Lab 4 - Delivery
Software Quality

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GitHub & Video Link: https://github.com/okikio-school/soft-quality-lab4

What do pipeline, node, agent, stage, and steps mean in the context of Jenkins?

Pipeline: Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in a free-style job type. It's where the Jenkins script starts when using the Jenkins declarative pipeline syntax.

Node: Depending on the context Node can refer to 2 different things

1. Additional options on the Agent config option that allows for labeling agents and specifying customWorkspaces
2. The machine used to run the pipeline. Jenkins supports distributed workloads using the master-slave architecture, so Node can refer to the Node the pipeline should run on, e.g. on Linux Agent Node, Windows Agent Node, and/or MacOS Agent Node

Agent: Used to identify where we want to build/run the Jenkins job. It technically falls under the definition of Node, as in a distributed Jenkins workflow, there will be a Master Node and multiple Separate Slave Nodes generally referred to Agents, by using the Agent config one can specify what Agent Node they'd like the pipeline to run in.

Stage: Specifies the logical work to be performed as a series of sequentially Steps to be run, e.g. Build, Test, Deploy, etc… are logical sets of activities to be completed. Stages encapsulate all Stage declarations, and are where the work happens; you can specify multiple stages per Jenkins pipeline.

Steps: Are the smallest executable unit of activities that run in a pipeline. A Stage is made of multiple Steps. Multiple Stages make up a Pipeline.

Unfortunately I wasn't able to get the Continuous Deployment working, but I was successful in getting Continuous Integration working.

You can access it at http://172.214.125.251:8080/

> Note: I'm using Azure to deploy the application to K8s.

```
[INFO] Total time:  8.868 s
[INFO] Finished at: 2024-04-01T03:05:13Z
[INFO] ------------------------------------------------------------------------
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy)
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] withEnv
[Pipeline] {
[Pipeline] sh
+ echo bye bye
bye bye
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

Design:

- **Update the Binary Calculator project to the latest version you have implemented. Check that the jobs start running and check their report.**
- **Until now, the script in the Jenkins file contains only the continuous integration part. It’s required to update it to continuously deploy to GKE.**

Deliverable

- **A report containing both the discussion and design parts.**
- **Your Github link.**
- **An audible video of about 3 minutes showing the continuous integration part (the two techniques).**
- **An audible video of about 3 minutes showing the design part.**