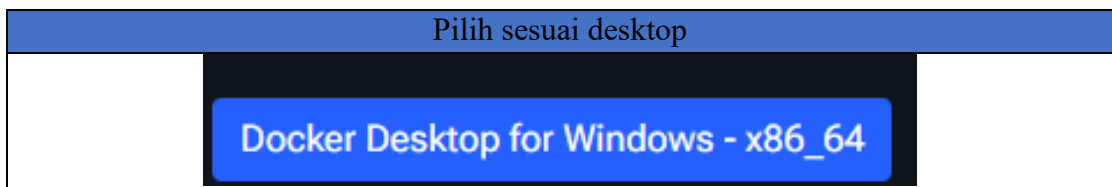
Sintaks

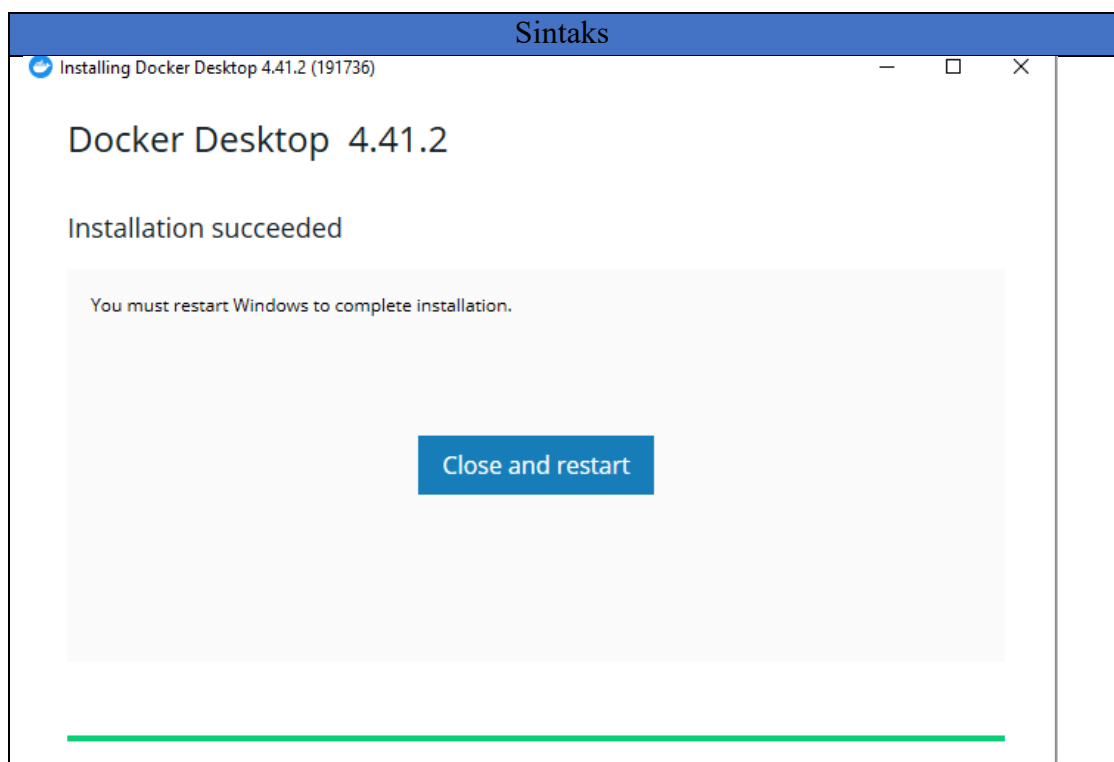
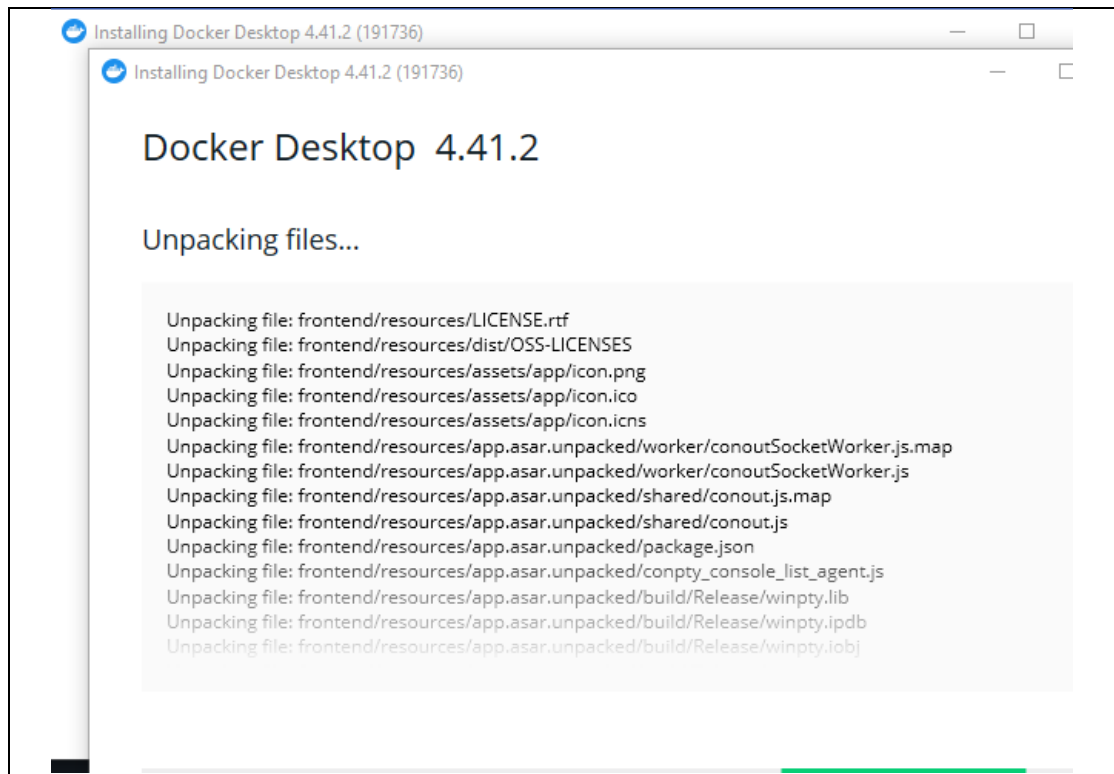
```
vboxuser@desktop:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
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
```

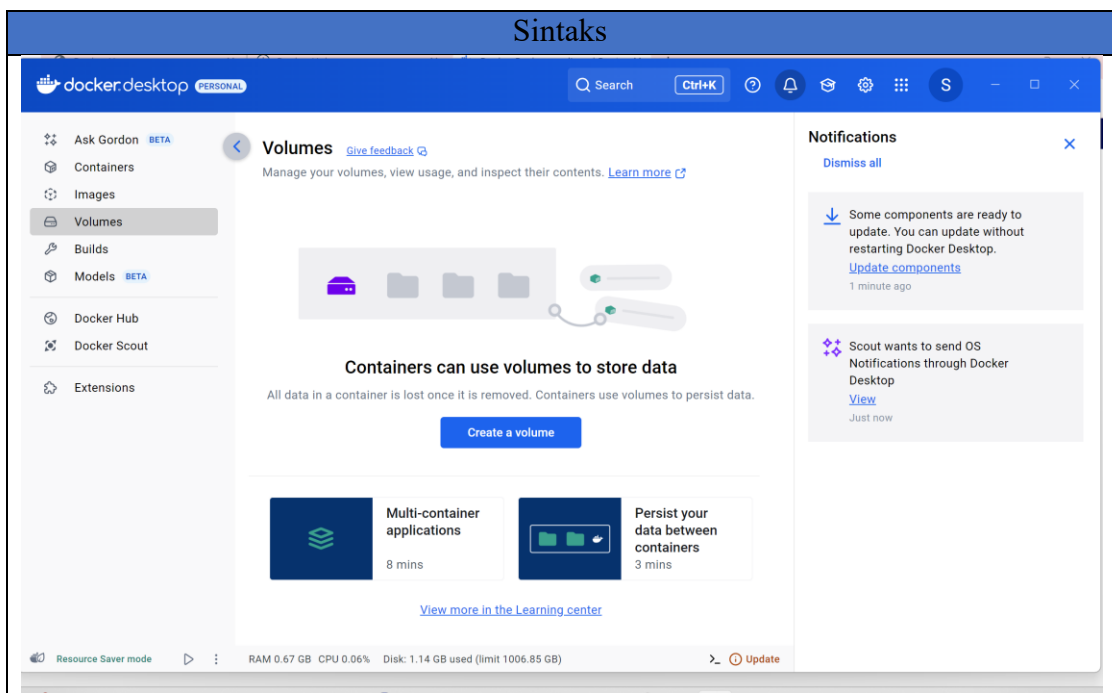
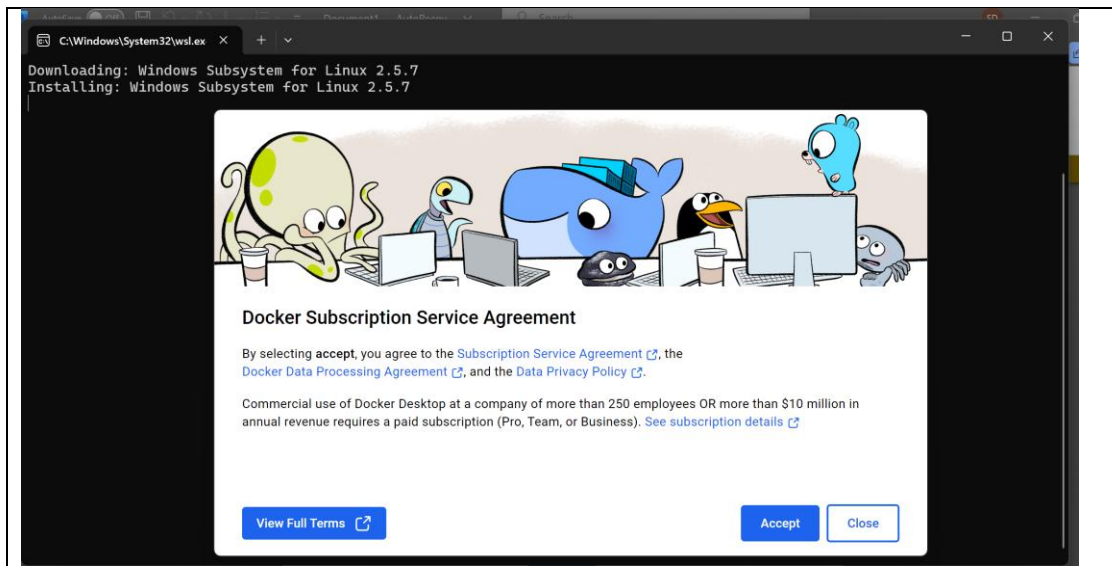
```
Sintaks
vboxuser@desktop:~$ grep "/home/" /etc/passwd
vboxuser:x:1000:1000:vboxuser:/home/vboxuser:/bin/bash
vboxuser@desktop:~$ grep "/home/" /etc/passwd | cut -d: -f1
vboxuser
```

2. Tugas 2

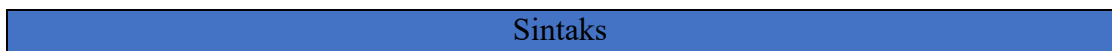
Install Docker







Install WSL



```
Administrator: Command Prompt
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: devin
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.

devin@mnt/c/Windows/System32$ docker images ls

The command 'docker' could not be found in this WSL 2 distro.
We recommend to activate the WSL integration in Docker Desktop settings.

For details about using Docker Desktop with WSL 2, visit:
https://docs.docker.com/go/wsl2/

devin@mnt/c/Windows/System32$ exit
exit

C:\Windows\System32>docker images ls
error during connect: Head "http://%2F%2F.%2Fpipe%2FdockerDesktopLinuxEngine/_ping": open //./pipe/dockerDesktopLinuxEngine: The system cannot find the file s

C:\Windows\System32>docker images ls
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE

No images found matching "ls": did you mean "docker image ls"?

C:\Windows\System32>
```

Images

Sintaks

```
Administrator: Command Prompt
C:\Windows\System32>docker images ls
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE

No images found matching "ls": did you mean "docker image ls"?

C:\Windows\System32>docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE

C:\Windows\System32>docker pull postgres
Using default tag: latest
latest: Pulling from library/postgres
dad67da3f26b: Pull complete
eb3a531023c8: Pull complete
05b641b3bdab: Pull complete
64e8f1b2b243: Pull complete
603ef9fcd8e: Pull complete
8a1f652e8c97: Pull complete
c6def2c6e21d: Pull complete
b47a445a47f0: Pull complete
c95f49cc11b3: Pull complete
3664068a9b37: Pull complete
abfd68ef219e: Pull complete
928d00623a6e: Pull complete
db3ab53631e4: Pull complete
f4ce9941f6e3: Pull complete
Digest: sha256:6cf6142afacfa89fb28b894d6391c7dcbf6523c33178bdc33e782b3b533a9342
Status: Downloaded newer image for postgres:latest
docker.io/library/postgres:latest

C:\Windows\System32>docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
postgres      latest    fbd9a209d4e8   6 days ago   438MB

C:\Windows\System32>
```

Sintaks


```
Administrator: Command Prompt

C:\Windows\System32>docker --version
Docker version 28.1.1, build 4eba377

C:\Windows\System32>docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
43c486e74c6d: Pull complete
86362e2a75e4: Pull complete
ba155de89fc7: Pull complete
17700ae94c103: Pull complete
d89ba43c350c: Pull complete
55f4efd3f008: Pull complete
e7b97b02f10e: Pull complete
2f44111e3dd4: Pull complete
545a2bfff0604: Pull complete
958d7f5cf224: Pull complete
Digest: sha256:072f96c2f1ebb13f712fd88d9ef98f2ef9a52ad4163ae67b550ed6728b6d642e
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest

C:\Windows\System32>
```

Sintaks

```
Administrator: Command Prompt

C:\Windows\System32>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
d9d352c11bbd: Pull complete
Digest: sha256:b59d21599a2b151e23eea5f6602f4af4d7d31c4e236d2bf0b62b86d2e386b8f
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest

C:\Windows\System32>
```






Sintaks

```
Administrator: Command Prompt
C:\Windows\System32>docker image ls
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
postgres      latest    fbd9a289d4e8   6 days ago    438MB
ubuntu        latest    bf16bdcff9c9   2 weeks ago   78.1MB
mysql         latest    6af67d37872d   8 weeks ago    859MB
C:\Windows\System32>Z
```

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

Container

```
Sintaks
Administrator: Command Prompt
C:\Windows\System32>docker container ls
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
C:\Windows\System32>docker run --name some-postgres -e POSTGRES_PASSWORD=123456 -d postgres
9a157f11e97fa14d2ce16357ca0bdca563f1a13b9e18ea157c68aa898c8c86e9
C:\Windows\System32>docker run --name postgresserver1 -p 5431:5432 -e POSTGRES_PASSWORD=123456 -d postgres
299be74dc9d4e56567ec96655878bf7c27e6f8caf4b6ec975a85a78d97c99251
C:\Windows\System32>
```

<input type="checkbox"/>	Name	Container ID	Image	Port(s)	CPU (%)	Last sta	Actions
<input type="checkbox"/>	 some-postgres	9a157f11e97f	postgres		0%	3 minute	  
<input type="checkbox"/>	 postgresserver1	299be74dc9d4	postgres	5431:5432 	0.02%	45 secot	  

Jalankan Image





Sintaks

```
C:\Windows\System32>docker run -it ubuntu
root@7a09040dd0cd:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys usr var
root@7a09040dd0cd:/# pwd
/
root@7a09040dd0cd:/# cd
root@7a09040dd0cd:~# pwd
/root
root@7a09040dd0cd:~#
```


Connect PgAdmin


Sintaks

Object Explorer



▼ Servers (2)

>  PostgreSQL 15

>  server1

Install httpd - Run

Sintaks

```
Administrator: Command Prompt
7a9d9c81d170 postgres "docker-entrypoint.s..." 14 seconds ago Up 14 seconds 0.0.0.0:5432->5432/tcp some-postgres

C:\Windows\System32>docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
dad67da3f26b: Already exists
d0a755bf09a1: Pull complete
4f4fb700ef54: Pull complete
be5c5a616c3a: Pull complete
d1042d58e186: Pull complete
c06cec1379c2: Pull complete
Digest: sha256:f6557a77ee2f16c50a5ccbb2564a3fd56087da311bf69a160d43f73b23d3af2d
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest

C:\Windows\System32>
```

Sintaks

```
Administrator: Command Prompt
C:\Windows\System32>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                    NAMES
7a9d9c81d170   postgres  "docker-entrypoint.s..." 14 seconds ago Up 14 seconds 0.0.0.0:5432->5432/tcp   some-postgres

C:\Windows\System32>docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
dad67da3f26b: Already exists
d0a755bf09a1: Pull complete
4f4fb700ef54: Pull complete
be5c5a616c3a: Pull complete
d1042d58e186: Pull complete
c06cec1379c2: Pull complete
Digest: sha256:f6557a77ee2f16c50a5ccbb2564a3fd56087da311bf69a160d43f73b23d3af2d
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest

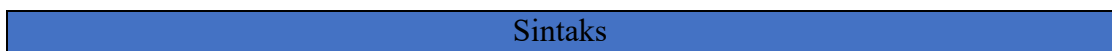
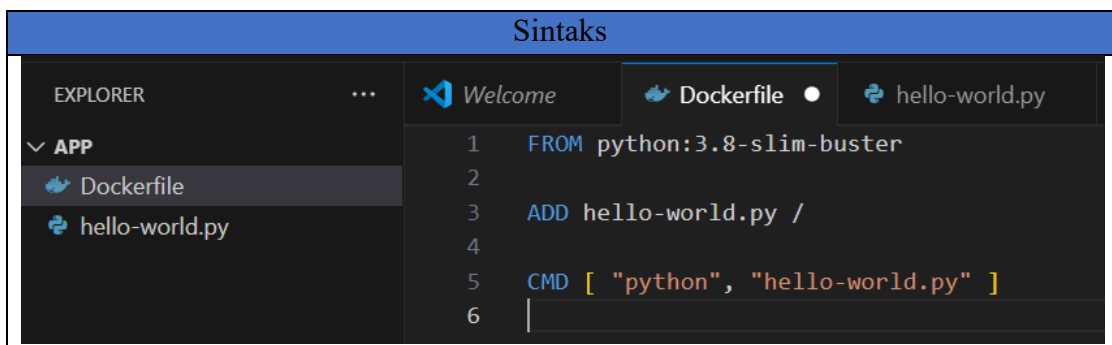
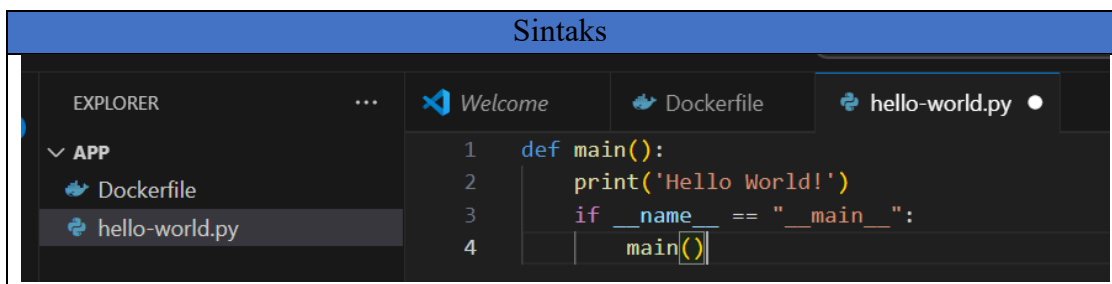
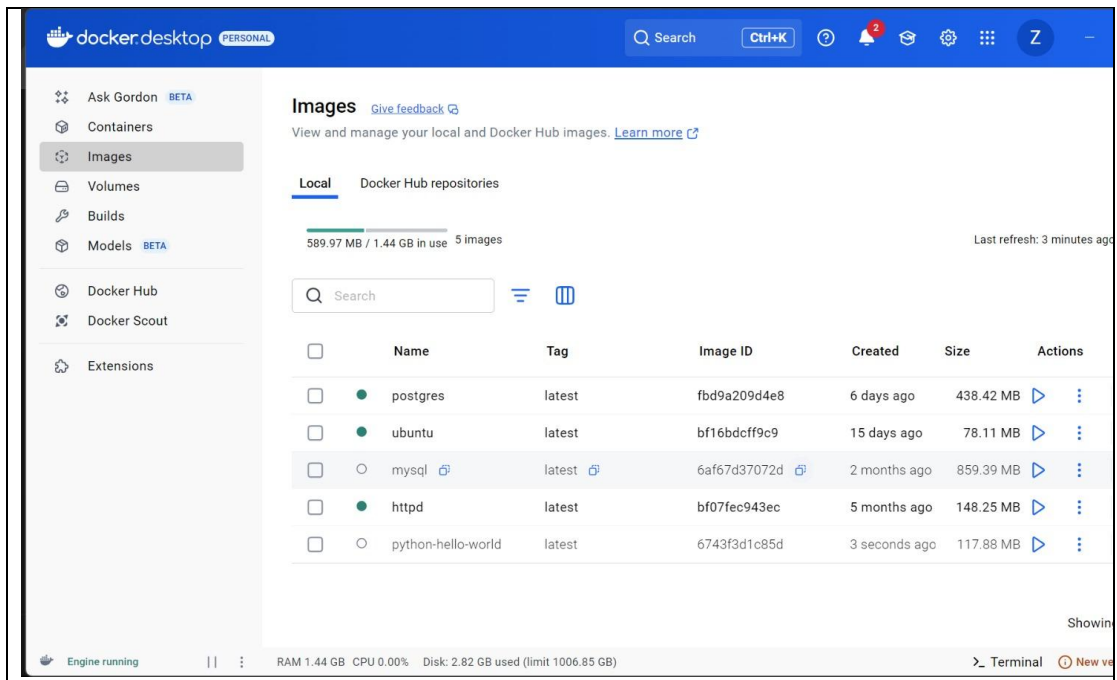
C:\Windows\System32>docker run -d -p 80:80 --name my-apache httpd
38213d11192b42d05d9104b61948dcb3e4de74dcd59d66d85b19bdf19b5c54f7

C:\Windows\System32>docker image ls
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
postgres      latest   fbd9a209d4e8   6 days ago    438MB
ubuntu        latest   bf16bdcff9c9   2 weeks ago   78.1MB
mysql         latest   6af67d37072d   8 weeks ago   859MB
httpd         latest   bf07fec943ec   4 months ago  148MB

C:\Windows\System32>
```

Membangun Apk di Python

Sintaks



```
Administrator: Command Prompt

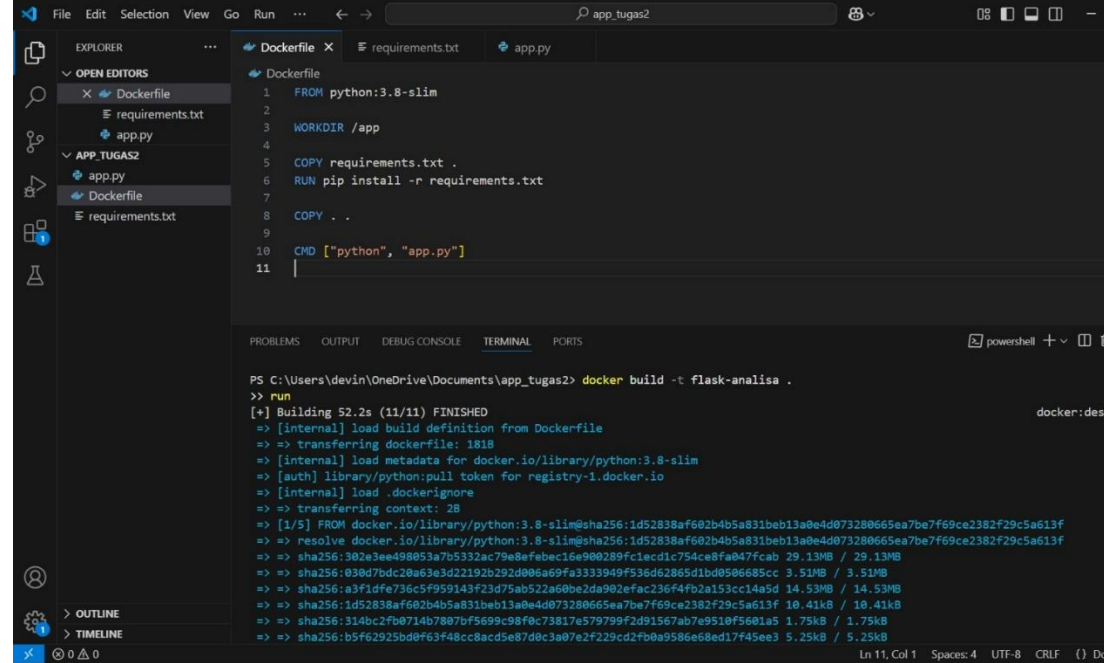
Run 'docker run --help' for more information

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

C:\Windows\System32>
```

Aplikasi Data

Sintaks



The image shows a Visual Studio Code editor with a Dockerfile open. The Dockerfile contains the following instructions:

```
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
```

The terminal at the bottom shows the output of the command `docker build -t flask-analisa .` and `run`. The build process is successful, and the output shows the following steps:

```
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
=> => transferring dockerfile: 181B
=> [internal] load metadata for docker.io/library/python:3.8-slim
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [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
=> => sha256:030d7bdc20a63e3d22192b292d006a69fa333949f536d62865d1bd0506685cc 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
```

Sintaks

The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left shows the file structure with 'requirements.txt' and 'app.py' selected. The main editor area displays the contents of 'requirements.txt', which contains the text 'flask'. Below the editor, the TERMINAL panel is active, showing the output of the command 'docker build -t flask-analisa .'. The output indicates that the build was successful, with a message '[+] Building 52.2s (11/11) FINISHED'. The terminal also shows the Docker build process, including the resolution of the 'python:3.8-slim' image and the transfer of the build context.

```
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
=> => transferring dockerfile: 181B
=> [internal] load metadata for docker.io/library/python:3.8-slim
=> [auth] library/python:pull token for registry-1.docker.io
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [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
=> sha256:030d7bdc20a63e3d22192b292d006a69fa333949f536d62865d1bd0506685cc 3.51MB / 3.51MB
=> sha256:a3f1dfe736c5f959143f23d75ab522a60be2da902efac236f4fb2a153cc14a5d 14.53MB / 14.53MB
=> sha256:1d52838af602b4b5a831beb13a0e4d073280665ea7be7f69ce2382f29c5a613f 10.41kB / 10.41kB
=> sha256:314bc2fb0714b7807bf5699c98f0c73817e579799fd91567ab7e9510f5601a5 1.75kB / 1.75kB
=> sha256:b5f62925bd0f63f48cc8acd5e87d0c3a07e2f229cd2fb0a9586e68ed17f45ee3 5.25kB / 5.25kB
```

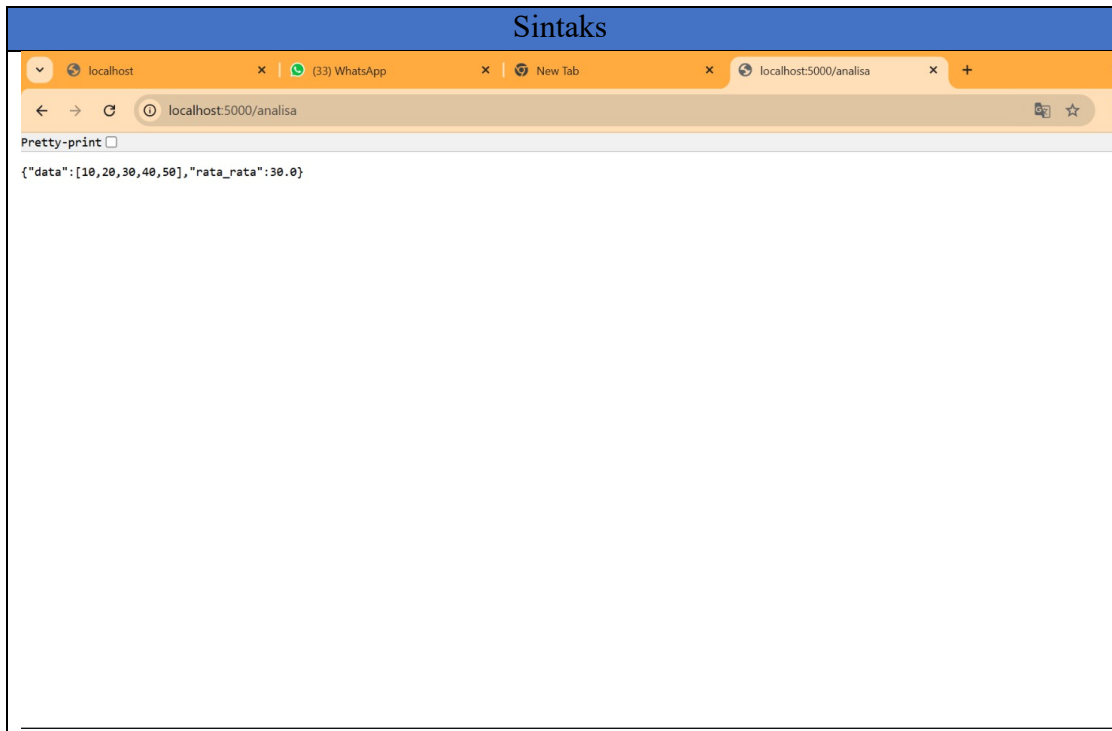
The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left shows the file structure with 'app.py' selected. The main editor area displays the contents of 'app.py', which contains a Flask application. The application imports 'Flask' and 'jsonify', creates an app, and defines two routes: 'index()' and 'analisa()'. The 'analisa()' route calculates the average of a list of numbers and returns the result as JSON. The terminal panel at the bottom shows the output of the 'docker build' command, which is the same as the one in the first screenshot, indicating that the build was successful.

```
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
```

Sintaks

```
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/amandadf8/tugasdocker>

Link Video :

<https://drive.google.com/drive/folders/1HINt9DpnIcrbTUIOuWOpGQXnvLSJfsbD?usp=sharing>