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# **JOBSHEET 10**

## **DOCKER**

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Arranged By:

**Rajendra Rakha Arya Prabaswara**

**(1941720080/21)**

**PROGRAM STUDI D-IV TEKNIK INFORMATIKA**

**JURUSAN TEKNOLOGI INFORMASI**

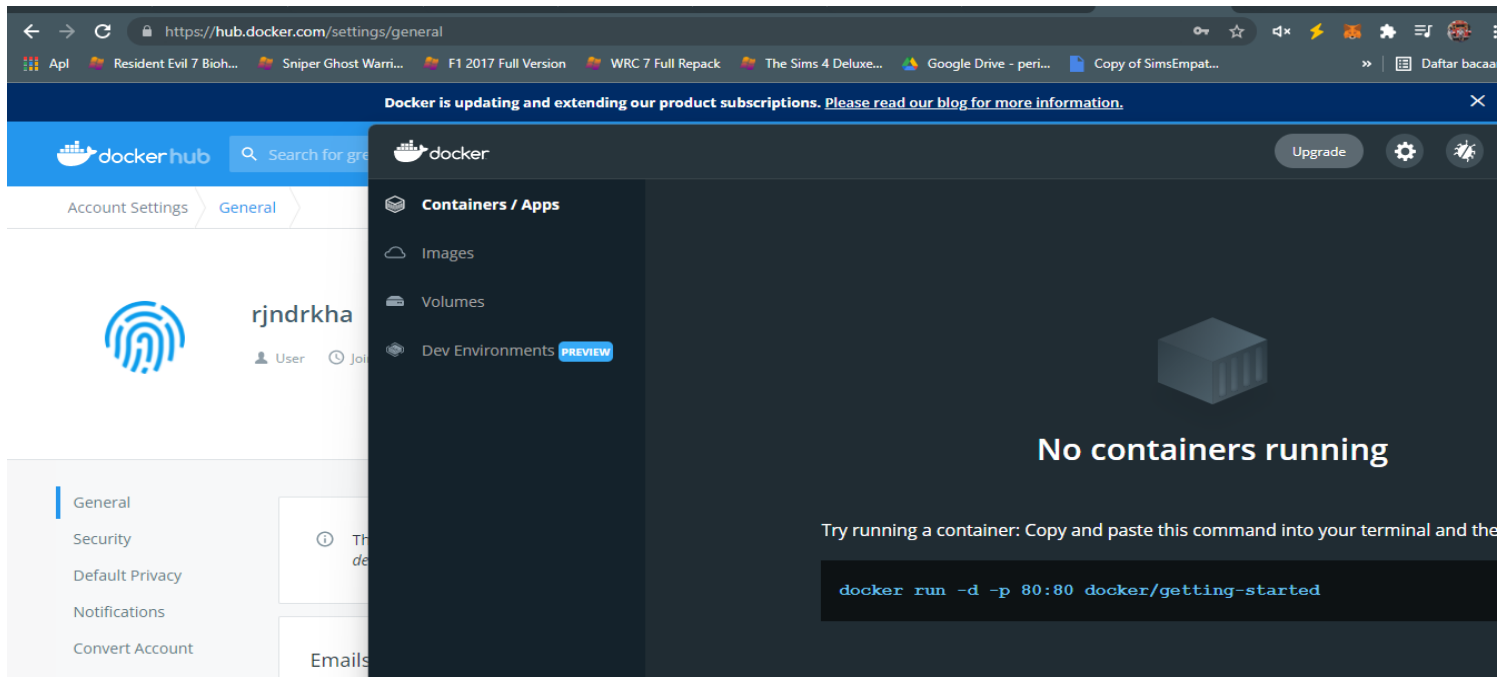
**POLITEKNIK NEGERI MALANG**



## Practicum 1

### (Installing Docker)

#### 1. Install & Register Docker in Windows



#### 2. Login to Virtual Machine and run this syntax → **sudo apt update && sudo apt upgrade**

```
Found initrd image: /boot/initrd.img-5.11.0-1020-oracle
Found linux image: /boot/vmlinuz-5.11.0-1019-oracle
Found initrd image: /boot/initrd.img-5.11.0-1019-oracle
Found linux image: /boot/vmlinuz-5.11.0-1016-oracle
Found initrd image: /boot/initrd.img-5.11.0-1016-oracle
Adding boot menu entry for UEFI Firmware Settings
done
ubuntu@vm-ubuntu-rajendra:~$
```

#### 3. Install the required packages before installing docker → **sudo apt-get install curl apt-transport-https \ ca-certificates software-properties-common**

```
apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 4680 B of archives.
After this operation, 162 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal-updates/universe amd64 apt-transport-https all 2.0.6 [4680 B]
Fetched 4680 B in 0s (14.4 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 182523 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.0.6_all.deb ...
Unpacking apt-transport-https (2.0.6) ...
Setting up apt-transport-https (2.0.6) ...
ubuntu@vm-ubuntu-rajendra:~$
```



4. Add Docker Repository , With Multiple Syntax Below :

→ `curl -fsSL https://download.docker.com/linux/ubuntu/gpg \ | sudo apt-key add -`

```
ubuntu@vm-ubuntu-rajendra:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg \
> | sudo apt-key add -
OK
ubuntu@vm-ubuntu-rajendra:~$
```

→ `sudo add-apt-repository \ "deb [arch=amd64] https://download.docker.com/linux/ubuntu \ $(lsb_release -cs) stable"`

```
ubuntu@vm-ubuntu-rajendra:~$ sudo add-apt-repository \
> "deb [arch=amd64] https://download.docker.com/linux/ubuntu \
> $(lsb_release -cs) stable"
Get:1 https://download.docker.com/linux/ubuntu focal InRelease [57.7 kB]
Hit:2 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal InRelease
Hit:3 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:4 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal-updates InRelease
Get:5 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages [12.3 kB]
Hit:6 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal-backports InRelease
Fetched 70.0 kB in 1s (53.7 kB/s)
Reading package lists... Done
ubuntu@vm-ubuntu-rajendra:~$
```

→ `sudo apt update`

```
ubuntu@vm-ubuntu-rajendra:~$ sudo apt update
Hit:1 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal InRelease
Hit:2 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:3 http://uk-london-1-ad-3.clouds.archive.ubuntu.com/ubuntu focal-backports InRelease
Hit:4 https://download.docker.com/linux/ubuntu focal InRelease
Hit:5 http://security.ubuntu.com/ubuntu focal-security InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
ubuntu@vm-ubuntu-rajendra:~$
```

→ `apt-cache policy docker-ce`

```
ubuntu@vm-ubuntu-rajendra:~$ apt-cache policy docker-ce
docker-ce:
  Installed: (none)
  Candidate: 5:20.10.10~3-0~ubuntu-focal
  Version table:
     5:20.10.10~3-0~ubuntu-focal 500
        500 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages
```

If we look at the output of the last command it indicates that docker is not installed and already in the repository to be ready for installation.



## 5. Install Docker Using This Syntax

→ Sudo apt install docker-ce

```
Setting up containerd.io (1.4.11-1) ...  
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.  
Setting up docker-ce-cli (5:20.10.10~3-0-ubuntu-focal) ...  
Setting up pigz (2.4-1) ...  
Setting up docker-ce-rootless-extras (5:20.10.10~3-0-ubuntu-focal) ...  
Setting up docker-ce (5:20.10.10~3-0-ubuntu-focal) ...  
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.  
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.  
Processing triggers for man-db (2.9.1-1) ...  
Processing triggers for systemd (245.4-4ubuntu3.13) ...  
ubuntu@vm-ubuntu-rajendra:~$
```

→ sudo systemctl status docker

```
ubuntu@vm-ubuntu-rajendra:~$ sudo systemctl status docker  
● docker.service - Docker Application Container Engine  
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)  
   Active: active (running) since Wed 2021-11-10 05:05:42 UTC; 1min 58s ago  
 TriggeredBy: ● docker.socket  
     Docs: https://docs.docker.com  
    Main PID: 62617 (dockerd)  
       Tasks: 8  
      Memory: 39.9M  
     CGroup: /system.slice/docker.service  
             └─62617 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock
```

## Docker Successfully Running

## 6. To Make Sure , We will use image Test Use Syntax Below :

→ sudo docker run hello-world

```
ubuntu@vm-ubuntu-rajendra:~$ sudo docker run hello-world  
Unable to find image 'hello-world:latest' locally  
latest: Pulling from library/hello-world  
2db29710123e: Pull complete  
Digest: sha256:37a0b92b08d4919615c3ee023f7ddb068d12b8387475d64c622ac30f45c29c51  
Status: Downloaded newer image for hello-world:latest  
  
Hello from Docker!  
This message shows that your installation appears to be working correctly.
```

**Congratulation Docker Ready to use**



7. Sometimes user have different image , Use syntax below to use docker without *sudo* :

➔ **sudo usermod -aG docker \$(whoami)**

***Then Restart your Server***

➔ **docker images**

```
*** System restart required ***
Last login: Wed Nov 10 04:15:22 2021 from 180.248.20.182
ubuntu@vm-ubuntu-rajendra:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
hello-world   latest    feb5d9fea6a5   6 weeks ago    13.3kB
ubuntu@vm-ubuntu-rajendra:~$ █
```



## Practicum 2

### (Set up Docker & Build Image)

1. Clone Repository from <https://gitlab.com/Od3ng/cloud-docker-java-sample.git>

→ Git clone <https://gitlab.com/Od3ng/cloud-docker-java-sample.git>  
→ Ls  
→ cd cloud-docker-java-sample

```
ubuntu@vm-ubuntu-rajendra:~$ git clone https://gitlab.com/Od3ng/cloud-docker-java-sample.git
Cloning into 'cloud-docker-java-sample'...
remote: Enumerating objects: 60, done.
remote: Counting objects: 100% (60/60), done.
remote: Compressing objects: 100% (42/42), done.
remote: Total 60 (delta 30), reused 32 (delta 17), pack-reused 0
Unpacking objects: 100% (60/60), 8.29 KiB | 653.00 KiB/s, done.
ubuntu@vm-ubuntu-rajendra:~$ ls
cloud-docker-java-sample
ubuntu@vm-ubuntu-rajendra:~$ cd cloud-docker-java-sample
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$
```

2. Run This Syntax to Build

→ docker build -t Od3ng/docker-sample-java .

```
Step 6/7 : RUN javac Aritmatika.java
---> Using cache
---> f05318a1ccd0
Step 7/7 : CMD ["java","Aritmatika"]
---> Using cache
---> edc74559610f
Successfully built edc74559610f
Successfully tagged rjndrkha/docker-sample-java:latest
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$
```

3. Check

```
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$ docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
c166b245ac03	rjndrkha/docker-sample-java:latest	"java Aritmatika"	13 minutes ago	Exited (1) 13 minutes ago		coba-image-java

```
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$
```



## **Practicum 3**

### **(Uploading to Docker hub )**

1. Using this syntax below Login To Docker Via Terminal :

➔ Docker login

```
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$ docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a [
e.
Username: rjndrkha
Password:
WARNING! Your password will be stored unencrypted in /home/ubuntu/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

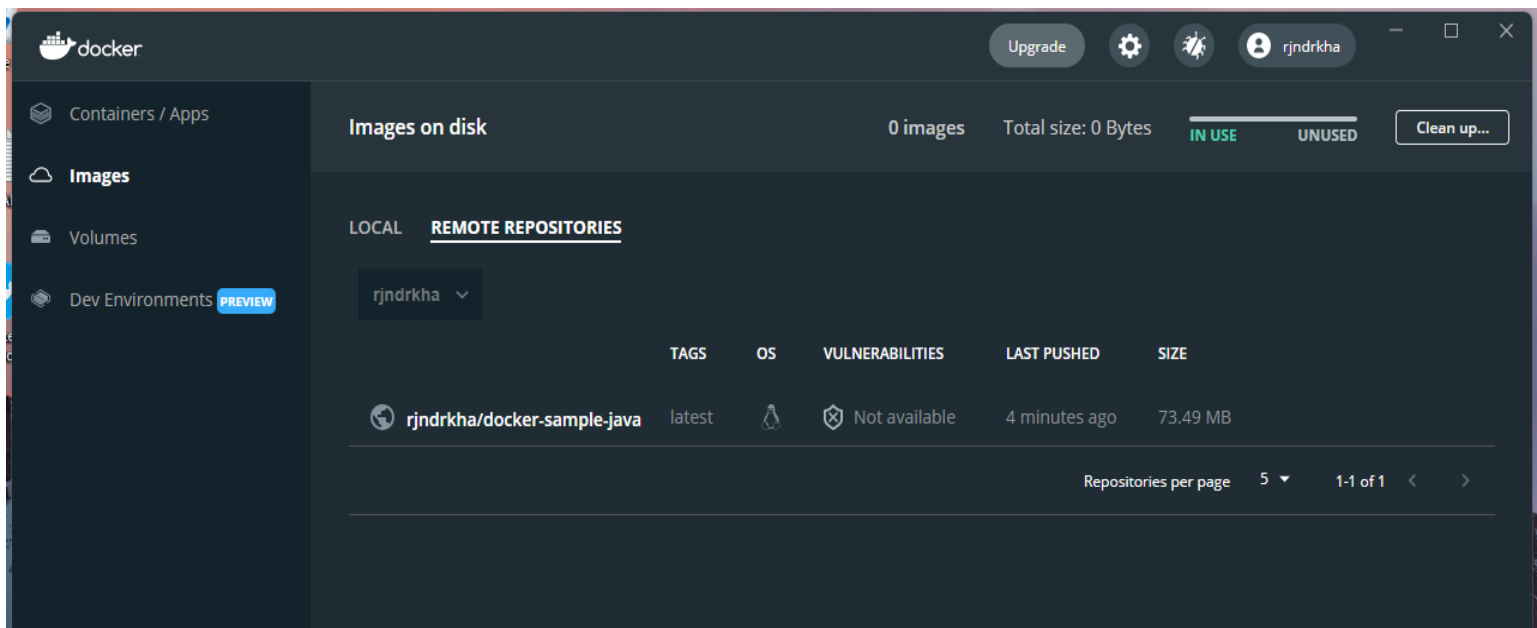
Login Succeeded
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$
```

➔ docker push rjndrkha/docker-sample-java

```
Login Succeeded
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$ docker push rjndrkha/docker-sample-java
Using default tag: latest
The push refers to repository [docker.io/rjndrkha/docker-sample-java]
e18b4ee435a3: Pushed
518260415595: Pushed
41e0e24be3d0: Pushed
ceaf9e1ebef5: Mounted from library/openjdk
9b9b7f3d56a0: Mounted from library/openjdk
f1b5933fe4b5: Mounted from library/openjdk
latest: digest: sha256:133ed9c0685fcc27dc390c36dcc592a5a867cb058de122df658990f30761f3d5 size: 1567
ubuntu@vm-ubuntu-rajendra:~/cloud-docker-java-sample$
```



## 2. Succesfully Pushed



Thank You 😊