LAPORAN PRAKTIKUM MANAJEMEN DATA

DOCKER

Dosen Pengampu :

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POLITEKNIK ELEKTRONIKA NEGERI SURABAYA

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PROGRAM STUDI SAINS DATA TERAPAN

PEMBAHASAN UAS

1. SOAL 1

Membuat script untuk melakukan pengecekan service ssh secara berkala dengan interval waktu tiap 10 detik dan memberikan notifikasi ke layar jika service ssh mati.

- Membuat file untuk diisi perintah

```
morenogibran@mrngbrn:~$ nano monssh.sh
```

- Menambahkan isi

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

LOG_FILE="hasil_ssh.log"

INTERVAL=10

echo "Mulai memonitor service ssh....." >
$LOG_FILE

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

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

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

        sleep $INTERVAL
done_
```

- Membuka akses agar perintah berjalan

```
morenogibran@mrngbrn:~$ chmod +x monssh.sh
morenogibran@mrngbrn:~$ ./monssh.sh_
```

2. SOAL 2

Membuat script backup direktori tertentu dan jalankan backup secara berkala setiap 15 detik dengan backup ke file 1 sd 10 dan kembali lagi menimpa file 1 jika sudah file 10 dijalankan selama 1 jam.

• Membuat direktori data dan file contoh

```
morenogibran@mrngbrn:~$ mkdir -p ~/data
morenogibran@mrngbrn:~$ echo "file percobaan" > ~/data/file.txt
```

• Membuat direktori backup

```
morenogibran@mrngbrn:~$ mkdir -p ~/backup
```

• Membuat dan mengedit script backup

```
morenogibran@mrngbrn:~$ nano ~/backup/backup.sh
```

```
  GNU nano 7.2
#!bin/bash

SOURCE_DIR="$HOME/data"
BACKUP_DIR="HOME/backup"
MAX_FILES=10
INTERVAL=15
DURATION=$((60*60))

COUNT=0

end=$((SECOND+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_
```

• Mengedit crontab untuk menjalankan script secara berkala (setelah script diperbaiki)

```
> crontab -e
  GNU nano 7.2                                                    /tmp/cron
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
```

• Melihat entri crontab yang sudah diinstal

```
crontab: installing new crontab
> crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
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# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
```

3. SOAL 3

Membuat script awk dari suatu file, lalu menghitung rata-rata dan menampilkan nilai maksimum dari file tersebut.

• Menuliskan sebuah data yang nantinya akan diinputkan ke file data.txt

```
morenogibran@mrngbrn:~$ nano data.txt
```

```
  GNU nano 7.2
timestamp suhu kelembapan 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
```

• Membuat sebuah file untuk diisi perintah

```
morenogibran@mrngbrn:~$ nano suhu_maks.awk
```

• Menambahkan isi seperti di bawah dan disimpan

```
  GNU nano 7.2                                                    suhu_maks.awk
#!/bin/bash

echo "Menghitung suhu maksimum:"
awk 'NR > 1 {if ($2  max) max = $2} END {print "suhu maksimum: " max}' data.txt

echo ""
echo "mengitung rata-rata kelembapan:"
awk 'NR  > 1 {tootal += $3; count++ } END {print "rata-rata kelembapan: " total/count >
```

4. SOAL 4

Membuat perintah di linux untuk melihat isi file /etc/passwd, lalu melakukan filter yang memiliki directory home dan mengambil nama user nya, dan melakukan filtering lagi.

• Melihat isi file /etc/passwd

```
morenogibran@mrngbrn:~$ cat /etc/passwd
```

• Memfilter baris yang mengandung /home

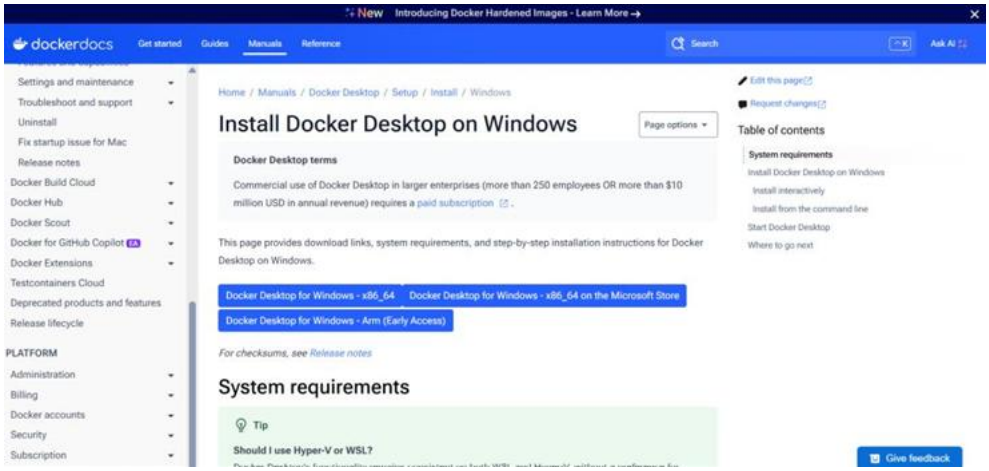
```
morenogibran@mrngbrn:~$ grep "/home/" /etc/passwd
morenogibran:x:1000:1000:moreno gibran:/home/morenogibran:/bin/bash
paul:x:1001:1004::/home/paul:/bin/bash
jane:x:1002:1005::/home/jane:/bin/bash
alice:x:1003:1003::/home/alice:/bin/bash
derek:x:1004:1009::/home/derek:/bin/bash
```

• Memfilter baris dan mengekstrak nama user dengan cut

```
morenogibran@mrngbrn:~$ grep "/home/" /etc/passwd | cut -d: -f1
morenogibran
paul
jane
alice
derek
```

INSTALASI DOCKER

1. Install Docker



2. Install WSL di cmd

```
C:\Users\ACER>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: moreno_ibran
New password:
Retype new password:
passwd: password updated successfully
To run a command as administrator (user "root"), use "sudo <comm
and>".
See "man sudo_root" for details.

moreno_ibran@DESKTOP-4RI6LOA:/mnt/c/Users/ACER$
```

3. Menjalankan docker image ls

```
C:\Users\ACER>docker image ls
REPOSITORY   TAG       IMAGE ID   CREATED   SIZE
```

4. Menjalankan docker images

```
C:\Users\ACER>docker images
REPOSITORY   TAG       IMAGE ID   CREATED   SIZE
```

5. Mengambil data postgres

```
C:\Users\ACER>docker pull postgres
Using default tag: latest
latest: Pulling from library/postgres
61320b01ae5e: Pull complete
3db9b37be7c3: Pull complete
e9a82aed48d7: Pull complete
7c852ebdd63e: Pull complete
28708ff4e046: Pull complete
6ce13d85dabe: Pull complete
bd1fa28722bb: Pull complete
410cd7ec9a40: Pull complete
475b0e32b814: Pull complete
e7aba16d6a5e: Pull complete
89ba8b615fa9: Pull complete
82697a7976df: Pull complete
7e11eb1421f3: Pull complete
2bb588ce4e67: Pull complete
Digest: sha256:6efd0df010dc3cb40d5e33e3ef84acecc5e73161bd3df0602
9ee8698e5e12c60
Status: Downloaded newer image for postgres:latest
docker.io/library/postgres:latest
```

6. Mencoba images kembali

```
C:\Users\ACER>docker images
REPOSITORY   TAG       IMAGE ID       CREATED       SIZE
postgres     latest    7fb32a7ac3a9   2 weeks ago   438MB
```

7. Cek version docker

```
C:\Users\ACER>docker --version
Docker version 28.1.1, build 4eba377
```

8. Mengambil data mysql

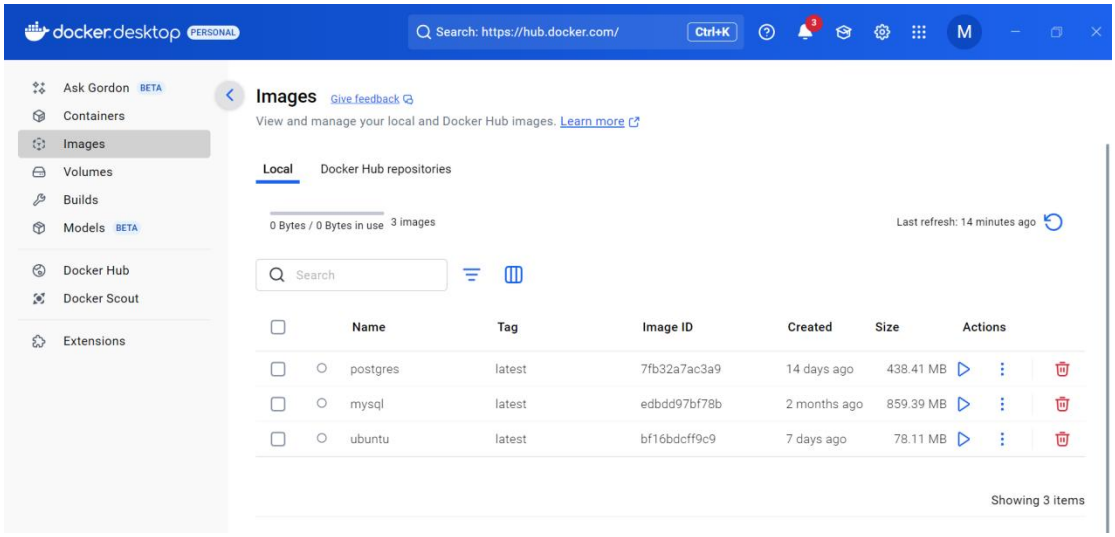
```
C:\Users\ACER>docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
9845df06f911: Pull complete
4bd1fb59dd90: Pull complete
d23320eed97a: Pull complete
7074f55c9a02: Pull complete
72ac912b8a2e: Pull complete
b097427f1ebe: Pull complete
b288ccce2510: Pull complete
7488ffd7127f: Pull complete
8a50ff4ab30c: Pull complete
5056ce4ab875: Pull complete
Digest: sha256:04768cb63395f56140b4e92cad7c8d9f48dfa181075316e95
5da75aadca8a7cd
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
```

9. Mengambil data dari ubuntu

```
C:\Users\ACER>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
d9d352c11bbd: Pull complete
Digest: sha256:b59d21599a2b151e23eea5f6602f4af4d7d31c4e236d22bf0
b62b86d2e386b8f
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
```

10. Cek kembali image

```
C:\Users\ACER>docker image ls
REPOSITORY   TAG       IMAGE ID       CREATED       SIZE
ubuntu       latest    bf16bdcff9c9   7 days ago    78.1MB
postgres     latest    7fb32a7ac3a9   2 weeks ago   438MB
mysql        latest    edbdd97bf78b   7 weeks ago   859MB
```



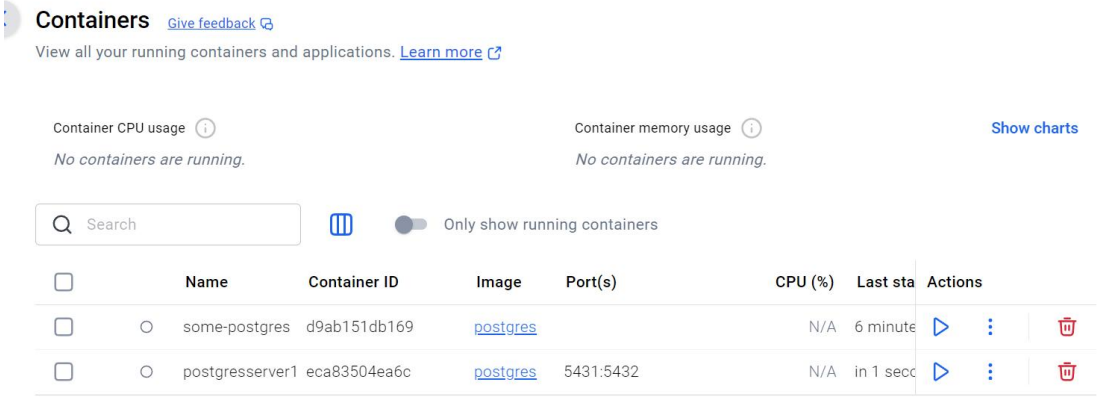
11. Cek container docker

```
C:\Users\ACER>docker container ls
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS
 NAMES
```

12. Coba menjalankan dua container

```
C:\Users\ACER>docker run --name some-postgres -e POSTGRES_PASSWO
RD=123456 -d postgres 6ea025d3159e275c8c3276bbba8c6d7d92e58dd09f
86695afac39c48db3d39aa
d9ab151db169063c83bb8d436d136768a54584f32b665375c897c058ae6a841c
```

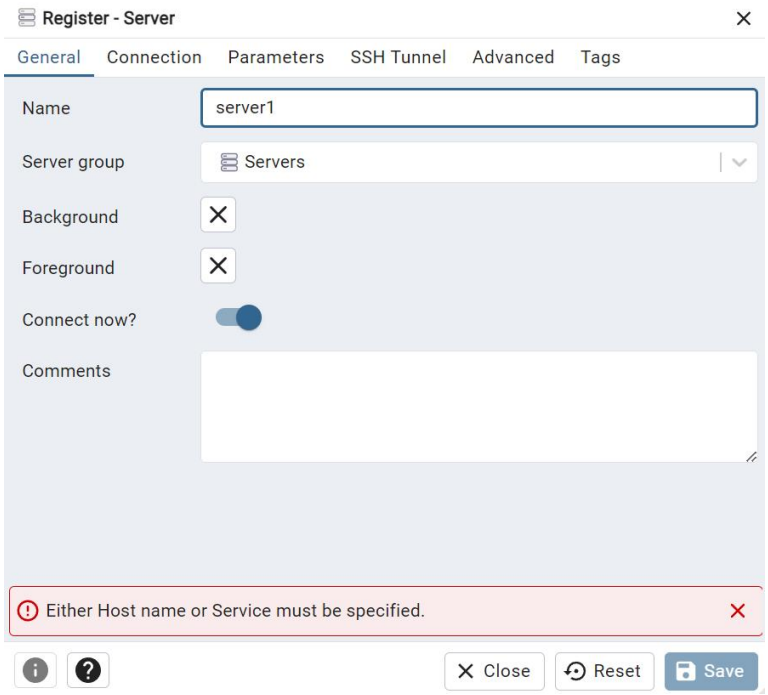
```
C:\Users\ACER>docker run --name postgresserver1 -p 5431:5432 -e
POSTGRES_PASSWORD=123456 -d postgres bc482bbed5d5d0acb170f89b24b
dad7c02157c83c6556703aa9bb03b366d072f
eca83504ea6cbf11e9a5360e4a571e5206a60bcdd3fba66e664e0cf2299533bf
```

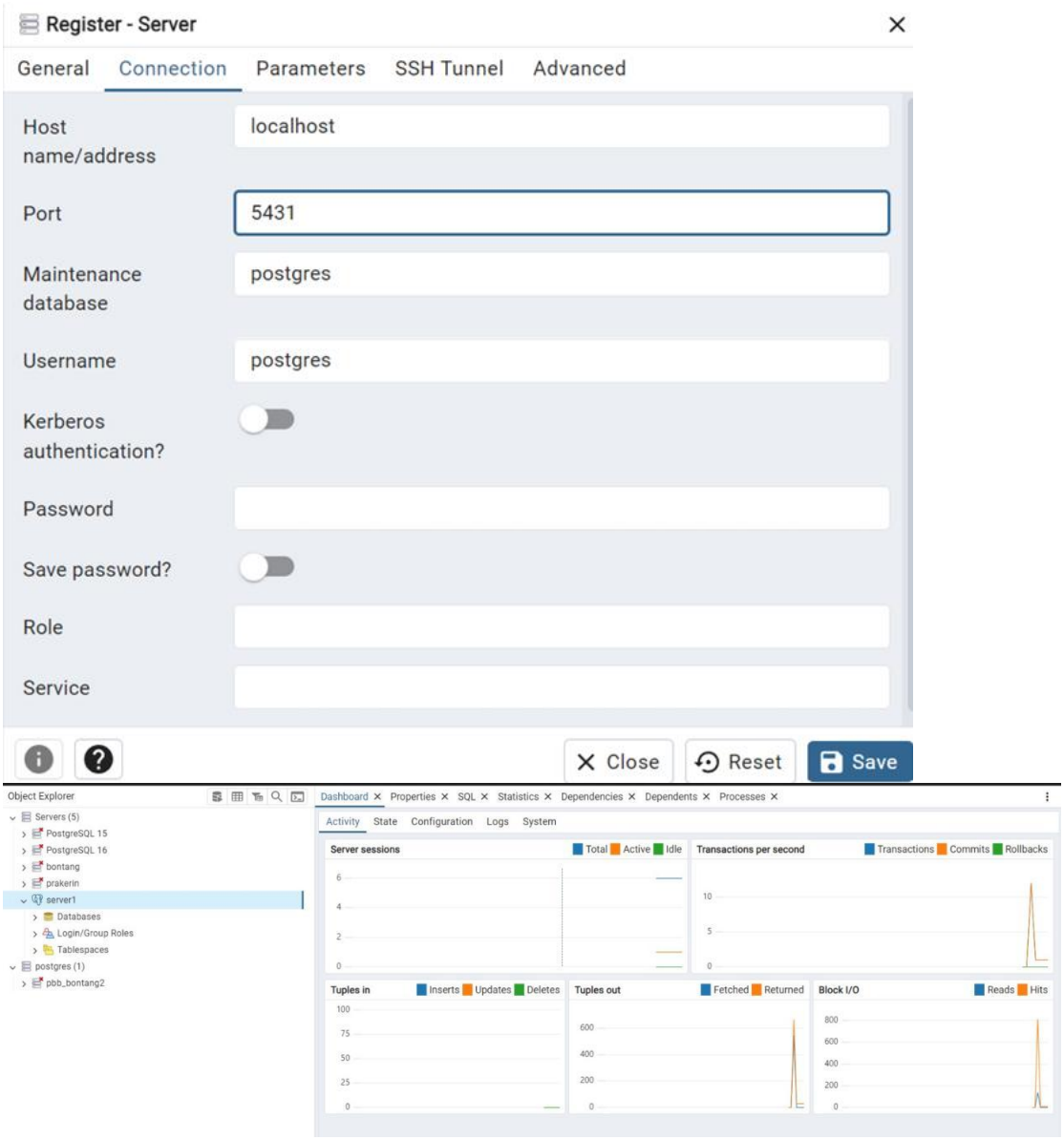


13. Menjalankan ubuntu

```
C:\Users\ACER>docker run -it ubuntu
root@81b57b9aa449:/# ls
bin   dev  home  lib64  mnt  proc  run   srv  tmp  var
boot  etc  lib   media  opt  root  sbin  sys  usr
root@81b57b9aa449:/# pwd
/
root@81b57b9aa449:/# cd
root@81b57b9aa449:~# pwd
/root
root@81b57b9aa449:~#
```

14. Buat server di pgadmin





15. Install httpd

```
C:\Users\ACER>docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
61320b01ae5e: Already exists
be60498bea0a: Pull complete
4f4fb700ef54: Pull complete
8f86928406fd: Pull complete
162ef2c73af1: Pull complete
8dbbd44856ed: Pull complete
Digest: sha256:09cb4b94edaaa796522c545328b62e9a0db60315c7be9f2b4e02204919926405
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
```

16. Run httpd

```
C:\Users\ACER>docker run -d -p 80:80 --name my-apache httpd 8cdf61145d547e6a1f0596f18bd16d9acc56f9a21f0bac54e4bed52c09313dc4
```

17. Cek image kembali

```
C:\Users\ACER>docker image ls
REPOSITORY   TAG       IMAGE ID       CREATED         SIZE
ubuntu       latest    bf16bdcff9c9   12 days ago     78.1MB
postgres     latest    7fb32a7ac3a9   2 weeks ago     438MB
mysql        latest    edbdd97bf78b   8 weeks ago     859MB
httpd        latest    958373fdd7e8   4 months ago    148MB
```

MEMBUAT APLIKASI ANALISIS DATA SEDERHANA

```
[+] Building 12.2s (10/10) FINISHED                                    docker:desktop-linux
 => [internal] load build definition from Dockerfile                                   0.1s
 => => transferring dockerfile: 577B                                                   0.0s
 => [internal] load metadata for docker.io/library/python:3.10-slim                    1.1s
 => [internal] load .dockerignore                                                      0.0s
 => => transferring context: 2B                                                        0.0s
 => [1/5] FROM docker.io/library/python:3.10-slim@sha256:2ee0fb8794bf82af1b2db168ada5  0.0s
 => [internal] load build context                                                      0.0s
 => => transferring context: 95B                                                       0.0s
 => CACHED [2/5] RUN apt-get update && apt-get install -y     build-essential     li  0.0s
 => CACHED [3/5] WORKDIR /app                                                          0.0s
```

```
PS C:\Users\ACER\Documents\analisis_data_app>  docker run -p 8501:8501 analisis-app
>>

Collecting usage statistics. To deactivate, set browser.gatherUsageStats to false.


  You can now view your Streamlit app in your browser.

  URL: http://0.0.0.0:8501
```

Deploy

Aplikasi Analisis Data Sederhana

Upload file CSV

Drag and drop file here
Limit 200MB per file • CSV

Browse files

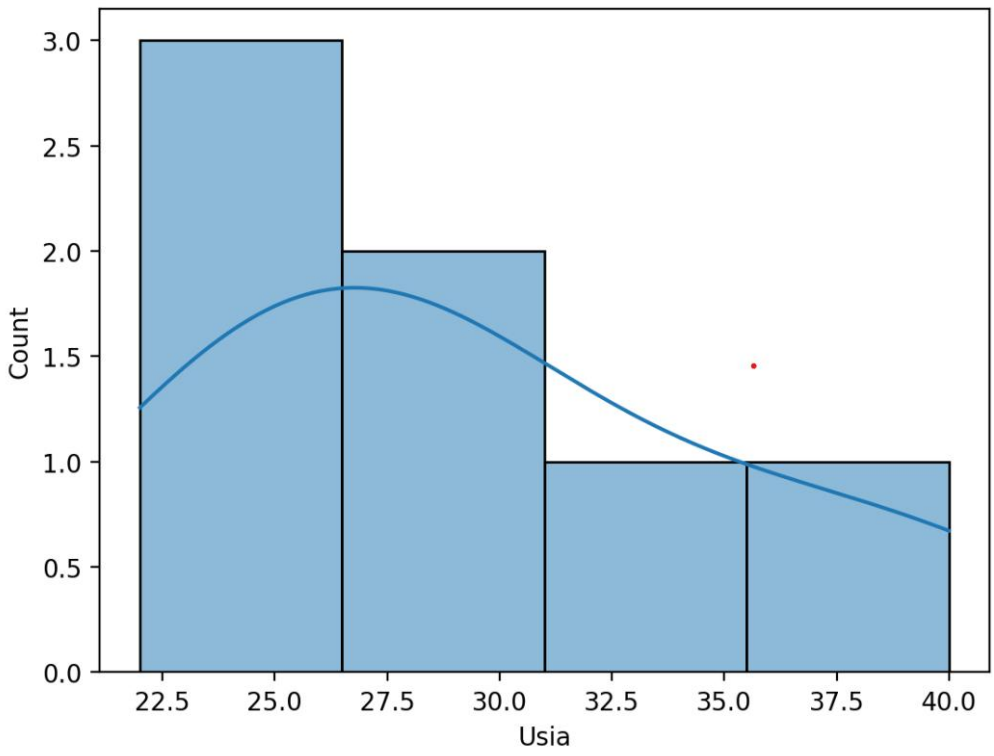
Data Preview

	Nama	Usia	Penghasilan	Berlangganan
0	Andi	25	3500000	Ya
1	Budi	30	4200000	Tidak
2	Citra	28	5000000	Ya
3	Dina	22	3100000	Tidak
4	Eka	35	6000000	Ya

Statistik Deskriptif

	Usia	Penghasilan
count	7	7
mean	29.4286	4585714.2857
std	6.2144	1482597.4633
min	22	3100000
25%	25.5	3400000
50%	28	4200000

Histogram



LINK VIDIO DEMO :
https://drive.google.com/file/d/11beGks5J6FatAShXqcUVSymyrTYkAO0Q/view?usp=sharing