Azure DevOps Continued

Pipeline as code

- This approach is all about expressing ci/cd pipeline as code
- Azure DevOps, Github actions, Gitlab uses yaml, Jenkins used DSL (Domain specific Language)
- In this option we define the pipeline and store it in version control, so we will have history of all the changes done.

YAML

- This is a data representation format.
- Generally tools declare the structure/schema of yaml
- YAML uses name value pair collection as its basic representation.
- Basic syntax

```
<name>: <value>
```

- value types:
  - simple
    - text `email: abc@xyz.com` or `email: "abc@xyz.com"` or `email: 'abc@xyz.com'`
    - number: `age: 28`
    - boolean: `pgstudent: true` or `pgstudent: yes` or `pgstudent: false` or `pgstudent: no`
  - complex
    - list: plural

```
subjects: [ "ds", "c++" ]
subjects:
  - ds
  - c++
```

    - dictionary/map/object:

```
student:
  name: xyz
  qualification: B.Tech (CS)
  year: 2018
  workexperienced:
    - intern at abc
    - software consultant @ byz
```

- When we work with Azure DevOps there is a fixed schema

Lets Try to write our first pipeline for spring pet clinic

- Assumptions:
  - I need a linux microsoft hosted agent to run this pipeline
  - manual steps `mvn clean package`
- need to know
  - if you have one stage and one job directly write steps
- Refer Here for pipeline schema
- Lets write pipeline and to follow also use classroom video

```
---
pool:
  vmImage: ubuntu-22.04
steps:
  - bash: mvn clean package
    displayName: 'Building code'
```

Lets create one more pipeline yaml file

- Assumptions:
  - we will be using only bash as of now
  - We need an ubuntu 22.04 instance
  - all the credentials are already working
- Manual Steps:

```
docker image build -t learningthoughts/ltecommerce:latest .
docker image push learningthoughts/ltecommerce:latest
terraform apply deploy/aks -auto-approve
kubectl apply -f deploy/k8s/aks
```

- Azure DevOps yaml

```
---
pool:
  vmImage: ubuntu-22.04
steps:
  - bash: docker image build -t learningthoughts/ltecommerce:latest .
    displayName: 'Build docker image'
  - bash: docker image push learningthoughts/ltecommerce:latest
    displayName: 'push docker image'
  - bash: terraform apply deploy/aks -auto-approve
    displayName: 'Create k8s cluster'
  - bash: kubectl apply -f deploy/k8s/aks
    displayName: 'Deploy application'
```

- Azure DevOps gives large set of reusable tasks Refer Here
- Azure DevOps allows us to
    - Use existing tasks
    - Get Tasks from Azure DevOps Market Place Refer Here
    - Create your own tasks
- Tasks are written in nodejs