FILL IN : Lab 5

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Questions from the lab

*In the lab assignment, you’ll see several questions in red boxes. Paste those questions and their respective answers below. Make sure your answer is concise and well-formatted. You may submit this as e.g. a screenshot of a filled-out cell in a copy of the Notion document (e.g. with code, so that code formatting is maintained).*

New Git Repo : 01\_DockerTest

**Q1 :** What did the multi-line script return ?

**A1 :**

# This is a basic workflow to help you get started with Actions

name: CI

# Controls when the workflow will run

on:

# Triggers the workflow on push or pull request events but only for the "master" branch

push:

branches: [ "master" ]

pull\_request:

branches: [ "master" ]

# Allows you to run this workflow manually from the Actions tab

workflow\_dispatch:

# A workflow run is made up of one or more jobs that can run sequentially or in parallel

jobs:

# This workflow contains a single job called "build"

build:

# The type of runner that the job will run on

runs-on: ubuntu-latest

# Steps represent a sequence of tasks that will be executed as part of the job

steps:

# Checks-out your repository under $GITHUB\_WORKSPACE, so your job can access it

- uses: actions/checkout@v4

# Runs a single command using the runners shell

- name: Run a one-line script

run: echo Hello, world!

# Runs a set of commands using the runners shell

- name: Run a multi-line script

run: |

echo Add other actions to build,

echo test, and deploy your project.

**Q2 :** What did you change ? Show the changes from your workflow file and explain it a little.

**A2 :**

# This is a basic workflow to help you get started with Actions

name: CI

# Controls when the workflow will run

on:

  # Triggers the workflow on push or pull request events but only for the "master" branch

  push:

    branches: [ "master" ]

  pull\_request:

    branches: [ "master" ]

  # Allows you to run this workflow manually from the Actions tab

  workflow\_dispatch:

# A workflow run is made up of one or more jobs that can run sequentially or in parallel

jobs:

  # This workflow contains a single job called "build"

  build:

    # The type of runner that the job will run on

    runs-on: ubuntu-latest

    # This job checks out the repository, builds a Docker image from your Dockerfile,

    # tags it as hello-world-nginx:v1, and runs a container mapping port 8081 on the host

    # to port 80 in the container. It then lists running containers to verify the container is up.

    steps:

      # Checks-out your repository under $GITHUB\_WORKSPACE, so your job can access it

      - uses: actions/checkout@v4

      - name: Set up Docker Buildx

        uses: docker/setup-buildx-action@v3

      - name: Build Docker image

        run: docker build -t hello-world-nginx:v1 .

      - name: Run Docker container

        run: docker run -d -p 8081:80 --name hello-nginx hello-world-nginx:v1

      - name: Check running containers

        run: docker ps

**Q3 :** Did your workflow fail? If so, why did it?

**A3 :** The workflow worked

A screenshot of a computer program

AI-generated content may be incorrect.

**Q4 :** How did you make the name randomised?

**A4 :**

- name: Generate random pod name

        id: rand

        run: echo "POD\_NAME=test-pod-$(openssl rand -hex 4)" >> $GITHUB\_ENV

      - name: Apply Kubernetes object with random name

        run: |

          echo "

          apiVersion: v1

          kind: Pod

          metadata:

            name: ${POD\_NAME}

            namespace: <your-namespace>

          spec:

            containers:

            - name: nginx

              image: nginx:alpine

          " | kubectl apply -f -

**Q5 :** How does the command for a Helm install look like with the flags added ?

**A5 :**

- name: Install nginx via Helm with overridden values

        run: |

          helm repo add bitnami https://charts.bitnami.com/bitnami

          helm repo update

          helm upgrade --install ${RELEASE\_NAME} bitnami/nginx \

            --namespace <your-namespace> \

            --create-namespace \

            --set image.tag=alpine

      - name: Check for Helm releases in namespace

        run: |

          helm list -n <your-namespace>

Questions to answer for every lab

**What did you learn?**

*Fill in your three take aways that you learned during this lesson.*

1. Working with Workflows to simplify/automate tasks.
2. How to run actions locally
3. Increase GitHub efficiency

**Givethree interesting exam questions about the contents of the lab and/or the theory**.

*Thinking about this will make sure you remember the key take-aways and important details better and longer.*

1. How can you randomize Kubernetes Pod object name ?
2. What is a workflow ?
3. Can you run Workflows locally (self-hosted) ?

**Check the following:**

* I have made the entire lab assignment (be careful, some labs consist out of two or more Notion documents!).
* I have answered all the questions from the lab assignment.
* I have submitted my code as a zip file and/or as a link to a *public* Git repository.
* <For labs on Azure> I have shut down any resources that are in use, in order to avoid unexpected costs.