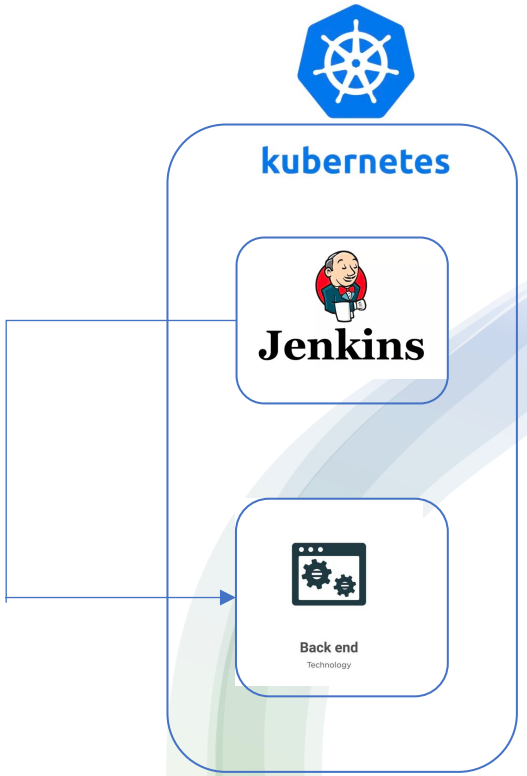
ITI Graduation Project

Overview

- Deploy backend application on kubernetes cluster using CI/CD jenkins pipeline using the following steps and high-level diagram :

    1. Implement secure Kubernetes cluster
    2. Deploy and configure Jenkins on Kubernetes.
    3. Deploy backend application on Kubernetes using Jenkins pipeline.



- Use the next slides for more details and requirements

Kubernetes Cluster

Create infrastructure and deployment process with **terraform**.

- Implement and configure secure Kubernetes cluster on AWS/GCP using infrastructure as a code.

Deploy Jenkins

- Deploy and configure Jenkins on the created k8s cluster
- Use separate namespace for Jenkins's deployment on k8s.

Deploy Application

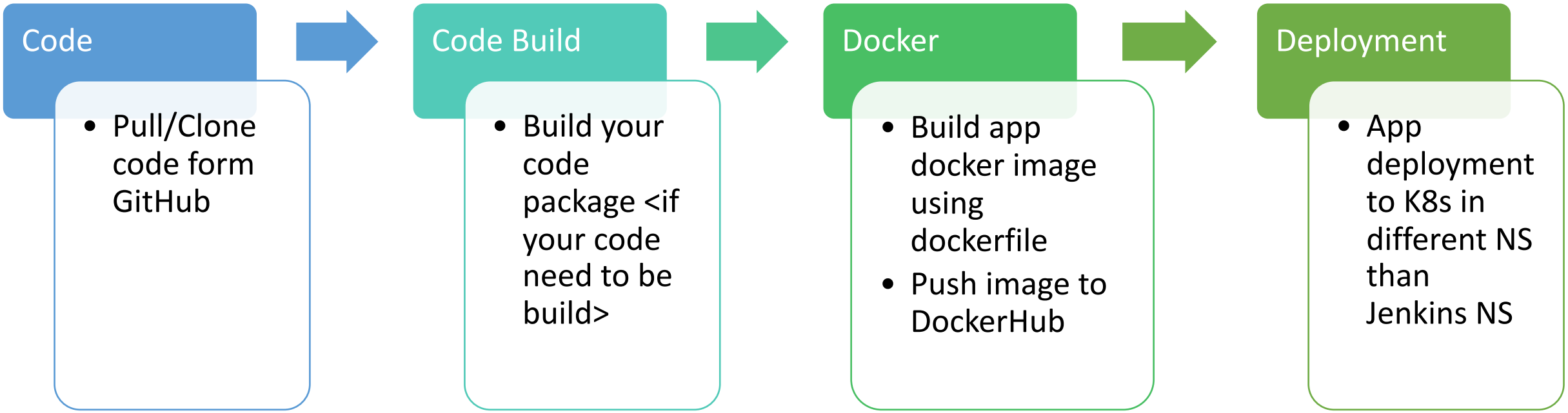
Create Jenkins pipeline to trigger the deployment of the backed application make sure that your pipeline include :

- Build/pull the docker file
- Automated deployment pipeline

Backend Application

- Build a simple application
- Responds to '/' http endpoint and display "Hello World"
- Packaged as a docker image
- Use dockerhub for pulling and pushing requests.

Pipeline Stages



Project Delivery

Links

Jenkins link

App URL

Code

2 GitHub Repos links

- Infra repo
  - Folder for tf
  - Folder for Jenkins deployment
- App repo
  - App Code
  - Docker file
  - Deployment files
  - Jenkins file

Documentations

Try to document your thought processes. (Readme.md is a good place) Documents points like

setup, commands, description for created modules.

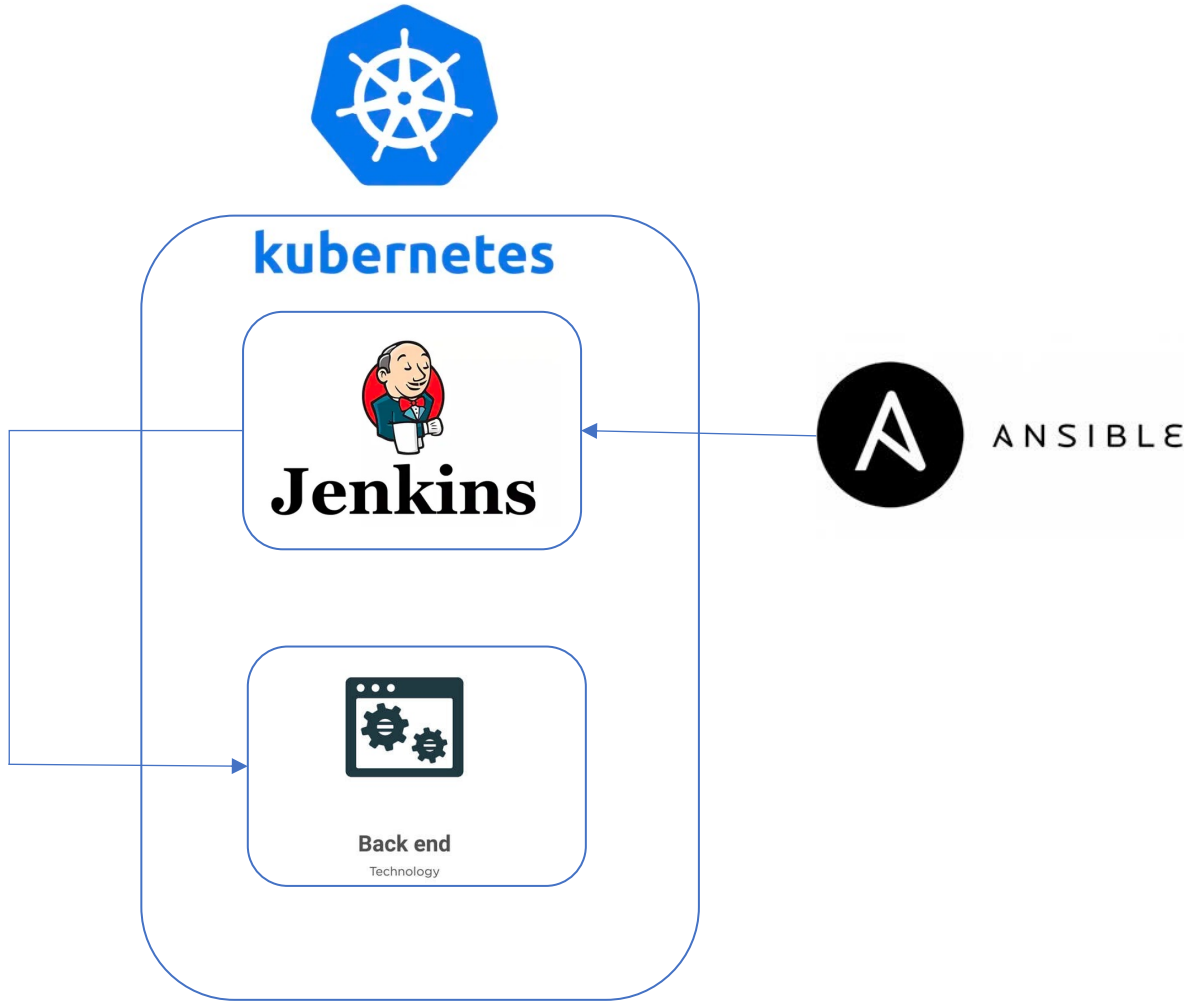
- What a real-life deployment would need extra?
- What can be improved upon?
- Focus on producing, we want to see what you can do best

Important Notes:

- Commit often (make your progress visible).
- Limit is 3 days
- It is OK to copy and paste snippets as long as you reference them.
- Just deliver the best you can within the constraints.

Advance part

Jenkins Deployment



GOOD
LUCK!