

Nama : Alpian Roymundus Siringo-ringo

NIM : 11211009

Sistem Terdistribusi A

Docker Compose

1. Menginstall Docker Compose

Docker versi terbaru, Docker Compose sudah tersedia secara otomatis di dalam Docker nya, kita bisa check menggunakan “docker compose version” dan untuk menggunakan Docker compose kita bisa menggunakan perintah “docker compose”

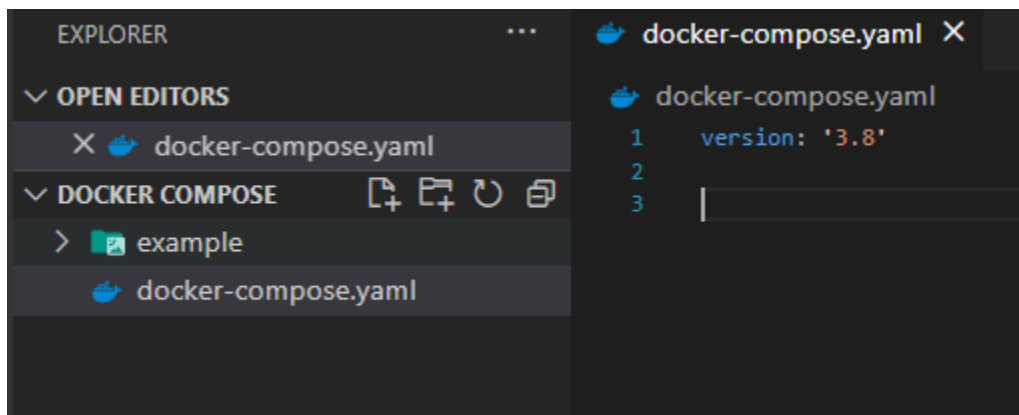
```
PS C:\Users\alpia> docker compose version
Docker Compose version v2.29.2-desktop.2
PS C:\Users\alpia> |
```

2. Configuration File

Docker Compose menyimpan konfigurasi nya dalam bentuk file YAML: <https://yaml.org/>

File YAML mirip JSON, namun lebih sederhana

Biasanya file konfigurasinya disimpan dalam file bernama docker-compose.yaml



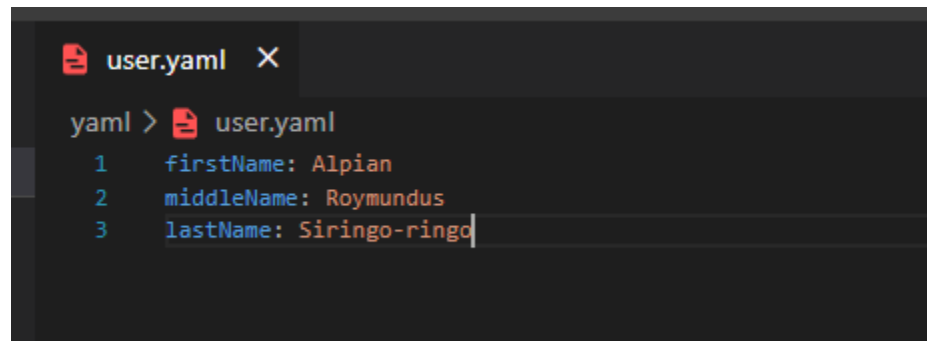
3. Yaml

Yaml adalah sebuah jenis file yang biasa digunakan untuk menyimpan konfigurasi

Yaml mirip seperti JSON, hanya saja tidak menggunakan kurung kurawal

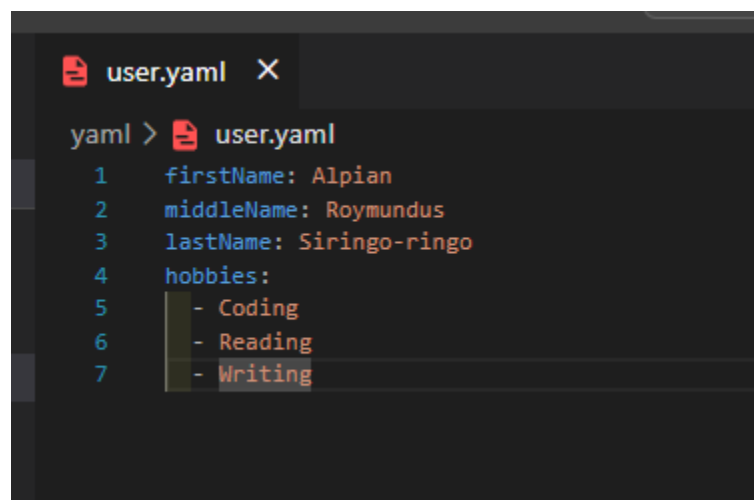
Yaml akan memiliki attribute dan value

a. Yaml Attribute



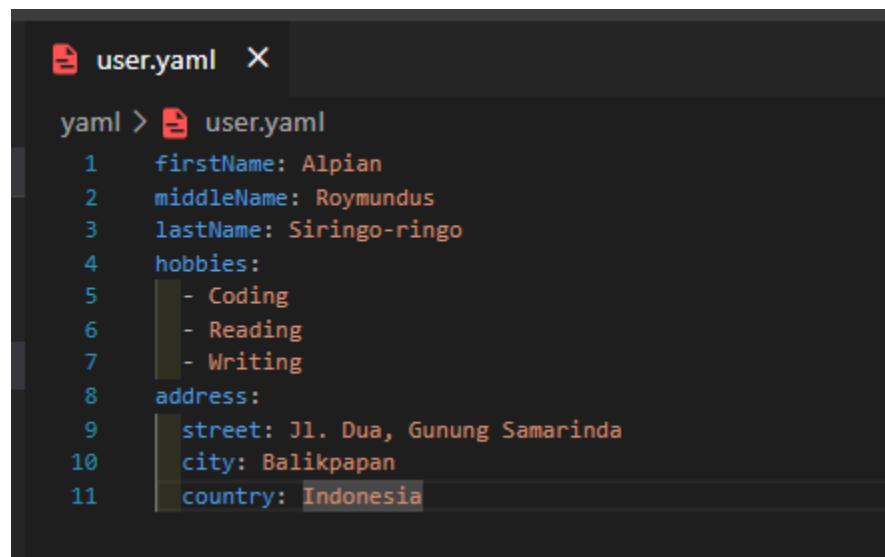
```
user.yaml X
yaml > user.yaml
1  firstName: Alpian
2  middleName: Roymundus
3  lastName: Siringo-ringo
```

b. Yaml Array



```
user.yaml X
yaml > user.yaml
1  firstName: Alpian
2  middleName: Roymundus
3  lastName: Siringo-ringo
4  hobbies:
5    - Coding
6    - Reading
7    - Writing
```

c. Yaml Nested Object



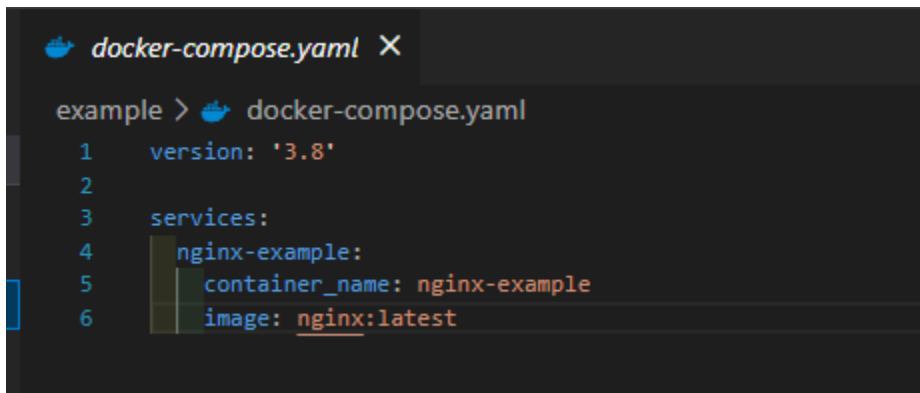
```
user.yaml X
yaml > user.yaml
1  firstName: Alpian
2  middleName: Roymundus
3  lastName: Siringo-ringo
4  hobbies:
5    - Coding
6    - Reading
7    - Writing
8  address:
9    street: Jl. Dua, Gunung Samarinda
10   city: Balikpapan
11   country: Indonesia
```

d. Yaml Array Nested Object

```
user.yaml X
yaml > user.yaml
1  firstName: Alpian
2  middleName: Roymundus
3  lastName: Siringo-ringo
4  hobbies:
5    - Coding
6    - Reading
7    - Writing
8  address:
9    street: Jl. Dua, Gunung Samarinda
10   city: Balikpapan
11   country: Indonesia
12
13  wallet:
14    - type: cash
15      amount: 1000000
16    - type: debit
17      amount: 5000000
18
```

4. Membuat Container

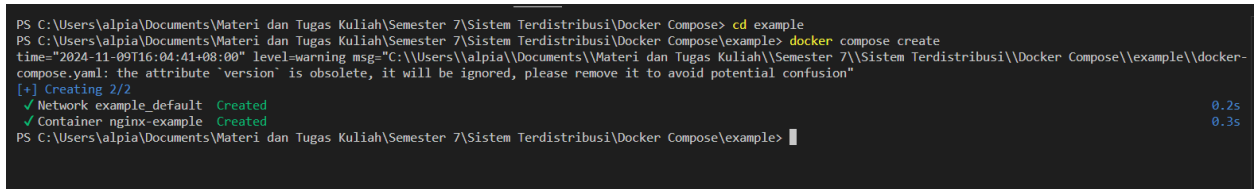
Docker kini memungkinkan pembuatan container secara langsung melalui file konfigurasi `docker-compose.yml`, tanpa perlu menggunakan perintah `docker create`. Dengan menambahkan bagian `services` di dalam file `YAML`, pengguna dapat mendefinisikan container yang ingin dibuat dengan mudah. Pada bagian `services`, pengguna dapat menetapkan nama container menggunakan `container_name` serta menentukan image yang akan digunakan untuk container tersebut. Hal ini menyederhanakan pengaturan dan pengelolaan container dalam satu file konfigurasi, membuatnya lebih terstruktur dan mudah dipelihara.



```
example > docker-compose.yml
1  version: '3.8'
2
3  services:
4    nginx-example:
5      container_name: nginx-example
6      image: nginx:latest
```

Setelah membuat konfigurasi file, Container tidak langsung jadi, kita harus membuatnya dengan menggunakan Docker Compose, yaitu dengan perintah :

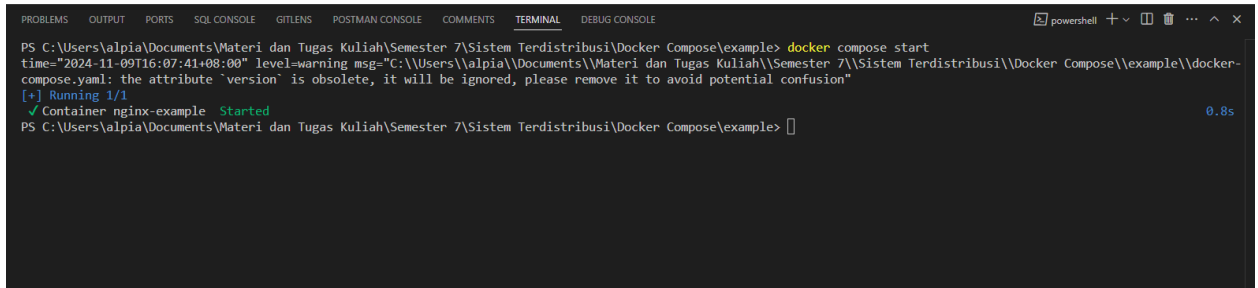
`docker compose create`



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose> cd example
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose create
time="2024-11-09T16:04:41+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
✔ Network example_default Created 0.2s
✔ Container nginx-example Created 0.3s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example>
```

5. Menjalankan Container

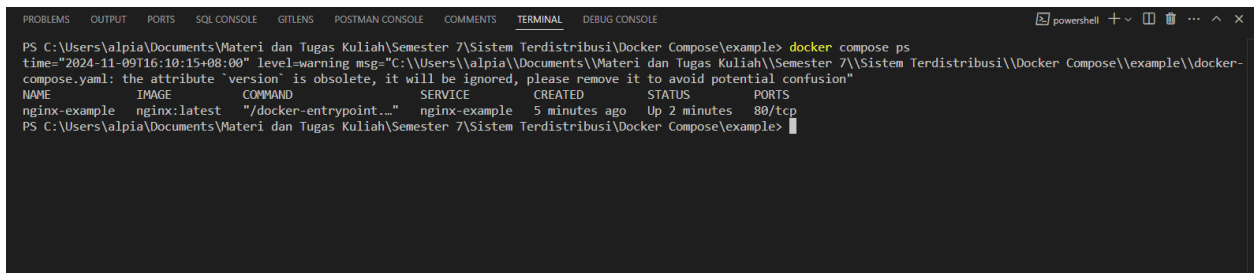
Setelah membuat container, container tersebut tidak akan berjalan secara otomatis. Untuk menjalankannya, Anda harus melakukannya secara manual, baik dengan perintah `docker container start` atau menggunakan Docker Compose. Jika menggunakan Docker Compose, Anda dapat menjalankan container dengan perintah `docker compose start`. Perintah ini memungkinkan Anda untuk memulai semua container yang telah didefinisikan dalam file `docker-compose.yaml` secara efisien.



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose start
time="2024-11-09T16:07:41+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
✔ Container nginx-example Started
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example>
```

6. Melihat Container

Untuk melihat container yang berjalan, biasanya kita menggunakan perintah `docker container ls`. Namun, perintah ini akan menampilkan semua container yang ada, baik yang dibuat secara manual maupun melalui Docker Compose. Jika Anda hanya ingin melihat status container yang didefinisikan dalam file konfigurasi Docker Compose, Anda bisa menggunakan perintah `docker compose ps`. Perintah ini hanya menampilkan container yang terkait dengan konfigurasi di file `docker-compose.yaml`, sehingga memudahkan pemantauan container yang dikelola oleh Docker Compose.



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose ps
time="2024-11-09T16:10:15+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME          IMAGE          COMMAND                  SERVICE    CREATED        STATUS        PORTS
nginx-example  nginx:latest   "/docker-entrypoint..." nginx-example  5 minutes ago  Up 2 minutes  80/tcp
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example>
```

7. Menghentikan Container

Untuk menghentikan Container, kita bisa menggunakan perintah :

`docker compose stop`

Menghentikan Container hanya men-stop Container, tidak akan menghapus Container nya.



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose stop
time="2024-11-09T16:11:33+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Stopping 1/1
  ✓ Container nginx-example Stopped
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example>
```

8. Menghapus Container

Jika Anda sudah tidak memerlukan container yang didefinisikan dalam file konfigurasi Docker Compose, Anda dapat menghapusnya. Penghapusan dapat dilakukan secara manual dengan perintah ``docker container rm``, atau lebih praktis menggunakan Docker Compose. Untuk menghapus container beserta semua network dan volume yang terkait, gunakan perintah ``docker compose down``. Perintah ini secara otomatis akan menghapus semua container, network, dan volume yang digunakan oleh container tersebut, sehingga membantu menjaga lingkungan tetap bersih dan terorganisir.



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose down
time="2024-11-09T16:13:57+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container nginx-example Removed
  ✓ Network example_default Removed
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example>
```

9. Project Name

Seperti yang dijelaskan sebelumnya, saat menggunakan Docker Compose, informasi konfigurasi Docker Compose akan disimpan dalam bentuk proyek. Secara default, nama proyek ini diambil dari nama folder tempat file ``docker-compose.yml`` berada. Untuk melihat daftar proyek yang sedang berjalan, Anda dapat menggunakan perintah ``docker compose ls``. Perintah ini menampilkan semua proyek Docker Compose aktif beserta informasi terkait, memudahkan Anda untuk memantau dan mengelola berbagai proyek

dalam sistem.

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose ls
NAME STATUS CONFIG FILES
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose create
time="2024-11-09T16:16:35+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network example_default Created 0.1s
  ✓ Container nginx-example Created 0.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose start
time="2024-11-09T16:16:40+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\example\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container nginx-example Started 0.5s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose ls
NAME STATUS CONFIG FILES
example running(1) C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example\docker-compose.yaml
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example>
```

10. Service

Dalam konfigurasi Docker Compose, container disimpan dalam konfigurasi bernama services

Kita bisa menambahkan satu atau lebih services dalam konfigurasi file nya.

a. Service

```
services > docker-compose.yaml
1 version: '3.8'
2
3 services:
4   nginx-example:
5     container_name: nginx-example
6     image: nginx:latest
7   mongodb-example:
8     container_name: mongodb-example
9     image: mongo:latest
```

b. Menjalankan Container

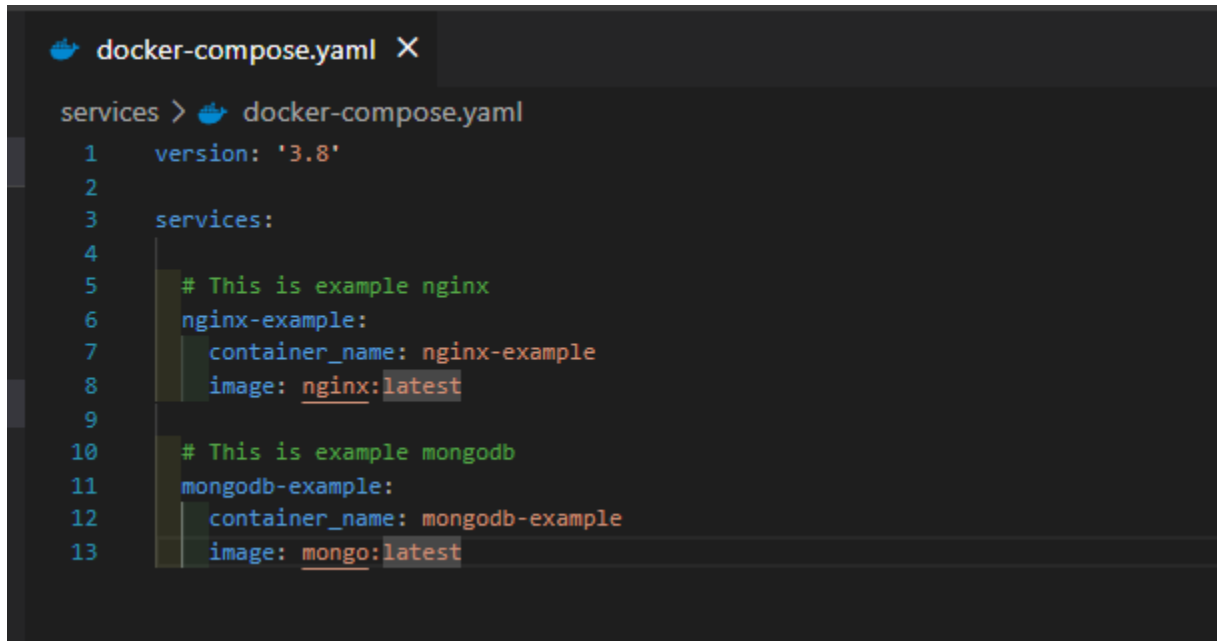
```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\services> docker compose create
time="2024-11-09T16:23:50+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\services\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 3/3
  ✓ Network services_default Created 0.1s
  ✓ Container nginx-example Created 0.1s
  ✓ Container mongodb-example Created 0.2s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\services> docker compose start
time="2024-11-09T16:24:19+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\services\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container mongodb-example Started 0.7s
  ✓ Container nginx-example Started 0.8s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\services> docker compose ps
time="2024-11-09T16:25:32+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\services\\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME IMAGE COMMAND SERVICE CREATED STATUS PORTS
mongodb-example mongo:latest "docker-entrypoint.s..." mongodb-example About a minute ago Up About a minute 27017/tcp
nginx-example nginx:latest "/docker-entrypoint..." nginx-example About a minute ago Up About a minute 80/tcp
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\services>
```

11. Komentar

Salah satu keunggulan menggunakan Yaml dari pada JSON adalah, di Yaml kita bisa menambahkan komentar dengan diawali karakter #

Di JSON kita tidak bisa menambahkan komentar

Komentar secara otomatis akan dihiraukan oleh Docker Compose.

A screenshot of a code editor window titled 'docker-compose.yaml'. The editor shows a YAML configuration for Docker Compose. It includes a 'version' field set to '3.8' and a 'services' section. Under 'services', there are two service definitions: 'nginx-example' and 'mongodb-example'. Each service definition includes a comment line starting with '#', followed by the service name, and then configuration fields for 'container_name' and 'image'. The 'nginx-example' service uses 'nginx:latest' as the image, and the 'mongodb-example' service uses 'mongo:latest'.

```
services > docker-compose.yaml
1  version: '3.8'
2
3  services:
4
5      # This is example nginx
6      nginx-example:
7          container_name: nginx-example
8          image: nginx:latest
9
10     # This is example mongodb
11     mongodb-example:
12         container_name: mongodb-example
13         image: mongo:latest
```


12. Port

Saat membuat Container, kita bisa mengekspose port di Container keluar menggunakan Port Forwarding

Kita juga bisa melakukan hal tersebut di konfigurasi file Docker Compose dengan menggunakan attribute ports

Attribute ports berisi array object port

a. Port

```
docker-compose.yml X

ports > docker-compose.yml

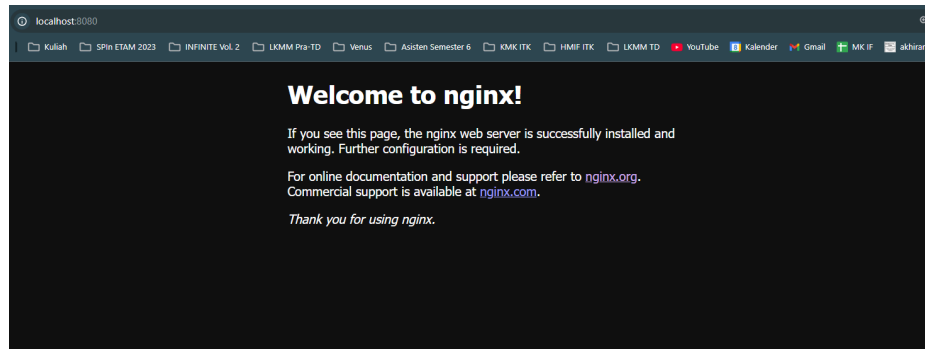
1  version: "3.8"
2
3  services:
4    nginx-port1:
5      image: nginx:latest
6      container_name: nginx-port1
7      ports:
8        - protocol: tcp
9          published: 8080
10         target: 80
11
12    nginx-port2:
13      image: nginx:latest
14      container_name: nginx-port2
15      ports:
16        - "8081:80"
```

b. Menjalankan Container

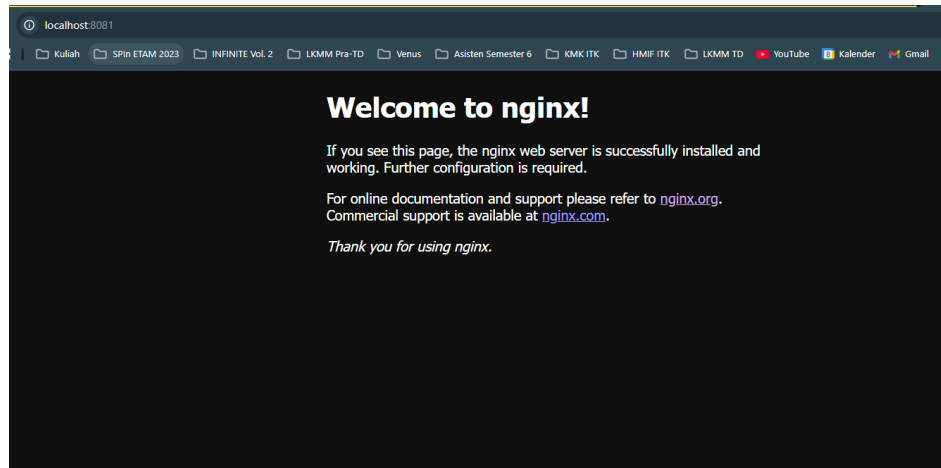
```
PROBLEMS OUTPUT PORTS SQL CONSOLE GIT LENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE

PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\services> cd ..
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose> cd ports
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports> docker compose create
time="2024-11-09T16:35:09+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports\docker-co
mpose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 3/3
  ✓ Network ports default Created 0.1s
  ✓ Container nginx-port2 Created 0.1s
  ✓ Container nginx-port1 Created 0.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports> docker compose start
time="2024-11-09T16:35:15+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports\docker-co
mpose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container nginx-port1 Started 1.1s
  ✓ Container nginx-port2 Started 1.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports> docker compose ls
NAME                STATUS    CONFIG FILES
ports               running(2) C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports\docker-compose.yml
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports> docker compose ps
time="2024-11-09T16:35:49+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports\docker-co
mpose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME                IMAGE             SERVICE    CREATED        STATUS      PORTS
nginx-port1         nginx:latest      "/docker-entrypoint..." nginx-port1  39 seconds ago Up 33 seconds 0.0.0.0:8080->80/tcp
nginx-port2         nginx:latest      "/docker-entrypoint..." nginx-port2  39 seconds ago Up 33 seconds 0.0.0.0:8081->80/tcp
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\ports> █
```

Localhost:8080



Localhost:8081

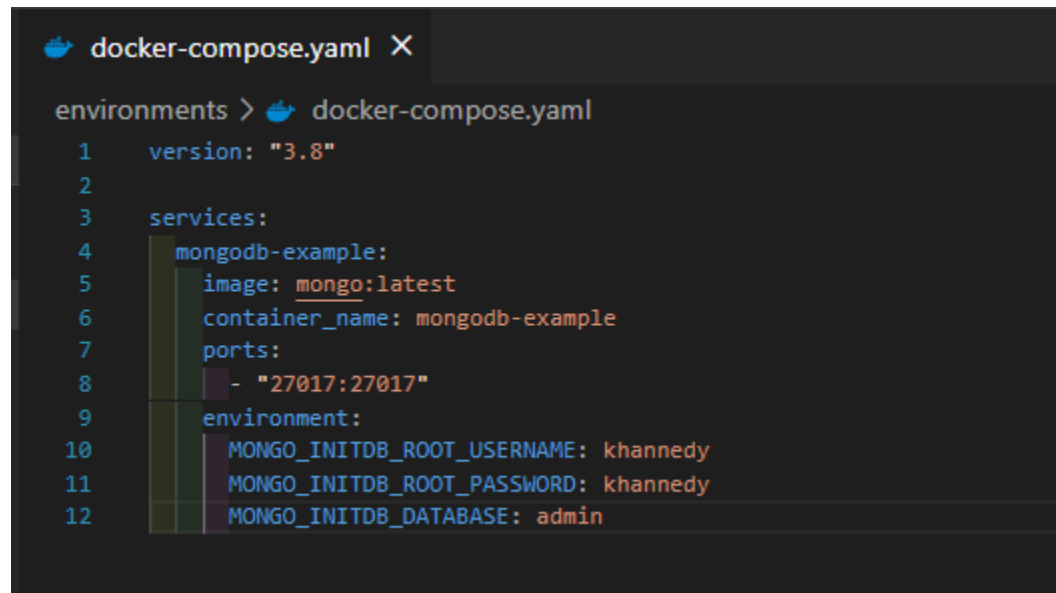


13. Environment Variable

Saat membuat container, kita juga menambahkan environment variable untuk digunakan di dalam container.

Saat menggunakan konfigurasi file Docker Compose, kita bisa menambahkan environment variable dengan menggunakan attribute environment.

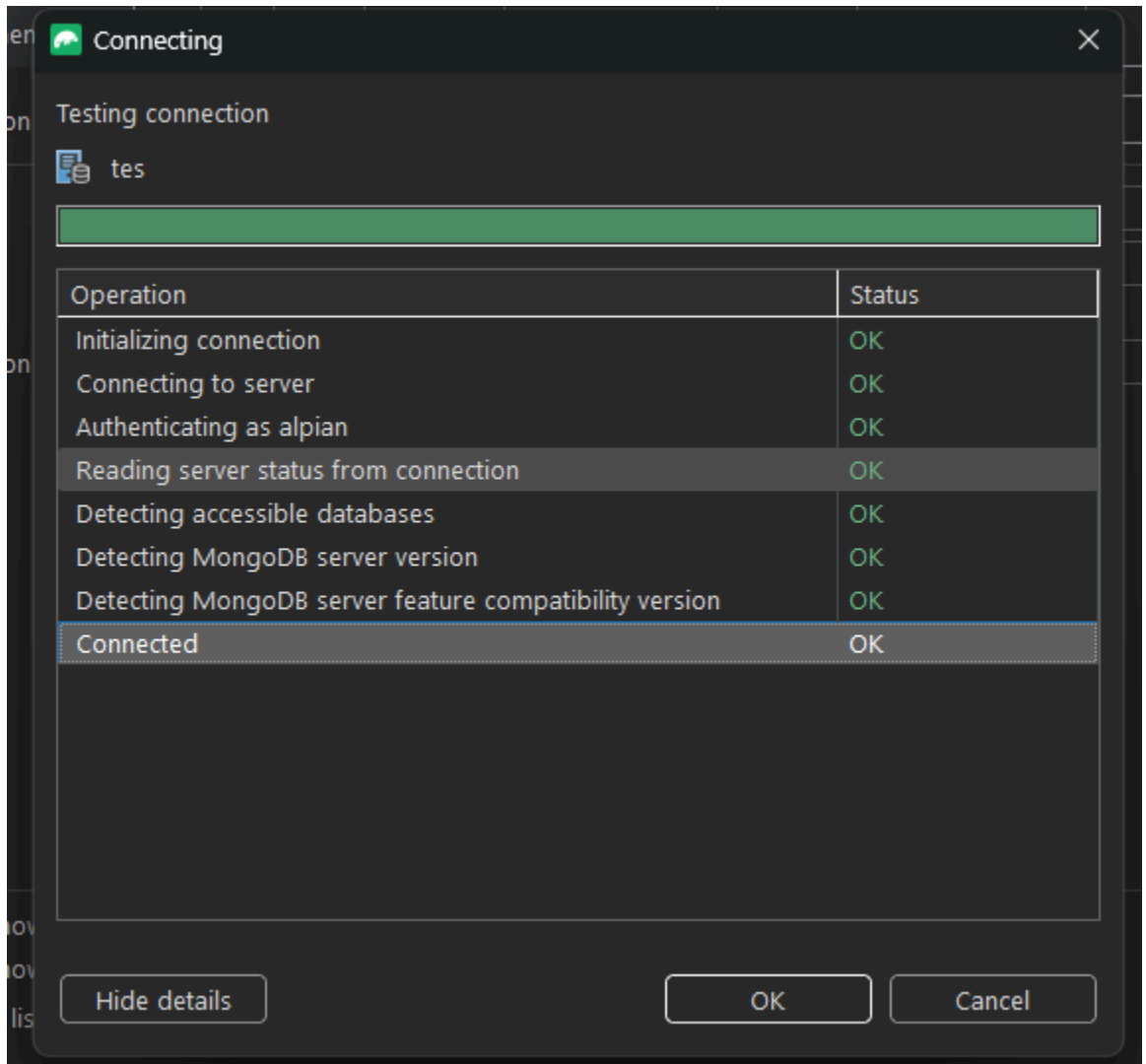
a. Environment Variable



```
docker-compose.yaml X
environments > docker-compose.yaml
1  version: "3.8"
2
3  services:
4    mongodb-example:
5      image: mongo:latest
6      container_name: mongodb-example
7      ports:
8        - "27017:27017"
9      environment:
10       MONGO_INITDB_ROOT_USERNAME: khannedy
11       MONGO_INITDB_ROOT_PASSWORD: khannedy
12       MONGO_INITDB_DATABASE: admin
```

b. Menjalankan Container

```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\environments> docker compose create
time="2024-11-09T16:44:45+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker-compose\\environments\\do
cker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network environments.default Created 0.1s
  ✓ Container mongodb-example Created 0.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\environments> docker compose start
time="2024-11-09T16:44:55+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker-compose\\environments\\do
cker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container mongodb-example Started 0.7s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\environments> |
```

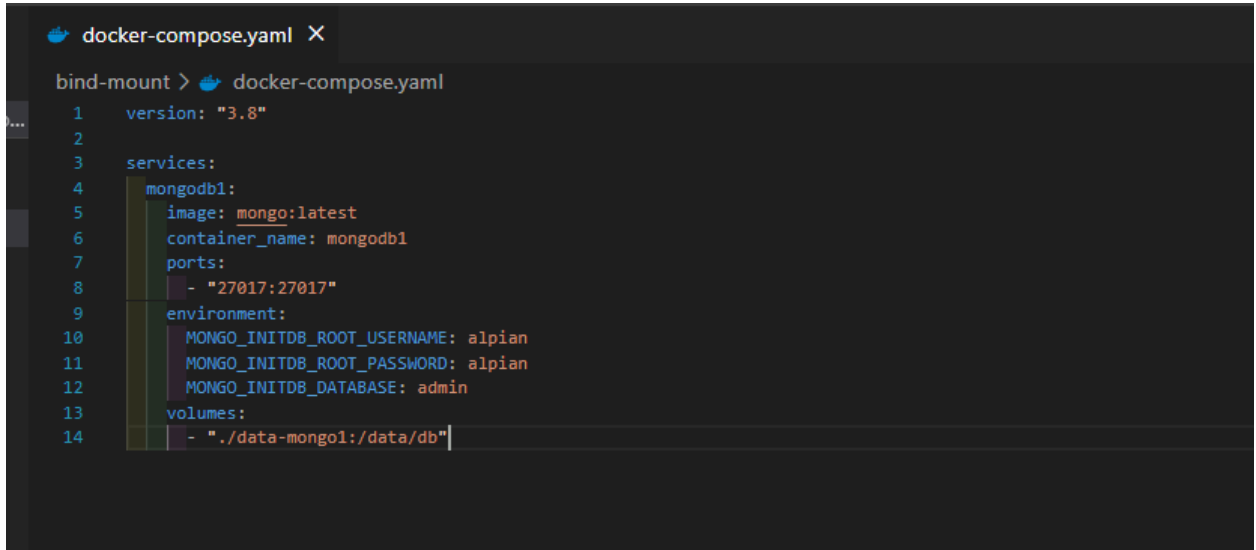


14. Bind Mount

Untuk melakukan bind mount, kita juga bisa lakukan di konfigurasi file Docker Compose

Kita bisa gunakan attribute volumes di services

Kita bisa tambahkan satu atau lebih bind mount jika kita mau.



```
bind-mount > docker-compose.yaml
1  version: "3.8"
2
3  services:
4    mongodb1:
5      image: mongo:latest
6      container_name: mongodb1
7      ports:
8        - "27017:27017"
9      environment:
10       MONGO_INITDB_ROOT_USERNAME: alpian
11       MONGO_INITDB_ROOT_PASSWORD: alpian
12       MONGO_INITDB_DATABASE: admin
13      volumes:
14        - "./data-mongo1:/data/db"
```

Bind Mount Short Syntax.

Untuk Bind Mount, kita bisa gunakan short syntax dan long syntax

Untuk short syntax, kita bisa gunakan nilai SOURCE:TARGET:MODE, dimana SOURCE adalah lokasi di host, dan TARGET adalah lokasi di container

MODE adalah mode bind mount, ro untuk readonly, rw untuk read write (default)

SOURCE bisa menggunakan relative path dengan diawali . (titik), atau absolute path.

```
er-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network bind-mount_default Created 0.1s
  ✓ Container mongodb1 Created 0.2s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\bind-mount> docker compose start
time="2024-11-09T23:04:26+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\bind-mount\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container mongodb1 Started 1.0s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\bind-mount> 
```

DOCKER COMPOSE

bind-mount

data-mongo1

> .mongodb

> diagnostic.data

> journal

_mdb_catalog.wt

collection-0-11021954968786...

collection-2-11021954968786...

collection-4-11021954968786...

collection-7-11021954968786...

index-1-11021954968786799...

index-3-11021954968786799...

index-5-11021954968786799...

index-6-11021954968786799...

index-8-11021954968786799...

index-9-11021954968786799...

🔒 mongod.lock

sizeStorer.wt

storage.bson

WiredTiger

🔒 WiredTiger.lock

WiredTiger.turtle

WiredTiger.wt

WiredTigerHS.wt

docker-compose.yaml

```
2
3 services:
4   mongodb1:
5     image: mongo:latest
6     container_name: mongodb1
7     ports:
8       - "27017:27017"
9     environment:
10       MONGO_INITDB_ROOT_USERNAME: alpian
11       MONGO_INITDB_ROOT_PASSWORD: alpian
12       MONGO_INITDB_DATABASE: admin
13     volumes:
14       - "./data-mongo1:/data/db"
```

PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS PO

```
er-compose.yaml: the attribute `version` is ob
[+] Creating 2/2
  ✓ Network bind-mount_default Created
  ✓ Container mongodb1 Created
PS C:\Users\alpia\Documents\Materi dan Tugas K
time="2024-11-09T23:04:26+08:00" level=warning
```

a. Bind Mount Long Syntax

```
docker-compose.yml X
bind-mount > docker-compose.yml
1  version: "3.8"
2
3  services:
4    mongodb1:
5      image: mongo:latest
6      container_name: mongodb1
7      ports:
8        - "27017:27017"
9      environment:
10       MONGO_INITDB_ROOT_USERNAME: alpian
11       MONGO_INITDB_ROOT_PASSWORD: alpian
12       MONGO_INITDB_DATABASE: admin
13      volumes:
14        - "./data-mongo1:/data/db"
15    mongodb2:
16      image: mongo:latest
17      container_name: mongodb2
18      ports:
19        - "27018:27017"
20      environment:
21       MONGO_INITDB_ROOT_USERNAME: alpian
22       MONGO_INITDB_ROOT_PASSWORD: alpian
23       MONGO_INITDB_DATABASE: admin
24      volumes:
25        - type: bind
26          source: "./data-mongo2"
27          target: "/data/db"
28          read_only: false
```

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\bind-mount> docker compose create
time="2024-11-09T23:08:06+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\bind-mount\\dock
er-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Container mongodb2 Created 0.1s
  ✓ Container mongodb1 Running 0.0s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\bind-mount> docker compose start
time="2024-11-09T23:08:34+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\bind-mount\\dock
er-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container mongodb2 Started 0.6s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\bind-mount> |
```

```
2
3
4 services:
5   mongodb1:
6     image: mongo:latest
7     container_name: mongodb1
8     ports:
9       - "27017:27017"
10    environment:
11      MONGO_INITDB_ROOT_USERNAME: alpian
12      MONGO_INITDB_ROOT_PASSWORD: alpian
13      MONGO_INITDB_DATABASE: admin
14    volumes:
15      - "./data-mongo1:/data/db"
16  mongodb2:
17    image: mongo:latest
18    container_name: mongodb2
19    ports:
20      - "27018:27017"
21    environment:
22      MONGO_INITDB_ROOT_USERNAME: alpian
23      MONGO_INITDB_ROOT_PASSWORD: alpian
24      MONGO_INITDB_DATABASE: admin
25    volumes:
26      - type: bind
27        source: "./data-mongo2"
28        target: "/data/db"
29        read_only: false
```

15. Volume

Docker Compose juga tidak hanya bisa digunakan untuk membuat container, tapi bisa juga digunakan untuk membuat volume

Kita bisa menggunakan attribute volumes pada konfigurasi file.

a. Volume

```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\volumes> docker compose create
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\volumes> |
```

Pada bagian ini tidak membuat apapun, karena untuk docker compos mninmal memerlukan container terlebih dahulu, yang mana sebelumnya kita hanya ada

volumes, tetapi tidak ada apa-apa. Jadi, kita perlu menambahkan container yang menggunakan volumes.

b. Menggunakan volume short syntax

```
volumes > 🐳 docker-compose.yml
1  version: '3.8'
2
3  services:
4    mongodb1:
5      image: mongo:latest
6      container_name: mongodb1
7      ports:
8        - "27017:27017"
9      environment:
10       MONGO_INITDB_ROOT_USERNAME: alpian
11       MONGO_INITDB_ROOT_PASSWORD: alpian
12       MONGO_INITDB_DATABASE: admin
13      volumes:
14        - "mongo-data1:/data/db"
```

c. Menggunakan Volume Long Syntax

```
15  ▼  mongodb2:
16      image: mongo:latest
17      container_name: mongodb2
18  ▼  ports:
19      - "27018:27017"
20  ▼  environment:
21      MONGO_INITDB_ROOT_USERNAME: alpian
22      MONGO_INITDB_ROOT_PASSWORD: alpian
23      MONGO_INITDB_DATABASE: admin
24  ▼  volumes:
25  ▼      - type: volume
26          source: mongo-data2
27          target: "/data/db"
28          read_only: false
29
30
31  ▼  volumes:
32  ▼      mongo-data1:
33          name: mongo-data1
34  ▼      mongo-data2:
35          name: mongo-data2
```

Cek Volume menggunakan “docker volume ls”

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
local 85cbaf193d3ebfb3ce4a3f7b4e87683a8eb57ff087ac54e8f6373d197d0d3258
local 703f4c5af90b0cbb1891068be3e62a68a110f8c0188c9c8951d76573593c4252
local 6088c54b6fe2082aef371f086f72071ff4d3fb3b18bcf064dcff4787bf19be2
local 6643a833ca0d42f757afef3ffe070565b4a2908a89b1896197c0395b1fd5425a
local 59775dae411a4405b38b82129c2db2133e9f4eef37ecd1ad0dd8288979ddf28c
local 859594885fb12797e5041eba6882fe2315dff7907257e2aad3950d988eb2e6c
local a14490428be061574096bec63d6a49fd47232bafedc12c6012e16f44108f4b54
local c9c3f93cffe992465354c91e393ab37f1efaffd650b7dc9c4d35ddc28d68c4f8
local d0cfb959a0601ea1d3007c16f558c619d0c0756b08ae2cec89375ba79ce71ae7
local e0f3cdc2790eb5cdf2aeeccb76fbc32a372a18a73dd22b635ade80c78c0e6841a
local ea610f63a97e2ac607a6e5dcac121ac78089307b899736173834023cfa655873
local edccc8ad69571807ca34c4f37dcd6a0585d2815a2271c809fd7c33ed8f7b9d4
local ff1c507b676f14e4f142adebfe150343e9811ccc9301694a8227c50d4e17af12
local mongo-data1
local mongodata2
local mongodata
```

Terlihat bahwa sudah ada volume untuk mongo-data1 dan mongodata-2.

16. Network

Selain membuat Container dan Volume, kita juga bisa menggunakan Docker Compose untuk membuat Network secara otomatis.

a. Default Network

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> cd ..\example
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose create
time="2024-11-09T23:37:01+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network example_default Created 0.1s
  ✓ Container nginx-example Created 0.2s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker compose start
time="2024-11-09T23:37:33+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example\docker-
compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container nginx-example Started 0.7s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\example> docker container inspect nginx-example
[
  {
    "Id": "f4943888992a8744d99866bb14781da4b8877ef9204aae31d0227415a7857662",
    "Created": "2024-11-09T15:37:01.759160675Z",
    "Path": "/docker-entrypoint.sh",
    "MacAddress": "",
    "Networks": {
      "example_default": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": [
          "nginx-example",
          "nginx-example"
        ],
        "MacAddress": "02:42:ac:13:00:02",
        "DriverOpts": null,
        "NetworkID": "1214b1966c7dc9c59ed683511750148824bfabdd2446944252d078f6ea157ce3",
        "EndpointID": "4129a2ed621a1897bda5b75c4bb5af50e989cc75a9bcfedbad599848abc0f291",
        "Gateway": "172.19.0.1",
        "IPAddress": "172.19.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": ""
      }
    }
  }
]
```

Pada Bagian Network, otomatis akan terkoneksi secara otomatis dengan network example_default.

b. Membuat Network

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\networks> docker compose create
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\networks> 
```

Sama dengan volume, bagian ini tidak membuat apapun, karena untuk docker compos mninmal memerlukan container terlebih dahulu.

c. Menggunakan Network

```
docker-compose.yml X
networks > docker-compose.yml
1  version: "3.8"
2
3  services:
4    mongodb-example:
5      image: mongo:latest
6      container_name: mongodb-example
7      ports:
8        - "27017:27017"
9      environment:
10       MONGO_INITDB_ROOT_USERNAME: alpian
11       MONGO_INITDB_ROOT_PASSWORD: alpian
12       MONGO_INITDB_DATABASE: admin
13      networks:
14        - network_example
15
16  networks:
17    network_example:
18      name: network_example
19      driver: bridge
20
```

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\networks> docker compose create
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\networks> docker compose create
time="2024-11-09T23:46:04+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\networks\\docker
-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
✓ Network network_example Created 0.1s
✓ Container mongodb-example Created 0.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\networks> 
```

Akan membuat Networknya yaitu network_example (sesuai dengan nama yang dibuat), bukan lagi network_default.

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\networks> docker compose start
time="2024-11-09T23:47:25+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\networks\docker
-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 0/1
- Container mongodb-example Starting
Error response from daemon: driver failed programming external connectivity on endpoint mongodb-example (fe9b5dfa714dabb789107d79fa92ea88b3b0785ebabfa88fdd96c95d5a711fd):
Bind for 0.0.0.0:27017 failed: port is already allocated
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\networks> docker container inspect mongodb-example
[
  {
    "Id": "9205611da7e07b553b6a645241d10b6671def8969d9d7b74126aa44879ac244f",
    "Created": "2024-11-09T15:46:05.092265309Z",
    "Path": "docker-entrypoint.sh",
    "Args": [
      "mongod"
    ],
    "State": {
      "Status": "created",
```

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE

    "IPv6Gateway": "",
    "MacAddress": "",
    "Networks": {
      "network_example": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": [
          "mongodb-example",
          "mongodb-example"
        ],
        "MacAddress": "",
        "DriverOpts": null,
        "NetworkID": "c373ac8c7754787eac242c864dd2ab82741e0993aa4c717dbe81d388418a838c",
        "EndpointID": "",
        "Gateway": "",
        "IPAddress": "",
        "IPPrefixLen": 0,
        "IPv6Gateway": "",
```

17. Depends On

Saat membuat file Docker Compose dengan banyak container, sering kali ada container yang membutuhkan container lain untuk berjalan terlebih dahulu, atau dengan kata lain, memerlukan urutan tertentu dalam proses startup. Secara default, Docker Compose menjalankan semua container secara bersamaan tanpa urutan yang pasti. Untuk mengatur urutan ini, kita dapat menggunakan atribut `depends_on`. Dengan `depends_on`, kita dapat menentukan bahwa sebuah container hanya akan berjalan jika container lain telah berjalan terlebih dahulu. Atribut ini memungkinkan kita mencantumkan satu atau lebih container lain yang diperlukan sebagai dependensi, memastikan container berjalan dalam urutan yang dibutuhkan.

```
docker-compose.yml X
depends-on > docker-compose.yml
1  version: "3.8"
2
3  services:
4
5      mongodb-example:
6          image: mongo:latest
7          container_name: mongodb-example
8          ports:
9              - "27017:27017"
10         environment:
11             MONGO_INITDB_ROOT_USERNAME: alpian
12             MONGO_INITDB_ROOT_PASSWORD: alpian
13             MONGO_INITDB_DATABASE: admin
14         networks:
15             - network_example
16
17         mongodb-express-example:
18             image: mongo-express:latest
19             container_name: mongodb-express-example
20             ports:
21                 - "8081:8081"
22             environment:
23                 ME_CONFIG_MONGODB_ADMINUSERNAME: alpian
24                 ME_CONFIG_MONGODB_ADMINPASSWORD: alpian
25                 ME_CONFIG_MONGODB_SERVER: mongodb-example
26             networks:
27                 - network_example
28             depends_on:
29                 - mongodb-example
30
31     networks:
32         network_example:
33             name: network_example
34             driver: bridge
```

```
time="2024-11-09T23:49:09+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\networks\\docker
PS C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\networks> cd ..\\depends-on
PS C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\depends-on> docker compose create
time="2024-11-09T23:52:51+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\depends-on\\dock
er-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 3/3
  ✓ Network network_example Created 0.1s
  ✓ Container mongodb-example Created 0.1s
  ✓ Container mongodb-express-example Created 0.1s
PS C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\depends-on> docker compose start
time="2024-11-09T23:53:01+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\depends-on\\dock
er-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 0/1
  - Container mongodb-example Starting 0.2s
Error response from daemon: driver failed programming external connectivity on endpoint mongodb-example (f5e9b5714f65282a3639ad51d2dd0fd93129f841449a195135b47a89e693d453):
Bind for 0.0.0.0:27017 failed: port is already allocated
```

18. Restart

Secara default, saat sebuah container mati, Docker tidak akan menjalankannya lagi, sehingga kita harus memulainya secara manual. Untuk memastikan container selalu berjalan, kita dapat menambahkan atribut `restart` di konfigurasi Docker Compose, dengan beberapa opsi: `no` (tidak pernah restart, nilai default), `always` (selalu restart jika container berhenti, kecuali dihentikan secara manual; container akan restart saat Docker di-restart), `on-failure` (restart hanya jika terjadi error yang menyebabkan container exit dengan kode non-zero), dan `unless-stopped` (selalu restart container, kecuali dihentikan secara manual). Pengaturan ini membantu menjaga container tetap aktif atau me-restart otomatis saat terjadi masalah.

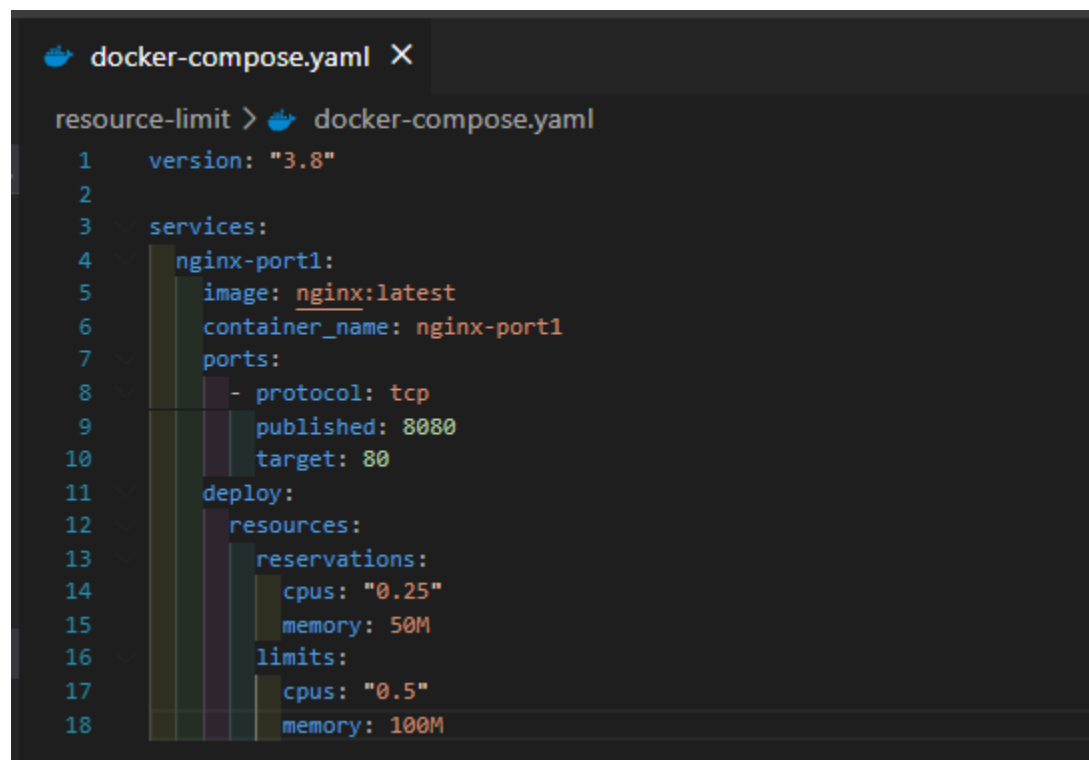
```
docker-compose.yaml X
depends-on > docker-compose.yaml
1  version: "3.8"
2
3  services:
4
5    mongodb-example:
6      image: mongo:latest
7      container_name: mongodb-example
8      ports:
9        - "27017:27017"
10     environment:
11       MONGO_INITDB_ROOT_USERNAME: alpian
12       MONGO_INITDB_ROOT_PASSWORD: alpian
13       MONGO_INITDB_DATABASE: admin
14     networks:
15       - network_example
16
17     mongodb-express-example:
18       image: mongo-express:latest
19       container_name: mongodb-express-example
20       restart: always
21     ports:
22       - "8081:8081"
23     environment:
24       ME_CONFIG_MONGODB_ADMINUSERNAME: alpian
25       ME_CONFIG_MONGODB_ADMINPASSWORD: alpian
26       ME_CONFIG_MONGODB_SERVER: mongodb-example
27     networks:
28       - network_example
29     depends_on:
30       - mongodb-example
31
32   networks:
33     network_example:
34       name: network_example
35       driver: bridge
```

```
PROBLEMS  OUTPUT  PORTS  SQL CONSOLE  GITLENS  POSTMAN CONSOLE  COMMENTS  TERMINAL  DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\depends-on> docker compose start
[+] Running 2/2
  ✓ Container mongodb-example      Started                                0.6s
  ✓ Container mongodb-express-example Started                                0.5s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\depends-on> docker compose ls
NAME                STATUS    CONFIG FILES
depends-on            running(2) C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\depends-on\docker-compose.yaml
volumes              running(1) C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\volumes\docker-compose.yaml
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\depends-on>
```

19. Resource Limit

Kita dapat menggunakan file konfigurasi Docker Compose untuk mengatur batasan sumber daya (resource limit) untuk CPU dan memori dari setiap container yang dibuat. Hal ini dapat dilakukan dengan menambahkan atribut `deploy` dan di dalamnya menggunakan atribut `resources`. Di dalam `resources`, kita dapat menentukan dua hal penting: `reservations` dan `limits`. Atribut `reservations` digunakan untuk memastikan bahwa sejumlah sumber daya tertentu dijamin dapat digunakan oleh container, sementara `limits` menetapkan batas maksimal sumber daya yang dapat digunakan oleh container. Namun, perlu diingat bahwa batas ini tidak menjamin eksklusivitas, karena sumber daya ini bisa saja diperebutkan dengan container lain jika ada persaingan dalam penggunaan sumber daya.

a. Resource Limit

A screenshot of a code editor window titled 'docker-compose.yaml'. The editor shows a YAML configuration for a service named 'nginx-port1'. The configuration includes the Docker Compose version '3.8', the service name, the image 'nginx:latest', the container name 'nginx-port1', and port mapping from 8080 to 80. Under the 'deploy' section, the 'resources' are defined with 'reservations' for 0.25 CPUs and 50M memory, and 'limits' for 0.5 CPUs and 100M memory.

```
resource-limit > docker-compose.yaml
1  version: "3.8"
2
3  services:
4    nginx-port1:
5      image: nginx:latest
6      container_name: nginx-port1
7      ports:
8        - protocol: tcp
9          published: 8080
10         target: 80
11      deploy:
12        resources:
13          reservations:
14            cpus: "0.25"
15            memory: 50M
16          limits:
17            cpus: "0.5"
18            memory: 100M
```

b. Docker container stats

Jalankan terlebih dahulu.

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\resource-limit> docker compose create
time="2024-11-10T07:51:46+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\resource-limit\
docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network resource-limit_default Created 0.2s
  ✓ Container nginx-port1 Created 0.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\resource-limit> docker compose start
time="2024-11-10T07:51:55+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\resource-limit\
docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container nginx-port1 Started 0.8s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker-compose\resource-limit> |
```

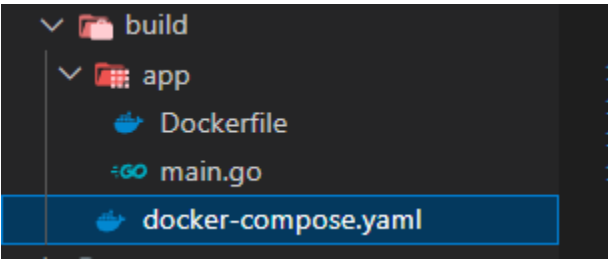
Hasil cek menggunakan “docker container stats”

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
CONTAINER ID NAME CPU % MEM USAGE / LIMIT MEM % NET I/O BLOCK I/O PIDS
d4bdeab6e0a5 nginx-port1 0.00% 13.02MiB / 100MiB 13.02% 1.57kB / 0B 0B / 0B 13
9ff83ba6550f mongodb2 0.74% 131.9MiB / 7.439GiB 1.73% 2.16kB / 291B 0B / 0B 43
|
```

20. Dockerfile

a. Struktur Folder

Membuat folder dengan struktur seperti ini.



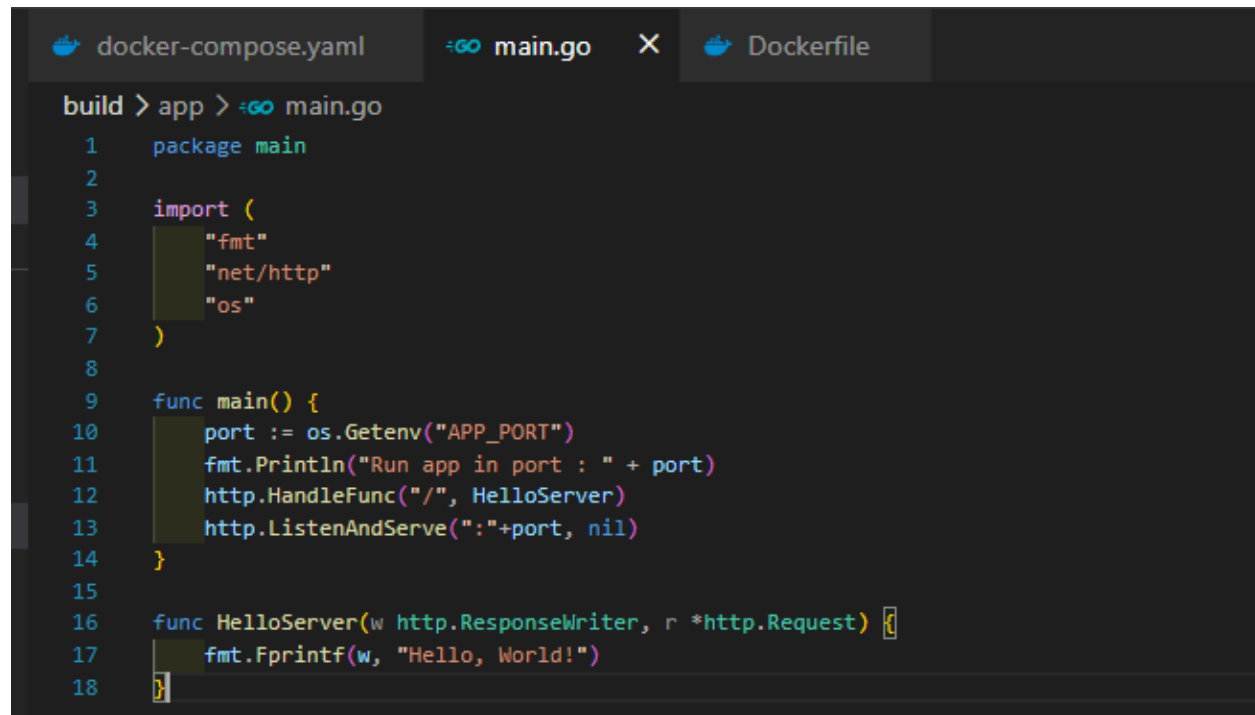
Isi dari docker-compose.yaml


```
docker-compose.yaml X main.go Dockerfile
build > docker-compose.yaml
1  version: "3.8"
2
3  services:
4    app:
5      container_name: app
6      build:
7        context: "./app"
8        dockerfile: Dockerfile
9      image: "app-golang:1.0.0"
10     environment:
11       - "APP_PORT=8080"
12     ports:
13       - "8080:8080"
```

Isi dari app/Dockerfile

```
docker-compose.yaml X main.go Dockerfile X
build > app > Dockerfile > ...
1
2  FROM golang:1.18-alpine
3
4  ENV APP_PORT=8080
5
6  RUN mkdir app
7  COPY main.go app
8
9  EXPOSE ${APP_PORT}
10
11 CMD go run app/main.go
```

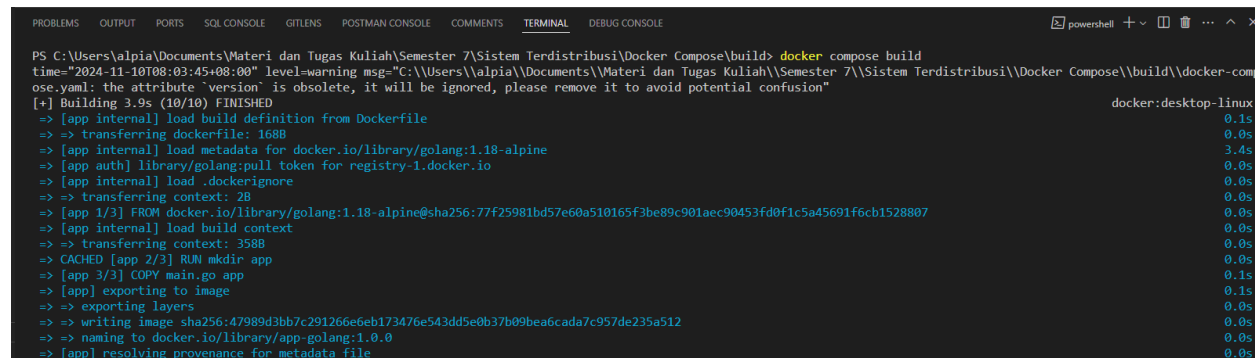
Isi dari app/main.go



```
build > app > :GO main.go
1  package main
2
3  import (
4      "fmt"
5      "net/http"
6      "os"
7  )
8
9  func main() {
10     port := os.Getenv("APP_PORT")
11     fmt.Println("Run app in port : " + port)
12     http.HandleFunc("/", HelloServer)
13     http.ListenAndServe(":"+port, nil)
14 }
15
16 func HelloServer(w http.ResponseWriter, r *http.Request) {
17     fmt.Fprintf(w, "Hello, World!")
18 }
```

b. Build

Ketika kita menggunakan perintah `docker compose start`, Docker Compose akan secara otomatis melakukan build terlebih dahulu jika image yang diperlukan belum terbuat. Namun, jika kita hanya ingin melakukan build image saja tanpa membuat container, kita bisa menggunakan perintah `docker compose build`. Perintah ini hanya akan membangun image sesuai dengan konfigurasi di file `docker-compose.yaml` tanpa menjalankan container, yang berguna ketika kita ingin memperbarui atau membangun image terlebih dahulu sebelum memulai container.



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\build> docker compose build
time="2024-11-10T08:03:45+08:00" level=warning msg="C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\build\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Building 3.9s (40/40) FINISHED
-> [app internal] load build definition from Dockerfile
-> [app internal] load metadata for docker.io/library/golang:1.18-alpine
-> [app auth] library/golang:pull token for registry-1.docker.io
-> [app internal] load .dockerignore
-> [app internal] transfer context: 2B
-> [app 1/3] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
-> [app internal] load build context
-> [app internal] transfer context: 358B
-> CACHED [app 2/3] RUN mkdir app
-> [app 3/3] COPY main.go app
-> [app] exporting to image
-> [app] exporting layers
-> [app] writing image sha256:47989d3bb7c291266e6eb173476e543dd5e0b37b09bea6cada7c957de235a512
-> [app] naming to docker.io/library/app-golang:1.0.0
-> [app] resolving provenance for metadata file
```

Hasil cek menggunakan “docker image ls”

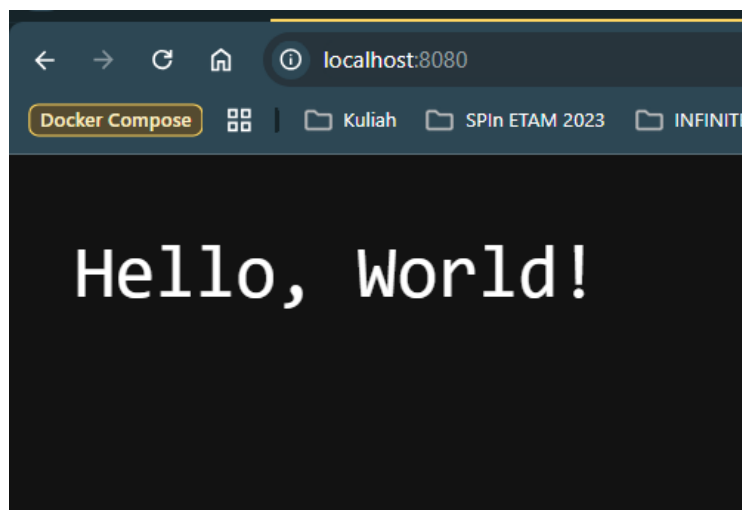
```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker image ls
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
app-golang	1.0.0	47989d3bb7c2	19 seconds ago	330MB
secondary-db	latest	fbda7dea498c	7 days ago	419MB
primary-db	latest	873b127ed483	7 days ago	419MB
roymunduss/multi	latest	980d47849356	3 weeks ago	14.1MB
roymunduss/entrypoint	latest	eb7a0da61e66	3 weeks ago	330MB
roymunduss/health	latest	3bc4d36018bf	3 weeks ago	332MB
roymunduss/arg	latest	743b3d023dcb	3 weeks ago	330MB
roymunduss/user	latest	d4ab9cac7b44	3 weeks ago	330MB
roymunduss/workdir	latest	4a0b1609940c	3 weeks ago	330MB
roymunduss/volume	latest	003bc7a30005	3 weeks ago	330MB
roymunduss/env	latest	5d46f4b0ed82	3 weeks ago	330MB
roymunduss/expose	latest	899acffcb42e	3 weeks ago	330MB
roymunduss/ignore	latest	9c3a40eccb35	3 weeks ago	7.8MB
roymunduss/copy	latest	89fe45c3d723	3 weeks ago	7.8MB
roymunduss/add	latest	b9587e02ca46	3 weeks ago	7.8MB
roymunduss/run	latest	c009f86465e5	3 weeks ago	7.8MB
roymunduss/command	latest	6e2f1bf742bc	3 weeks ago	7.8MB

```

PROBLEMS OUTPUT PORTS SQL CONSOLE GIT LENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker compose create
[+] Creating 2/2
✓ Network build default Created
✓ Container app Created
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker compose start
[+] Running 0/1
- Container app Starting
Error response from daemon: driver failed programming external connectivity on endpoint app (d6cca91083fa7045830d5131c4f4d5ce3626f28b16c824f3dae4ca634cb599d3): Bind for 0.0.0.0:8080 failed: port is already allocated
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker container ls
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
d4bdeab6e0a5 nginx:latest "/docker-entrypoint..." 16 minutes ago Up 16 minutes 0.0.0.0:8080->80/tcp nginx-port1
9ff83ba6550f mongo:latest "docker-entrypoint.s..." 9 hours ago Up 9 hours 0.0.0.0:27018->27017/tcp mongodb2
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker stop d4bdeab6e0a5
d4bdeab6e0a5
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker compose start
[+] Running 1/1
✓ Container app Started
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build> docker compose ps
NAME IMAGE COMMAND SERVICE CREATED STATUS PORTS
app app-golang:1.0.0 "/bin/sh -c 'go run ..." app About a minute ago Up 12 seconds 0.0.0.0:8080->8080/tcp
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\build>

```



c. Menghapus Image

```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docke Compose\build> docker compose down
[+] Running 2/2
 ✓ Container app Removed
 ✓ Network build_default Removed
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docke Compose\build> docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
app-golang 1.0.0 47989d3bb7c2 20 minutes ago 330MB
secondary-db latest fbda7dea498c 7 days ago 419MB
primary-db latest 873b127ed483 7 days ago 419MB
roymunduss/multi latest 980d47849356 3 weeks ago 14.1MB
roymunduss/entrypoint latest eb7a0da61e66 3 weeks ago 330MB
```

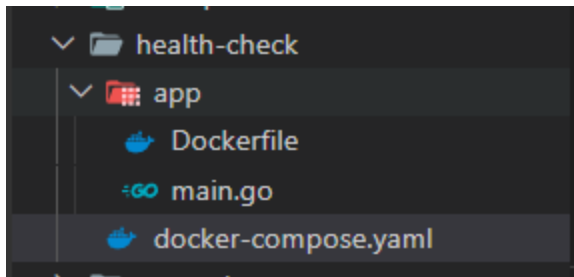
Untuk menghapus image, kita harus menghapus manual dengan menuliskan nama imagenya, seperti ini:

```
docker/getting-started latest 3e4394fbb72f 22 months ago 47MB
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docke Compose\build> docker image rm app-golang:1.0.0
Untagged: app-golang:1.0.0
Deleted: sha256:47989d3bb7c291266e6eb173476e543dd5e0b37b09bea6cada7c957de235a512
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docke Compose\build> docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
secondary-db latest fbda7dea498c 7 days ago 419MB
primary-db latest 873b127ed483 7 days ago 419MB
roymunduss/multi latest 980d47849356 3 weeks ago 14.1MB
roymunduss/entrypoint latest eb7a0da61e66 3 weeks ago 330MB
roymunduss/health latest 3bc4d36018bf 3 weeks ago 332MB
roymunduss/arg latest 743b3d023dcb 3 weeks ago 330MB
roymunduss/user latest d4ab9cac7b44 3 weeks ago 330MB
roymunduss/workdir latest 4a0b1609940c 3 weeks ago 330MB
roymunduss/volume latest 003bc7a30005 3 weeks ago 330MB
roymunduss/env latest 5d46f4b0ed82 3 weeks ago 330MB
roymunduss/expose latest 899acffcb42e 3 weeks ago 330MB
roymunduss/ignore latest 9c3a40eccb35 3 weeks ago 7.8MB
roymunduss/copy latest 89fe45c3d723 3 weeks ago 7.8MB
roymunduss/add latest b9587e02ca46 3 weeks ago 7.8MB
roymunduss/label latest a391ac87bce5 3 weeks ago 7.8MB
roymunduss/command latest 6e2f1b5742bc 3 weeks ago 7.8MB
```

21. Health Check

Kita pernah membahas tentang **Container Health Check** pada materi Dockerfile. Secara default, container yang dibuat—baik secara manual maupun menggunakan Docker Compose—akan selalu menggunakan health check yang didefinisikan di Dockerfile. Namun, jika kita ingin mengubah health check tersebut, hal itu bisa dilakukan. Kita dapat mengonfigurasi health check baru di file `docker-compose.yaml` pada atribut `healthcheck` di bagian `services`. Dengan menambahkan pengaturan health check di Docker Compose, kita dapat menyesuaikan bagaimana Docker memeriksa kesehatan container, seperti menentukan interval, timeout, dan perintah yang digunakan untuk memeriksa status container.

Buat struktur file seperti ini:



Isi dari docker-compose.yaml

```
health-check > docker-compose.yaml
1  version: "3.8"
2
3  services:
4    app:
5      container_name: app
6      build:
7        context: "./app"
8        dockerfile: Dockerfile
9      image: "app-golang:1.0.0"
10     environment:
11       - "APP_PORT=8080"
12     ports:
13       - "8080:8080"
14     healthcheck:
15       test: ["CMD", "curl", "-f", "http://localhost:8080/health"]
16       interval: 5s
17       timeout: 5s
18       retries: 3
19       start_period: 5s
```

Isi dari app/main.go

```
health-check > app > main.go
1 package main
2
3 import (
4     "fmt"
5     "net/http"
6 )
7
8 var counter = 0
9
10 func main() {
11     http.HandleFunc("/", HelloServer)
12     http.HandleFunc("/health", HealthCheck)
13
14     http.ListenAndServe(":8080", nil)
15 }
16
17 func HealthCheck(w http.ResponseWriter, r *http.Request) {
18     counter = counter + 1
19     if counter > 5 {
20         w.WriteHeader(500)
21         fmt.Fprintf(w, "KO")
22     } else {
23         fmt.Fprintf(w, "OK")
24     }
25 }
26
27 func HelloServer(w http.ResponseWriter, r *http.Request) {
28     fmt.Fprintf(w, "Hello, World!")
29 }
```

Isi dari app/Dockerfile

```
health-check > app > Dockerfile > ...
1 FROM golang:1.18-alpine
2
3 RUN apk --no-cache add curl
4 RUN mkdir app
5
6 COPY main.go app
7
8 EXPOSE 8080
9
10 # HEALTHCHECK --interval=5s --start-period=5s CMD curl -f http://localhost:8080/health
11
12 CMD go run app/main.go
```

Proses Build, Create dan Start.

```

PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker compose build
time="2024-11-10T08:36:43+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker compose\\health-check\\dock
er-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Building 3.3s (11/11) FINISHED
=> [app internal] load build definition from Dockerfile
=> => transferring dockerfile: 259B
=> [app internal] load metadata for docker.io/library/golang:1.18-alpine
=> [app auth] library/golang:pull token for registry-1.docker.io
=> [app internal] load .dockerignore
=> => transferring context: 2B
=> [app 1/4] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
=> [app internal] load build context
=> => transferring context: 531B
=> CACHED [app 2/4] RUN apk --no-cache add curl
=> CACHED [app 3/4] RUN mkdir app
=> CACHED [app 4/4] COPY main.go app
=> [app] exporting to image
=> => exporting layers
=> => writing image sha256:6d0168c443a963bf59c536a0e130c42a4c8a7a87396a389a02898c74f3a3aed4
=> => naming to docker.io/library/app-golang:1.0.0
=> [app] resolving provenance for metadata file
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker compose create
time="2024-11-10T08:36:58+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker compose\\health-check\\dock
er-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/1
✔ Network health-check_default Created
✔ Container app Created
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker compose start
time="2024-11-10T08:37:03+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker compose\\health-check\\dock
er-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
✔ Container app Started

```

Health-check.

```

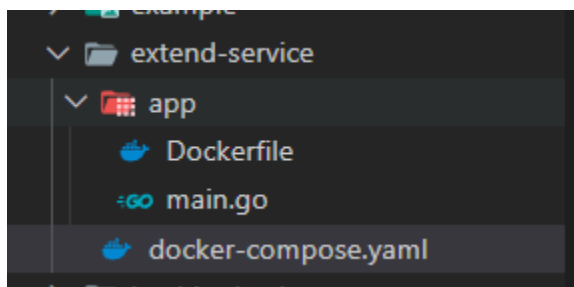
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker compose ps
time="2024-11-10T08:37:15+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker compose\\health-check\\dock
er-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME          IMAGE          COMMAND                  SERVICE    CREATED      STATUS        PORTS
app           app-golang:1.0.0 "/bin/sh -c 'go run _"  app        16 seconds ago Up 12 seconds (healthy) 0.0.0.0:8080->8080/tcp
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker container ls
CONTAINER ID   IMAGE          COMMAND                  CREATED      STATUS        PORTS        NAMES
d2fd745b0a18   app-golang:1.0.0 "/bin/sh -c 'go run _"  34 seconds ago Up 30 seconds (healthy) 0.0.0.0:8080->8080/tcp app
9ff83ba6550f   mongo:latest  "docker-entrypoint.s..." 9 hours ago  Up 9 hours    0.0.0.0:27018->27017/tcp mongodb2
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker container ls
CONTAINER ID   IMAGE          COMMAND                  CREATED      STATUS        PORTS        NAMES
d2fd745b0a18   app-golang:1.0.0 "/bin/sh -c 'go run _"  54 seconds ago Up 50 seconds (unhealthy) 0.0.0.0:8080->8080/tcp app
9ff83ba6550f   mongo:latest  "docker-entrypoint.s..." 9 hours ago  Up 9 hours    0.0.0.0:27018->27017/tcp mongodb2
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker compose down
time="2024-11-10T08:38:14+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\docker compose\\health-check\\dock
er-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
✔ Container app Removed
✔ Network health-check_default Removed
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check> docker image rm app-golang:1.0.0
Untagged: app-golang:1.0.0
Deleted: sha256:6d0168c443a963bf59c536a0e130c42a4c8a7a87396a389a02898c74f3a3aed4
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\docker compose\health-check>

```

22. Extend Service

Saat membuat aplikasi menggunakan Docker, kadang kita ingin menjalankan aplikasi tersebut ke beberapa server baik itu di local laptop, di server development, atau server production. Kadang ada kalanya beberapa hal berbeda, misal konfigurasi misalnya pada kasus ini, mau tidak mau kita harus membuat banyak file konfigurasi Docker Compose, misal untuk di local, di development dan di production.

Buat Struktur file seperti ini:



a. Konfigurasi Utama

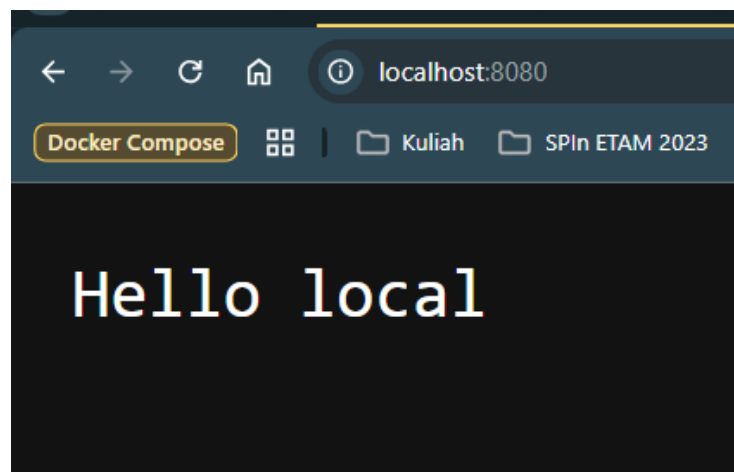
```
docker-compose.yml X main.go Dockerfile

extend-service > docker-compose.yml

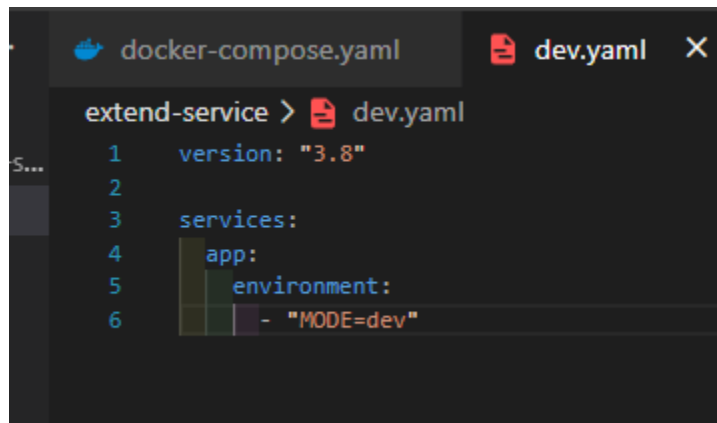
1  version: "3.8"
2
3  services:
4    app:
5      container_name: app
6      build:
7        context: "./app"
8        dockerfile: Dockerfile
9      image: "app-golang:1.0.0"
10     environment:
11       - "APP_PORT=8080"
12       - "MODE=local"
13     ports:
14       - "8080:8080"
```

Build dan start.

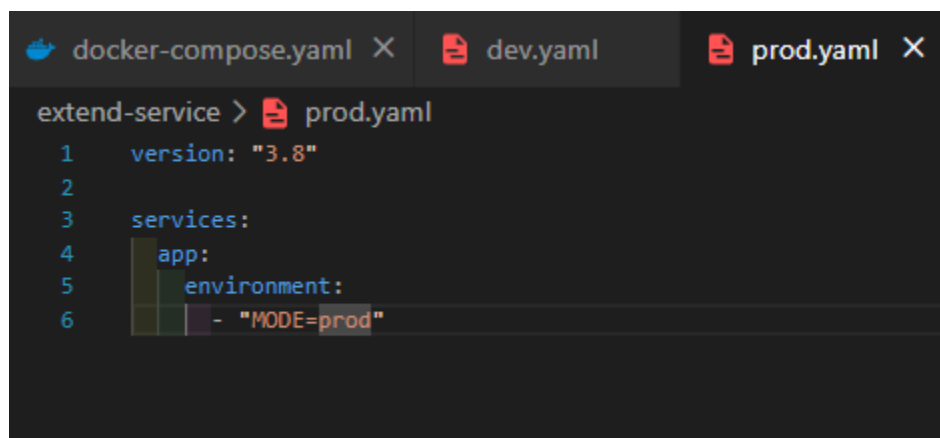
```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> docker compose create
time="2024-11-10T08:46:46+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\do
cker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
! app Warning pull access denied for app-golang, repository does not exist or may require 'docker login': denied: requested access to the resource is d... 4.3s
[+] Building 2.9s (10/10) FINISHED
-> [app internal] load build definition from Dockerfile
-> => transferring dockerfile: 182B 0.0s
-> [app internal] load metadata for docker.io/library/golang:1.18-alpine 2.2s
-> [app auth] library/golang:pull token for registry-1.docker.io 0.0s
-> [app internal] load .dockerignore 0.0s
-> => transferring context: 2B 0.0s
-> CACHED [app 1/3] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807 0.0s
-> [app internal] load build context 0.0s
-> => transferring context: 415B 0.0s
-> [app 2/3] RUN mkdir app 0.4s
-> [app 3/3] COPY main.go app 0.1s
-> [app] exporting to image 0.1s
-> => exporting layers 0.1s
-> => writing image sha256:40ba61b06835084e85f10d09126bb459e98793e84ec25938e2147aa053e9dd64 0.0s
-> => naming to docker.io/library/app-golang:1.0.0 0.0s
-> [app] resolving provenance for metadata file 0.0s
[+] Creating 2/2
✓ Network extend-service_default Created 0.1s
✓ Container app Created 0.1s
```



b. Konfigurasi Dev dan Prod



```
extend-service > dev.yaml
1  version: "3.8"
2
3  services:
4    app:
5      environment:
6        - "MODE=dev"
```

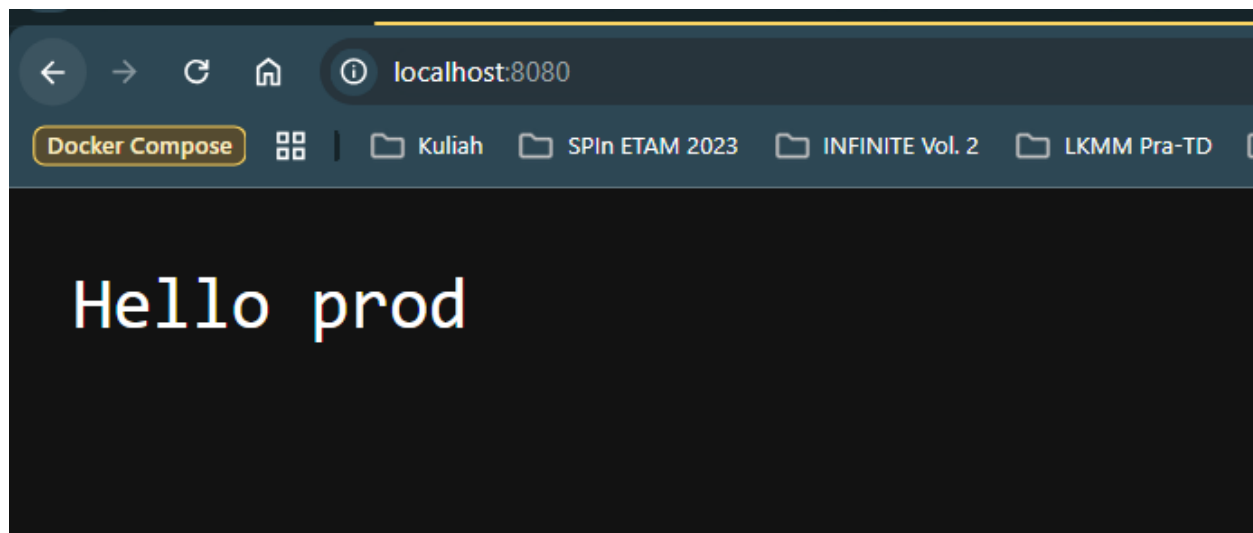


```
extend-service > prod.yaml
1  version: "3.8"
2
3  services:
4    app:
5      environment:
6        - "MODE=prod"
```

c. Extend Service

Docker Compose memiliki fitur bernama **extend service**, yang memungkinkan kita untuk menggabungkan beberapa file konfigurasi sekaligus. Fitur ini berguna untuk membuat konfigurasi umum yang dapat digunakan di berbagai environment, serta file konfigurasi khusus untuk setiap environment, misalnya untuk development, staging, atau production. Dengan cara ini, kita dapat memisahkan konfigurasi umum dan konfigurasi spesifik environment, membuatnya lebih mudah untuk dikelola. Saat menjalankan Docker Compose, kita bisa menggunakan perintah `-f namafile.yaml` untuk menentukan nama file konfigurasi yang ingin digunakan, jika file tersebut bukan `docker-compose.yaml` yang default.

```
PROBLEMS OUTPUT PORTS SQL CONSOLE GITLENS POSTMAN CONSOLE COMMENTS TERMINAL DEBUG CONSOLE
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> docker compose -f docker-compose.yaml -f prod.yaml create
time="2024-11-10T08:54:46+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\do
cker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
time="2024-11-10T08:54:46+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\pr
od.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 1/1
  ✓ Container app Recreated 0.6s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> docker compose -f docker-compose.yaml -f prod.yaml start
time="2024-11-10T08:55:02+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\do
cker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
time="2024-11-10T08:55:02+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\pr
od.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container app Started 0.4s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> |
```



```
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> docker compose -f docker-compose.yaml -f dev.yaml create
time="2024-11-10T08:55:53+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\do
cker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
time="2024-11-10T08:55:53+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\de
v.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network extend-service_default Created 0.1s
  ✓ Container app Created 0.1s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> docker compose -f docker-compose.yaml -f dev.yaml start
time="2024-11-10T08:55:57+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\do
cker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
time="2024-11-10T08:55:57+08:00" level=warning msg="C:\\Users\\alpia\\Documents\\Materi dan Tugas Kuliah\\Semester 7\\Sistem Terdistribusi\\Docker Compose\\extend-service\\de
v.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
  ✓ Container app Started 0.6s
PS C:\Users\alpia\Documents\Materi dan Tugas Kuliah\Semester 7\Sistem Terdistribusi\Docker Compose\extend-service> |
```

