## Basic Cloud and DevOps skills

**Students should actively follow the tutorial and practice with the technologies. Students do not have to write a separate report for each assignment; one report on the entire assignment is required. In the report, students should reflect on the technologies and skills learned from the assignment in the context of DevOps, self-assess the knowledge and skill level required by the DevOps project (e.g., service development, CI/CD and operation), and discuss lessons learned and remaining technical gaps.**

I have previously learned how in theory restAPI work but not apply it in real life.

Difference between RestAPI and OpenAPI

* OpenAPI can be used to understand RestAPI, tooling, describes, produces documentation, SDKs generations.
* Basic Rest API Info, describe the RestAPI request, describe the API response, example response

GIT

Learned how git clearly works(recap), already had knowledge in git and guthub.

* Git can be used for testing.

Got to work with GitHub Actions and Docker.

Docker:

* Difference between VMs and Containers
  + What is a hypervisor
  + VMs another OS and binaries and libraries.
  + Docker:
    - Docker: Manifest -> Image(Docker Image) -> Container
    - With docker you only have libraries
    - Cloud native architecture(scalability)
* With VMs there could be hardware incompatibilities.

To make a cloud native app docker is required.

Kubernetes(MicroK8s):

Tools used for orchestrating the deployment, scaling and management of a software.

Why is container orchestration necessary:

* Allows the frontend, backend and development to be runed together. Kubernetes is the master.
  + Application
  + OS
  + Dependencies
* Deploying + Scaling + Networking + insight:
  + Worker nodes – F, B, D
    - Extra nodes for scaling the application
  + Create own work balance for networking
  + Allows logging, resolving errors
    - Example istio/kiali tools within Kubernetes to improve optimization.
  + BASE MASTER – Kubernetes

Questions:

How do the test thingy work?