

# Jenkins

- CI/CD Automation Tool
- Open source + community = plugins!
- Other alternatives: TravisCI, CircleCI, Gitlab CI.

# Project Types

- **Freestyle:** This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.
- **Pipeline:** is a suite of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins.
- **Blue Ocean:** Designed from the ground up for Jenkins Pipeline, but still compatible with freestyle jobs, Blue Ocean reduces clutter and increases clarity for every member of the team.

# Pipeline

- Suite of plugins that support implementing and integrating CD pipelines.
- A CD pipeline is an automated process to bring software from version control to users.
  - Build, Test, Deploy
- "Pipeline as Code": the CD pipeline becomes a (versionable) part of the code.

# Pipeline components

- **Agent:** An agent is typically a machine, or container, which connects to a Jenkins master and executes tasks when directed by the master.
- **Stage:** stage is part of Pipeline, and used for defining a conceptually distinct subset of the entire Pipeline, for example: "Build", "Test", and "Deploy", which is used by many plugins to visualize or present Jenkins Pipeline status/progress.
- **Step:** A single task; fundamentally steps tell Jenkins what to do inside of a Pipeline or Project.

# Jenkinsfile

Creating a Jenkinsfile, which is checked into source control, provides a number of immediate benefits:

- Code review/iteration on the Pipeline
- Audit trail for the Pipeline
- Single source of truth for the Pipeline, which can be viewed and edited by multiple members of the project.

# Launching Jenkins

- You can install it, but why would you?
- Docker image
- Blue Ocean

# Hands-on

- Fork and clone the [sample repository](#).
- Follow the steps in [Jenkins Java app with Maven tutorial](#).
- [Exercise 9](#)