DevOps Practice

(aka Agile Software Practice)

BSc (H) Software Systems Development – Year 4

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Student Info.

- Moodle:
  - Used for assignment submissions only.
- Website:
  - URL: https://tutors.dev/course/devops-practice-setu-deise
  - All course material.

- Communications.
  - Slack workspace.
  - Emails to @mail.wit.ie accounts.
- Contact hours: 1L (Online) + 3P
  - Emphasis on Practical skills.

Agenda

- Software requirements
- The Software Development Lifecycle (SDLC)
- Module's focus
- Assessment.

Software requirements

- Node.js - Locally; ~v20.x; See https://nodejs.org/en/download/
- Docker Desktop – Locally; See https://www.docker.com/get-started/
- The Git tool – Locally; See https://www.atlassian.com/git/tutorials/install-git
  - May already be installed ($ git --help)
- VS Code editor – Locally; See https://code.visualstudio.com/

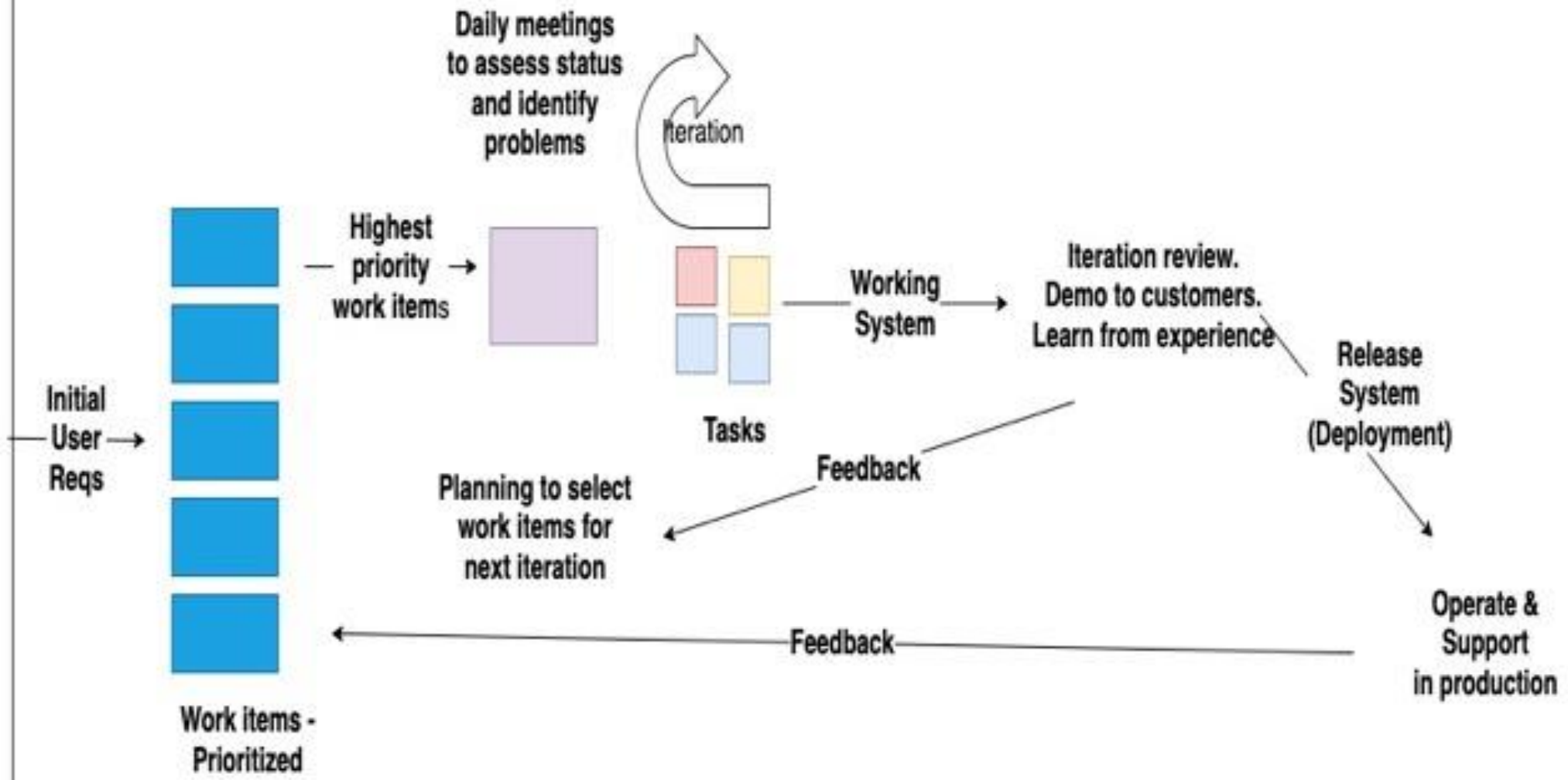
- A GitHub account.
- A GitLab account – See https://gitlab.com/
- An AWS account – See https://aws.amazon.com/
- An on-premise Kubernetes cluster account (Details later)

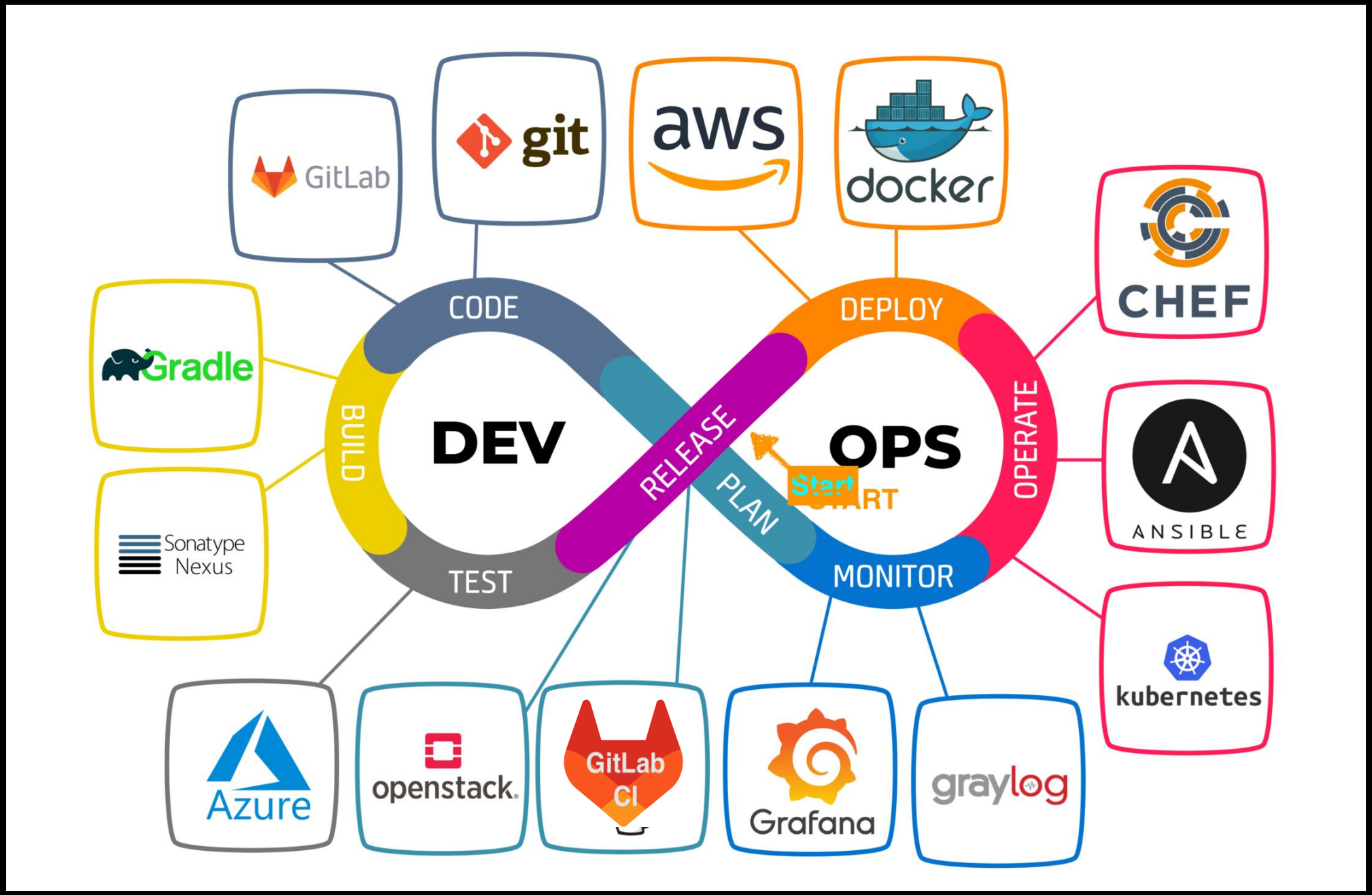
The software development lifecycle (SDLC)

- Waterfall model.

- The Agile model.
  - An umbrella name.
  - Scrum is the most popular. instantiation.
  - Matured into the DevOps model.

The Agile S/w Development lifecycle




GitLab
git
aws
docker
CHEF
Gradle
CODE
DEPLOY
BUILD
DEV
RELEASE
PLAN
OPS
OPERATE
ANSIBLE
Sonatype Nexus
TEST
MONITOR
kubernetes
Azure
openstack
GitLab CI
Grafana
graylog

Module’s focus.

- Our focus is on the tools, platforms, and **services** to support software creation in a dynamic (i.e. agile) development environments, with particular emphasis on deployment.

- Tool chain:
  - Docker (Build, Package).
  - Kubernetes (Deployment)
  - GitLab CI (CI/CD – Test → Release → Deploy).
  - AWS (Deploy).

Assessment

- **100% CA.**
  - **10% - Lab work handup**
  - **45% - take-home assignment.**
  - **45% - end-of-semester, lab-based exam – week12/13.**