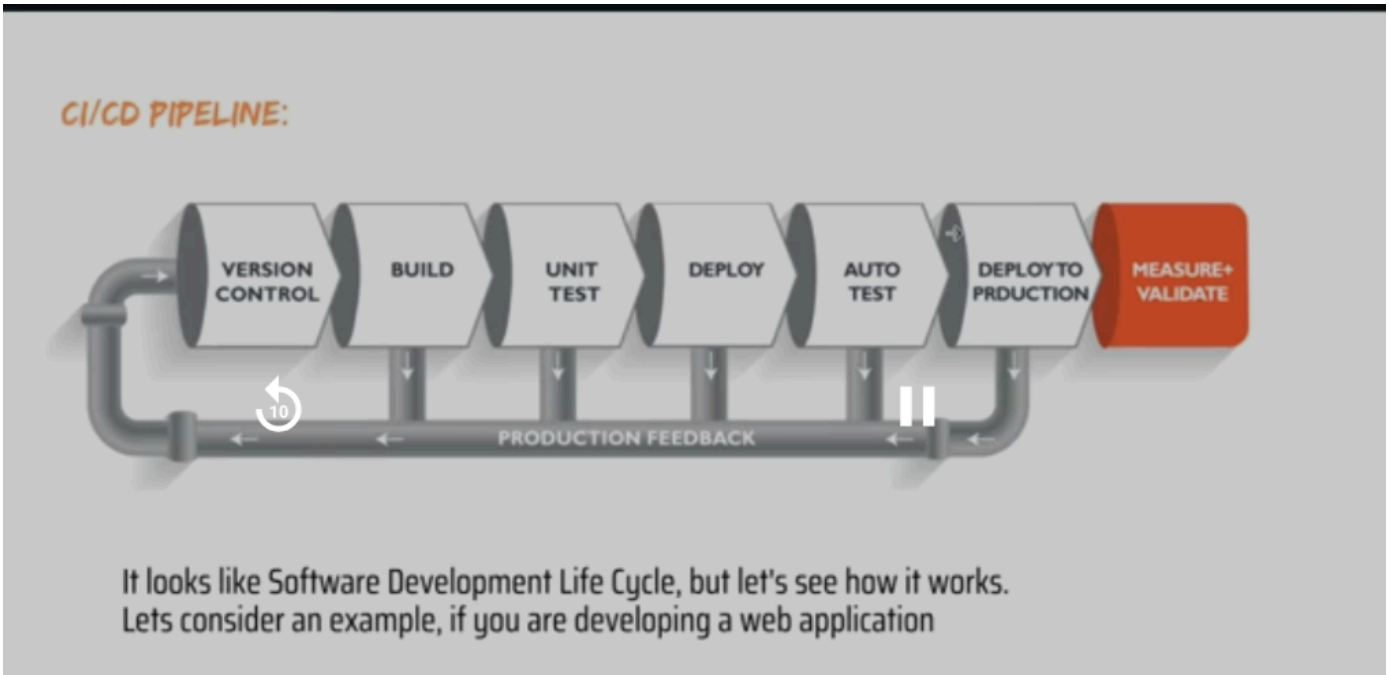
jenkins class-01

build tool we learn maven for unit testing



1. first we take code from github then build the project and after build the code then need to unit test if unit test case passes then it go to deploy and then have to do auto matic testing then go to production
   unit test: we have different types of testing ex: uat testing components testing that and all not test here , here it will test code level only once unit test cases pases it willl deploy to pre-production like staging other then production server it will test code level unit test cases if it is pass all it wil deploy the internal server
2. **auto test: different types testing happing here only performance testing and user acceptence testing and auto matic testing if we get success here then will move to production**
3. so in this way pipeline will work here
4. here it will cover entire sdlc life cycle plan code build test deploy etC
5. **version control: here devs** will write the code fro web applications. so it needs to be tested using version control system like git or svn
6. **BUILD**: let consider your code is written in java it needs to be compiled before excution. in the build step code gets compiled
7. **unit test:** if the build step is completed then move to the testing phase in the step unit step will be done.
8. **DEPLOY:** if the test step is completed then move to deploy phase in the step can deploy your code in dev ,testing environment ,here you can see the output of the application
   if one stage is fail then we go back to previous stage check it .

jenkins:

continuos Integration: it is the combination of continues build and continoues test (build+test)

jenkins is an open source project written by java kohsuke kawaguchi it runs on windows and linux and mac os

open source means evryone can access , it is community supportes and the first choice for continous

jenkins have also one comminuty if we get any doute we can connect with them

for cicd most them use jenkins only becasue

it has plugins,automate entire sdlc and fully customize

plugin is nothing smallfeature it will add extra feature to the jenkins

jenkins is platform indipendent and it can run on any major cmpatability

CICD: it will build and test and deploy is called cicd

CICD STANDS for continous intigration and continous devlopement

only CI means: only build and unit test:
devs will frequently merge the code into shared reository and automated tests are run to catch issues early
only CD **means: Automate the deployment of software
**

- [ ] **continous delvery: requires manual approval before deployment**
- [ ] **continous deployment: fully automated no manual intervention**

it have some advantages:

jenkins allows master-slave archtecture(jenkins master is going to assign a job to the slave)(if slaves are not available jenkins it self does the job)by using the labels we can specify the jobs to nodes/slave

you can write own plugin and use the comminuty plugin also

can understand the process of what is going

master and slave means: manager assign the works to works similarly master assignt he job to slave1 or slave2 slave 1 is build slave2 deploy

if slaves or not there means master only does the workd

slaves/agents/server ani okate

why the master slave sonsept means if master ct all thinggs it will increase the load

now practicall part:

To setup jenkins need 5 steps:

STEP-1: LAUCN AN EC2 INSTANCE WITH SEPARATE SECURITY GROUP

STEP-2: GO TO JENKINS.IO AND COPY PASTE THOSE 2 LINKS

STEP-3: INSTALL JAVA

STEP**4: INSTALL JENKINS**

STEP-5: START THE JENKINS

links-1: sudo wget -O /etc/yum.repos.d/jenkins.repo
https://pkg.jenkins.io/redhatstable/jenkins.repo

link-2 : sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

To install java11 : amazon-linux-extras install java-openjdk11 -y

To install jenkins : yum install jenkins -y

To start jenkins : systemctl start jenkins

To check jenkins status : systemctl status jenkins To stop jenkins : systemctl stop jenkins

jenkisn we install java 11

for maven we install java jdk 1.8