Tugas:

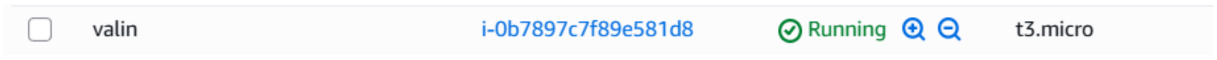
Buat satu workflow GitHub Actions yang akan:

1. Melakukan build Docker image dari aplikasi tersebut
2. Melakukan push Docker image ke Docker Hub

Target :

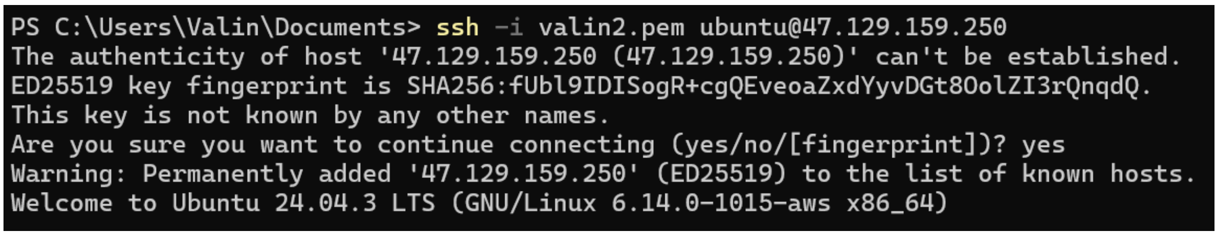
- **Build Docker image via GitHub Actions**
- **Push image ke Docker Hub**
- **Pakai self-hosted runner (EC2)**

1. Siapkan 1 instance



☐	valin	i-0b7897c7f89e581d8	✓ Running	t3.micro

2. SSH ke EC2



```
PS C:\Users\Valin\Documents> ssh -i valin2.pem ubuntu@47.129.159.250
The authenticity of host '47.129.159.250 (47.129.159.250)' can't be established.
ED25519 key fingerprint is SHA256:fUbl9IDISogR+cgQEveoaZxdYyvDGt8OolZI3rQnqdQ.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '47.129.159.250' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1015-aws x86_64)
```

3. Install basic tools needed

Install git :

sudo apt update && sudo apt upgrade -y

sudo apt install -y curl git

Install docker :

sudo apt install -y docker.io

sudo systemctl enable docker

sudo systemctl start docker

sudo usermod -aG docker ubuntu

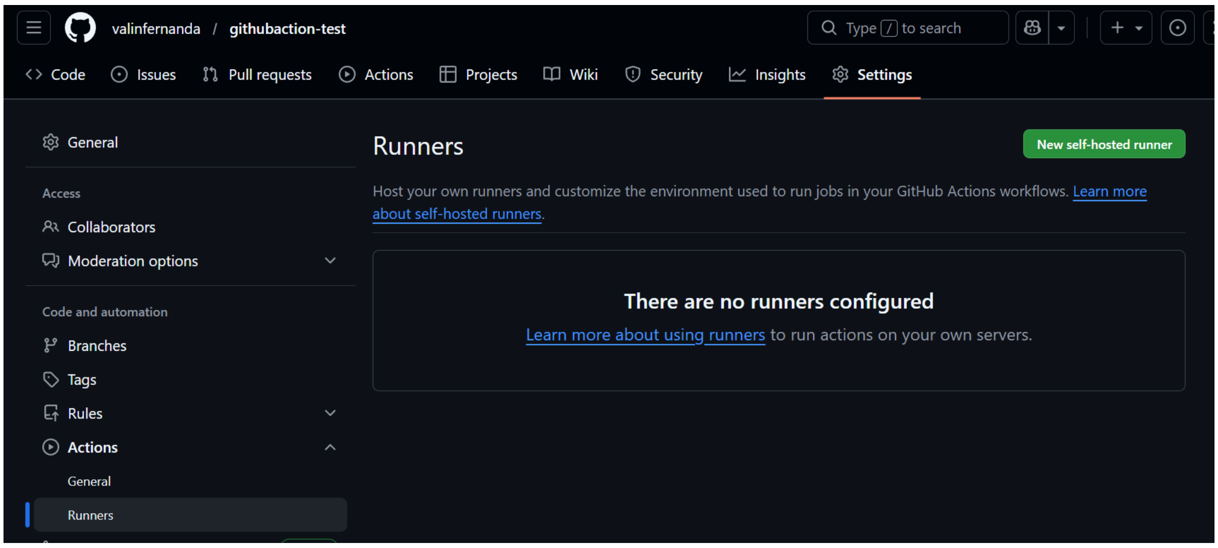
Test :

docker –version

NEXT TASK : Pasang GitHub Actions self-hosted runner di EC2

1. Masuk ke repo github dulu (dalam case ini, saya sudah membuat very simple **Node.js app**, tanpa framework, biar fokus ke Docker & CI) link : https://github.com/valinfernanda/githubaction-test

   Repo GitHub → Settings → Actions → Runners → New self hosted runner



valinfernanda / githubaction-test

Runners

Host your own runners and customize the environment used to run jobs in your GitHub Actions workflows. Learn more about self-hosted runners.

There are no runners configured

Learn more about using runners to run actions on your own servers.

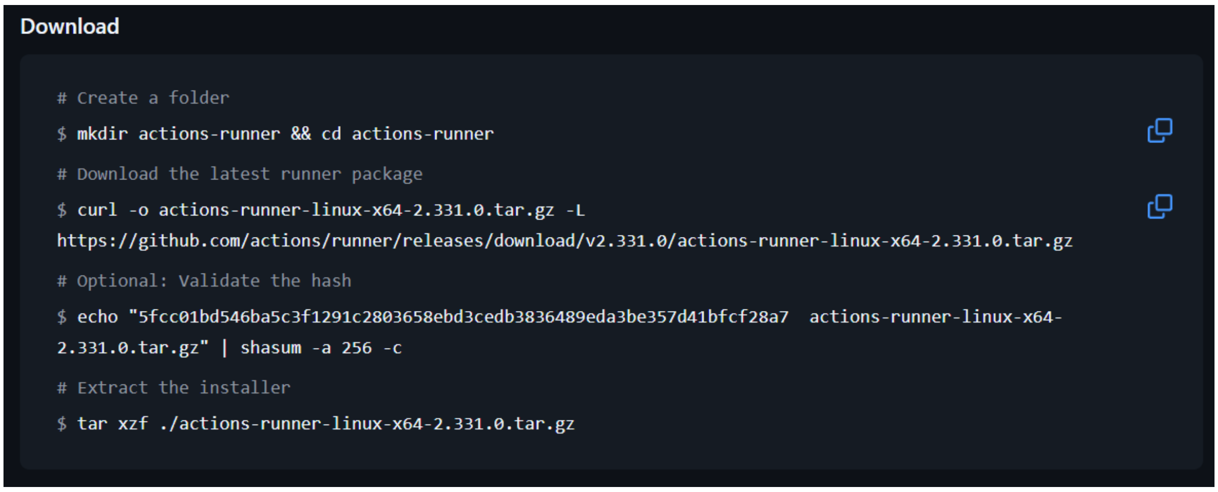
   Pilih:

- **OS**: Linux
- **Architecture**: x64

   GitHub bakal ngasih **command spesifik** (ada TOKEN).

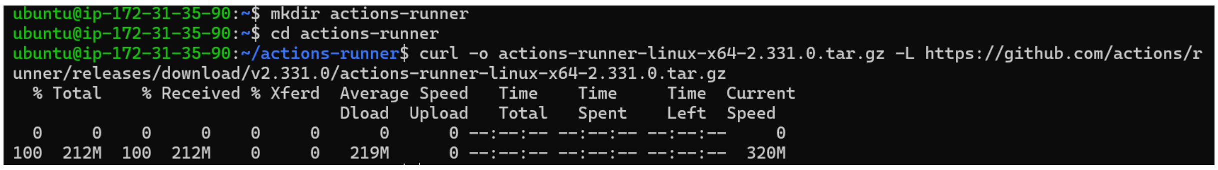
2. Download runner di EC2 (SSH)
   mkdir actions-runner
   cd actions-runner

   Lalu, copy command yang sudah disediakan dari GitHub:



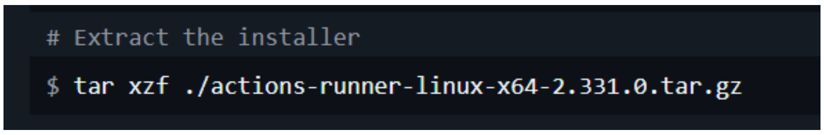
Download

```
# Create a folder
$ mkdir actions-runner && cd actions-runner
# Download the latest runner package
$ curl -o actions-runner-linux-x64-2.331.0.tar.gz -L
https://github.com/actions/runner/releases/download/v2.331.0/actions-runner-linux-x64-2.331.0.tar.gz
# Optional: Validate the hash
$ echo "5fcc01bd546ba5c3f1291c2803658ebd3cedb3836489eda3be357d41bfcf28a7  actions-runner-linux-x64-
2.331.0.tar.gz" | shasum -a 256 -c
# Extract the installer
$ tar xzf ./actions-runner-linux-x64-2.331.0.tar.gz
```



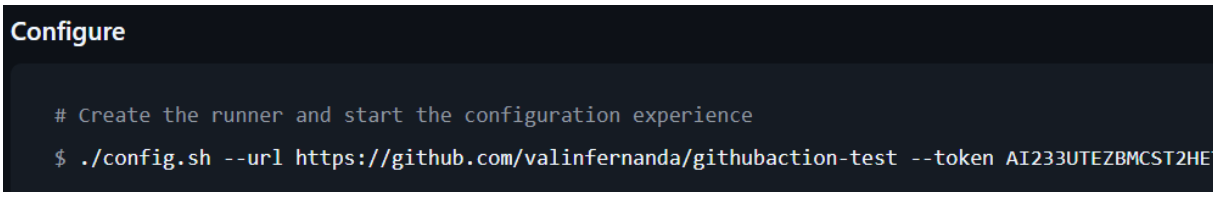
```
ubuntu@ip-172-31-35-90:~$ mkdir actions-runner
ubuntu@ip-172-31-35-90:~$ cd actions-runner
ubuntu@ip-172-31-35-90:~/actions-runner$ curl -o actions-runner-linux-x64-2.331.0.tar.gz -L https://github.com/actions/r
unner/releases/download/v2.331.0/actions-runner-linux-x64-2.331.0.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
100  212M  100  212M    0     0   219M      0 --:--:-- --:--:-- --:--:--  320M
```

Jangan lupa extract the installer



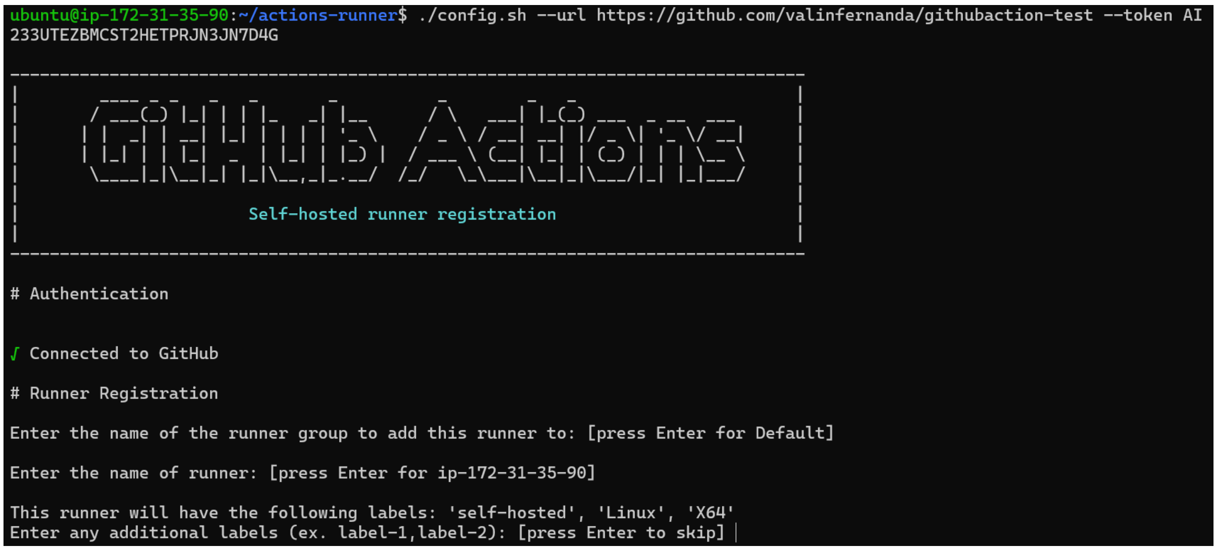
```
# Extract the installer
$ tar xzf ./actions-runner-linux-x64-2.331.0.tar.gz
```

3. Masih di folder actions-runner
   Copy configuration



Configure

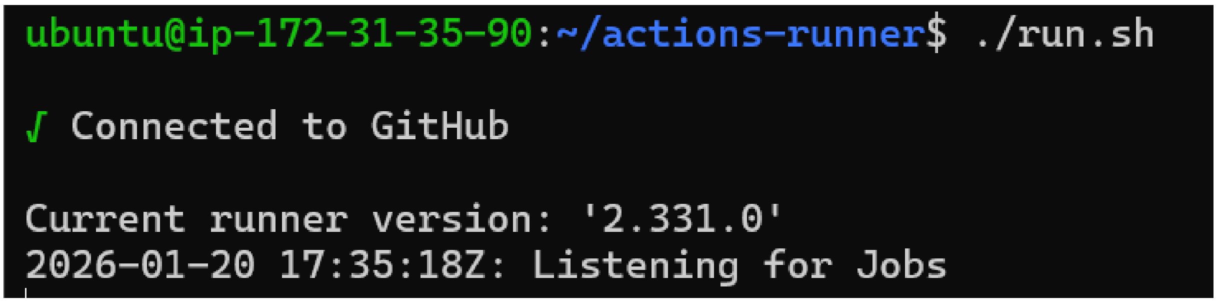
```
# Create the runner and start the configuration experience
$ ./config.sh --url https://github.com/valinfernanda/githubaction-test --token AI233UTEZBMCST2HE
```



```
ubuntu@ip-172-31-35-90:~/actions-runner$ ./config.sh --url https://github.com/valinfernanda/githubaction-test --token AI
233UTEZBMCST2HETPRJN3JN7D4G

--------------------------------------------------------------------------------
|        ____ _ _   _   _       _          _        _   _                      |
|       / ___(_) |_| | | |_   _| |__      / \   ___| |_(_) ___  _ __  ___      |
|      | |  _| | __| |_| | | | | '_ \    / _ \ / __| __| |/ _ \| '_ \/ __|     |
|      | |_| | | |_|  _  | |_| | |_) |  / ___ \ (__| |_| | (_) | | | \__ \     |
|       \____|_|\__|_| |_|\__,_|_.__/  /_/   \_\___|\__|_|\___/|_| |_|___/     |
|                                                                              |
|                       Self-hosted runner registration                        |
|                                                                              |
--------------------------------------------------------------------------------

# Authentication


√ Connected to GitHub

# Runner Registration

Enter the name of the runner group to add this runner to: [press Enter for Default]

Enter the name of runner: [press Enter for ip-172-31-35-90]

This runner will have the following labels: 'self-hosted', 'Linux', 'X64'
Enter any additional labels (ex. label-1,label-2): [press Enter to skip]
```

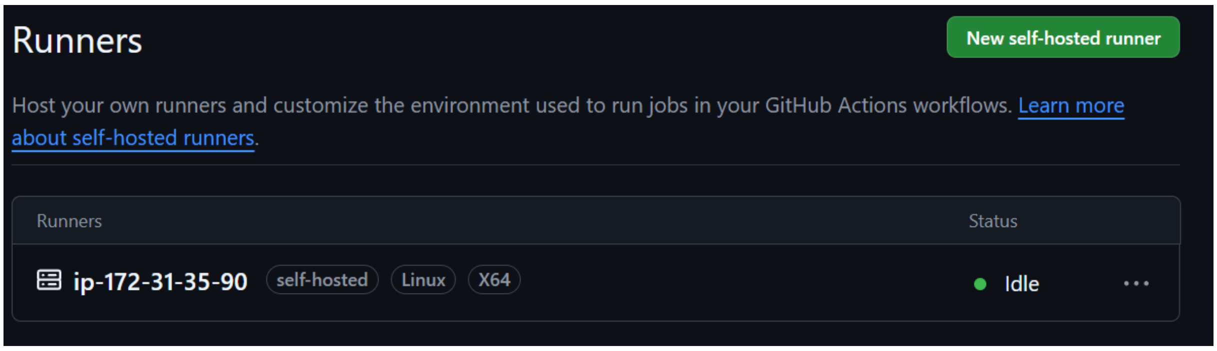
Note : Ingatkan labels nya

4. Test jalankan Runner (manual)
   ./run.sh



```
ubuntu@ip-172-31-35-90:~/actions-runner$ ./run.sh

√ Connected to GitHub

Current runner version: '2.331.0'
2026-01-20 17:35:18Z: Listening for Jobs
```

   Cek di github, runner status : Idle (ini tandanya runner sudah connect)



Runners

Host your own runners and customize the environment used to run jobs in your GitHub Actions workflows. Learn more about self-hosted runners.

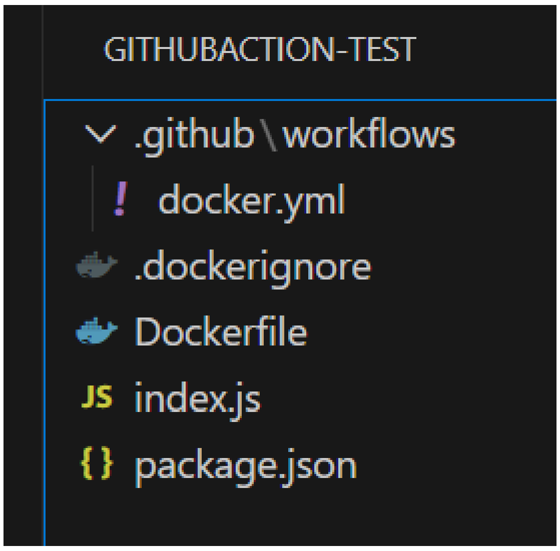
Runners	Status
ip-172-31-35-90 self-hosted Linux X64	● Idle

5. Bikin runner auto-start (Supaya runner jalan walau EC2 reboot):
   sudo ./svc.sh install
   sudo ./svc.sh start

   Cek status:
   sudo ./svc.sh status

   Harusnya:
   Active: active (running)

NEXT STEP : BIKIN DOCKER FILE dan WORKFLOW GITHUB ACTION
Notes: struktur foldernya akan seperti ini :



```
GITHUBACTION-TEST
  .github\workflows
    docker.yml
  .dockerignore
  Dockerfile
  index.js
  package.json
```

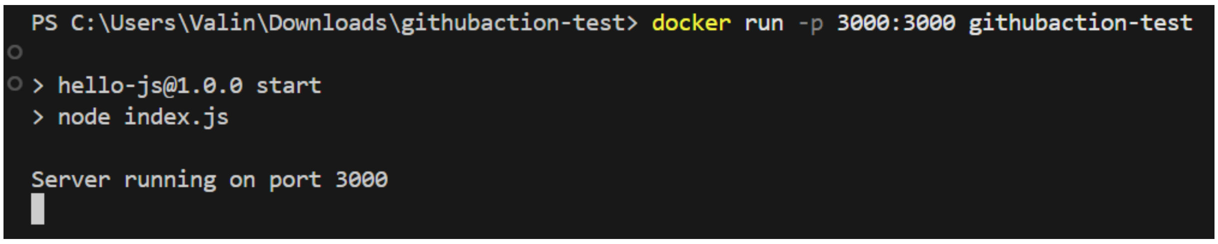
1. **Buat Dockerfile di repo yang sudah dibuat**

```
FROM node:18-alpine

WORKDIR /app

COPY package.json .
RUN npm install

COPY . .

EXPOSE 3000

CMD ["npm", "start"]
```

Optional test local : (jangan lupa nyalain dulu docker nya)

docker build -t githubaction-test .

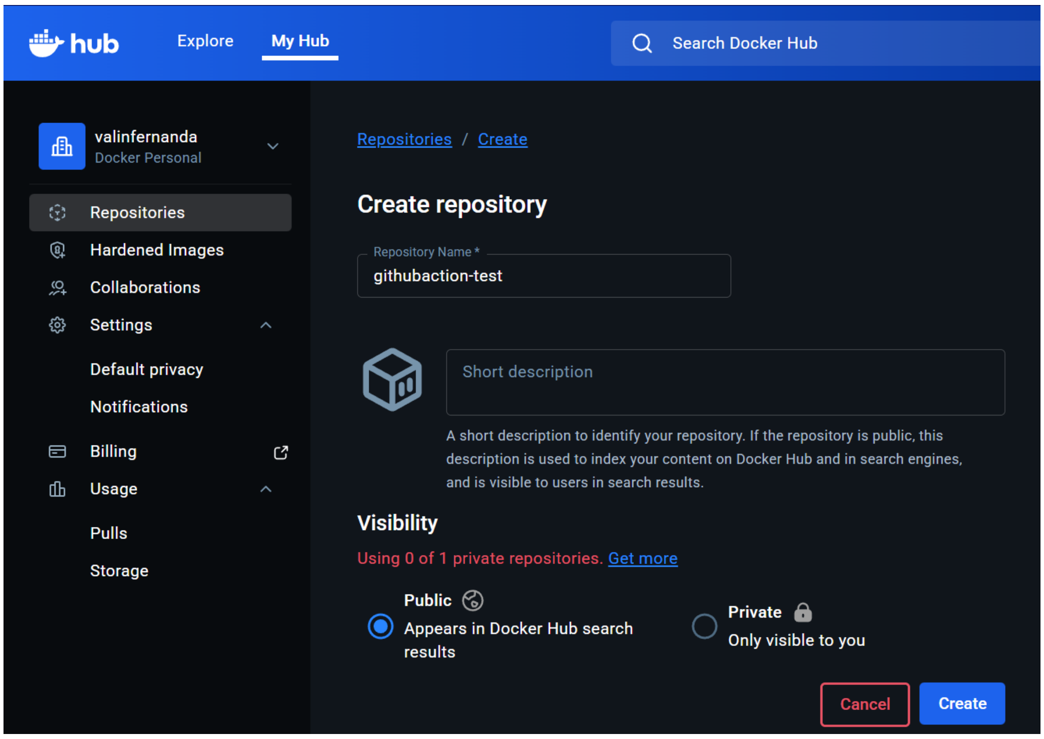
docker run -p 3000:3000 githubaction-test



```
PS C:\Users\Valin\Downloads\githubaction-test> docker run -p 3000:3000 githubaction-test

> hello-js@1.0.0 start
> node index.js

Server running on port 3000
```

2. Buat Repo di Docker Hub

Buat Repository



Create repository

Repository Name *
githubaction-test

Short description

A short description to identify your repository. If the repository is public, this description is used to index your content on Docker Hub and in search engines, and is visible to users in search results.

Visibility

Using 0 of 1 private repositories. Get more

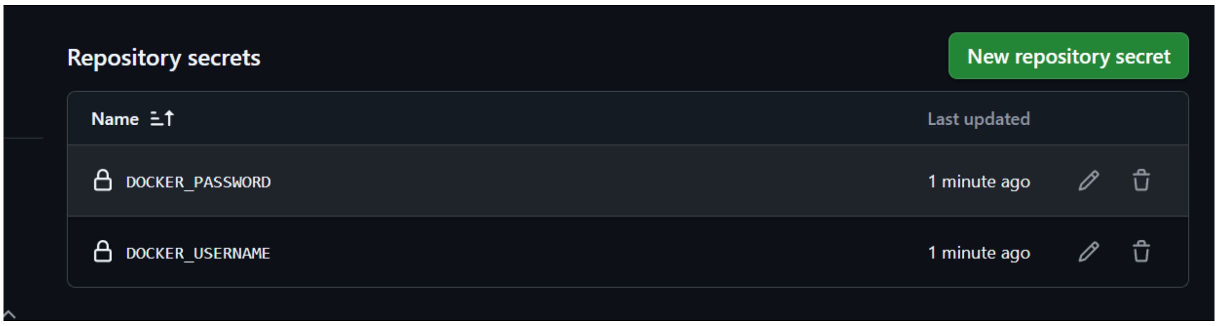
[✓ Public] Appears in Docker Hub search results

Private Only visible to you

3. Buat Github Secret

Repo GitHub → Settings → Secrets and variables → Actions

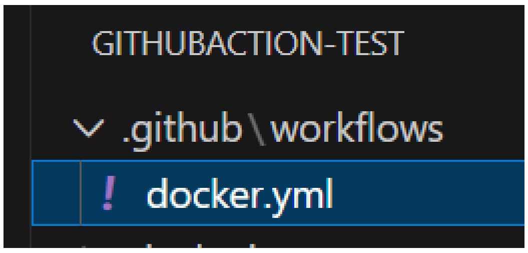
Name	Value
DOCKER_USERNAME	username Docker Hub
DOCKER_PASSWORD	password / access token



Repository secrets

Name	Last updated
DOCKER_PASSWORD	1 minute ago
DOCKER_USERNAME	1 minute ago

4. **Bikin Github Actions Workflow (sesuaikan dengan bentuk folder dibawah ini)**



Copy paste kode ini (taruh di docker.yml) :

```
name: Build & Push Docker Image

on:
 push:
  branches: [main]

jobs:
 docker:
  runs-on: self-hosted

  steps:
   - name: Checkout source code
    uses: actions/checkout@v4

   - name: Login to Docker Hub
    run: |
     echo "${{ secrets.DOCKER_PASSWORD }}" | docker login \
      -u "${{ secrets.DOCKER_USERNAME }}" --password-stdin

   - name: Build Docker image
    run: |
     docker build -t ${{ secrets.DOCKER_USERNAME }}/githubaction-test:latest .

   - name: Push Docker image
    run: |
     docker push ${{ secrets.DOCKER_USERNAME }}/githubaction-test:latest
```

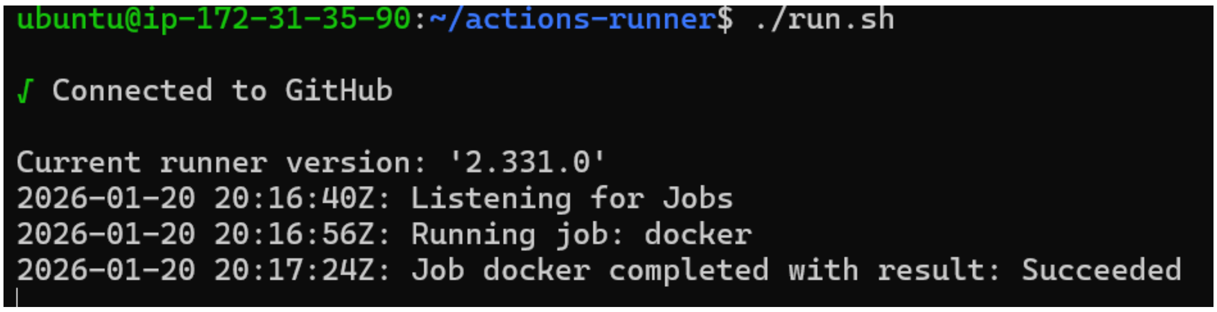
5. Push ke Github – CI jalan

```
git add .
git commit -m "Hello World app with Docker & GitHub Actions"
git push
```

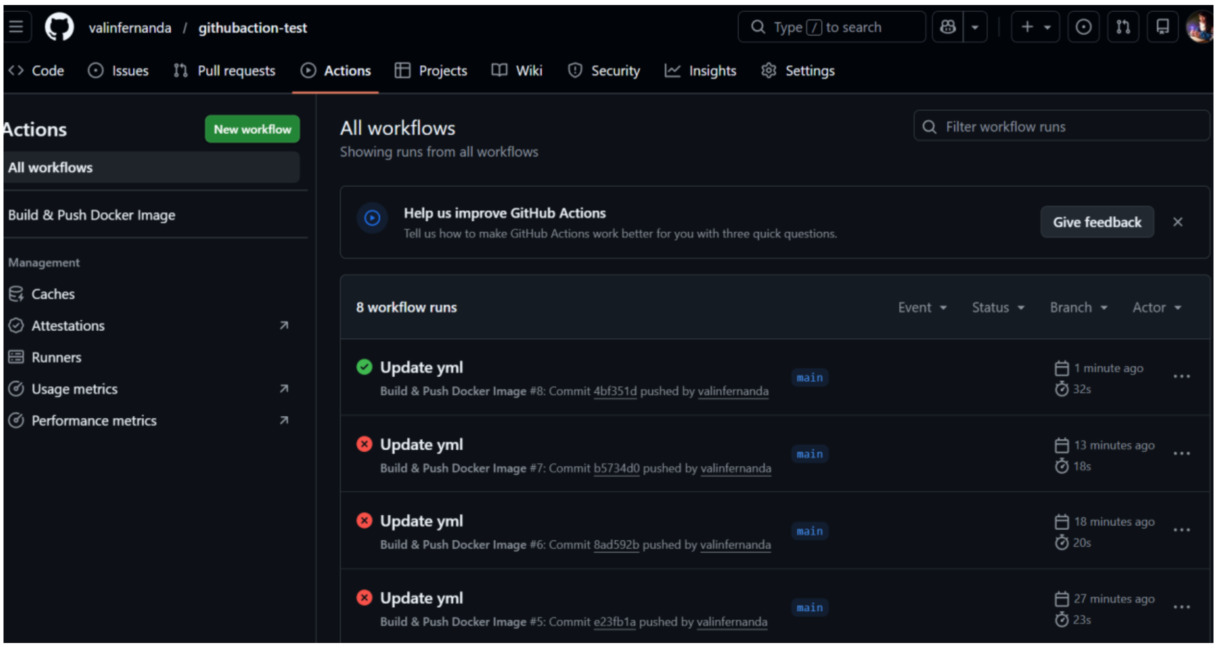
Lalu buka :

GitHub Repo → Actions

Notes : jangan lupa jalankan ./run.sh



```
ubuntu@ip-172-31-35-90:~/actions-runner$ ./run.sh

√ Connected to GitHub

Current runner version: '2.331.0'
2026-01-20 20:16:40Z: Listening for Jobs
2026-01-20 20:16:56Z: Running job: docker
2026-01-20 20:17:24Z: Job docker completed with result: Succeeded
```

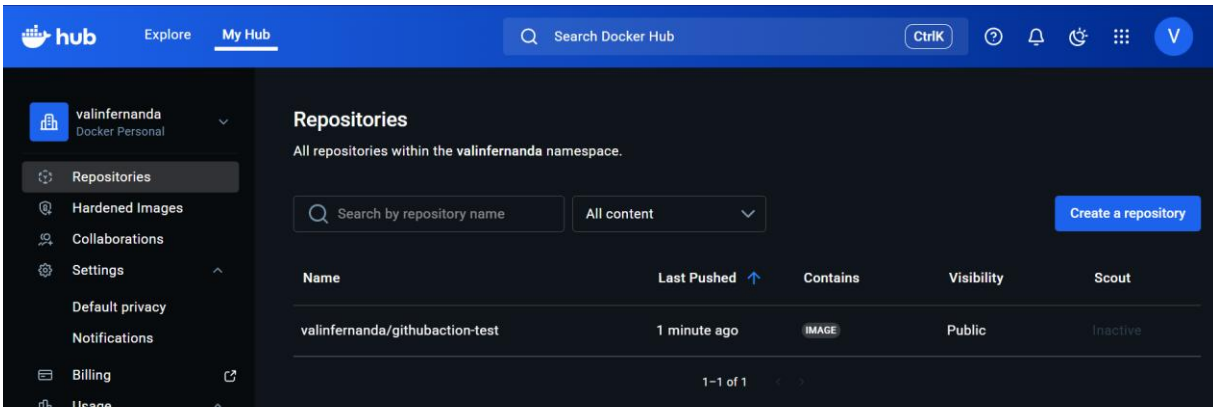


All workflows
Showing runs from all workflows

Help us improve GitHub Actions
Tell us how to make GitHub Actions work better for you with three quick questions.

8 workflow runs

✓	Update yml Build & Push Docker Image #8: Commit 4bf351d pushed by valinfernanda	main	1 minute ago	32s
✗	Update yml Build & Push Docker Image #7: Commit b5734d0 pushed by valinfernanda	main	13 minutes ago	18s
✗	Update yml Build & Push Docker Image #6: Commit 8ad592b pushed by valinfernanda	main	18 minutes ago	20s
✗	Update yml Build & Push Docker Image #5: Commit e23fb1a pushed by valinfernanda	main	27 minutes ago	23s



Repositories
All repositories within the **valinfernanda** namespace.

Name	Last Pushed	Contains	Visibility	Scout
valinfernanda/githubaction-test	1 minute ago	IMAGE	Public	Inactive

1–1 of 1