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**Current Trends in Software Engineering**

**SE4010**

Week 12 Lab

IT19132310

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# Task 01 – Create Kubernetes Cluster

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# Task 02 – Create k8s Service Account for Deployment

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# Task 3 – Expose k8s endpoints to access publicly

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# Task 4 – Create CI/ CD with GitHub Actions

GitHub CI/ CD pipeline for k8s

name: GitHub CI/CD Pipeline for k8s

on:

push:

branches: [ master ]

workflow\_dispatch:

env:

DOCKER\_USERNAME: ${{secrets.DOCKER\_USERNAME}}

DOCKER\_PASSWORD: ${{secrets.DOCKER\_PASSWORD}}

ORDER\_REPO\_NAME: ${{secrets.ORDER\_REPO\_NAME}}

USER\_REPO\_NAME: ${{secrets.USER\_REPO\_NAME}}

jobs:

order-service:

runs-on: ubuntu-latest

steps:

- uses: actions/checkout@v2

- name: Docker login

run: |

docker login -u $DOCKER\_USERNAME -p $DOCKER\_PASSWORD

- name: Build order service docker image

run: |

cd src/order\_service

docker build . --file Dockerfile --tag $DOCKER\_USERNAME/$ORDER\_REPO\_NAME:v1.0.1

- name: Push order service docker image

run: docker push $DOCKER\_USERNAME/$ORDER\_REPO\_NAME:v1.0.1

user-service:

runs-on: ubuntu-latest

steps:

- uses: actions/checkout@v2

- name: Docker login

run: |

docker login -u $DOCKER\_USERNAME -p $DOCKER\_PASSWORD

- name: Build user service docker image

run: |

cd src/user\_service

docker build . --file Dockerfile --tag $DOCKER\_USERNAME/$USER\_REPO\_NAME:v1.0.4

- name: Push user service docker image

run: docker push $DOCKER\_USERNAME/$USER\_REPO\_NAME:v1.0.4

deploy:

needs: [order-service,user-service]

runs-on: ubuntu-latest

steps:

- uses: actions/checkout@v2

- name: 🛠 Configure Kubernetes Credentials

uses: Azure/aks-set-context@v1

with:

creds: '${{ secrets.AZURE\_CREDENTIALS }}'

cluster-name: ctse

resource-group: CTSE

- name: ⬆️ Deploy to K8s

run: kubectl apply -f release/

CI/ CD Pipeline Running on GitHub Actions

Graphical user interface, application

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