Assignment - 3
Devops

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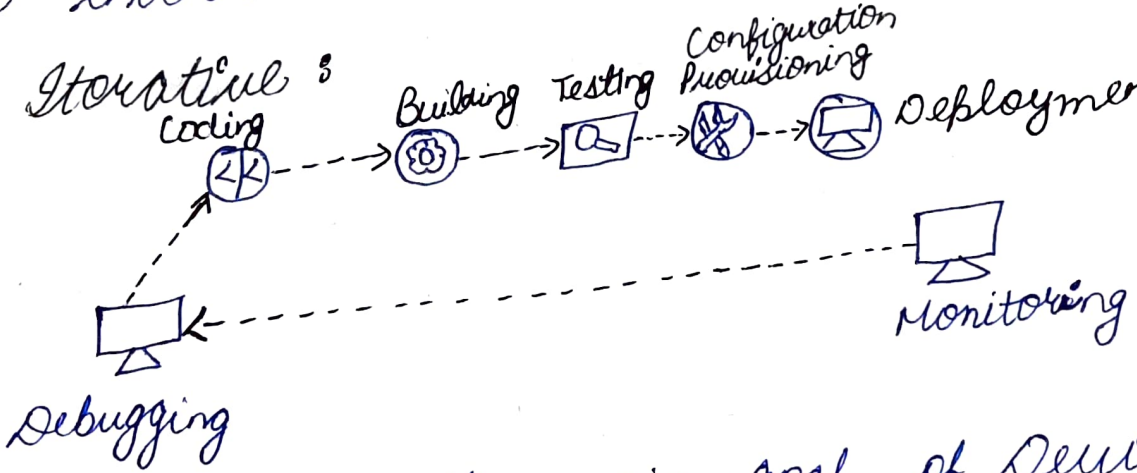
Summary of Online Course :

Devops : Devops is a culture which is made of principle, tools and practices.

Devops Principle : There are basic 7 Principles of Devops.

1. Incremental : In this we devide our project into mini or small tasks and then focus on that small chunk of part. Then incrementally we increase the part & deliver.

2. Iterative :



3. Automated : The main goal of Devops is no operation. Automation make your practices efficient, error free.

4. Continuous : Once the processes became automated. In continuous paradigm the focus is on how much stages you integrate on your pipeline.

5. Collaborative: The whole foundation of Devops was based on bringing the development and operational team together making it more collaborative. Allow free flow of knowledge, ideas & skills.

6. Self Service: Everyone should collaborate in such a manner that they don't have to be dependent on one another. It enables to take intative.

7. Holistic: It require whole knowledge of the system.

→ For continuous testing we require test cases framework & build automation framework.

Devops Pipeline: In Devops Pipeline, Developer write some code & pushes it into central code repository, this process itself trigger build automation framework & after that testing framework where each test cases are executed one by one. & all the test cases pass, the server is configured & provisioned immediately & application package is deployed on the server. Then monitoring of application is done & feedback is given to previous stage. It will all work in iterative cycle.

Introduction to Git: It is version control system which allow us to track our files, & track who modify the code. we can revert or recover from our lost file.

Repository: Is the common code base, where all the codes of developers are there. The code is maintained at centre level called repository.

→ Git work in distributed manner. It is a open source. It works on SSH & HTTP protocol.

→ Webhook: It is a feature in Git Hub through which we can connect it to any other continuous integration tool like Jenkins, Bamboo.

Git Installation & Repository setup.

1.) First Create an account on Git hub.

2.) To create a repository click of right hand top corner '+' full down button & click on new.

3.) Now give the name of repository, description & made it public, if you want private, it will have certain charges.

4.) Click of README & then Create new Repository to create a new repository.

5. Now go to amazon linux & install git by typing the command on bash:

yum install git.

6.) we can check whether git is working or not by typing: git --version.

7.) Create a Directory by giving command mkdir 'directoryname', then go inside directory. Cd directoryname/

8.) To create file we type 'vim filename'

9.) git init: when we give command git init it create an infrastructure to make our directory as local repository.

10.) ls -a & then go inside repository by comma -ncl: cd .git/

11.) we can add files to the local repository by: git add. (It will add all files at once).

git add filename (It will add one by one) to our local repository.

12.) Type commit command to commit all the changes to our local repository.

git commit -m "Intial commit".

⇒ To connect local repository to remote repository. git remote add origin url of remote repository.

⇒ git push origin master after it will ask for username of ~~to~~ github and password. It will push code to master branch of remote repository.

Tracking our changes:

1.) git log: This command give us information interms of commit. Any changes in git will go in chunk of commits. So every commit is a chunk of changes.

2.) git show commitid: It will give us all the details of changes done in that commit. Anything deleted is shown in red color. This commit id will also be unique.

3.) git log -1: To see last commit.

4.) git log --pretty = short: give short description of our commit.

5.) git log --pretty = oneline: ~~to~~ give Description in one line.

6.) git log --decorate --oneline --graph: It will be useful when working with branches.

→ To create a file give simple command : vim filename.

→ Git status: Used to see the file status.

→ Index Area / Staging area: It is an intermediate area where we keep our changes temporarily.

Git add filename: It will put the file in inter-mediate area.

Git commit -m "Adding file3.c" : Adding a message with commit is mandatory

git push : It will send the file to remote repository after asking for your password.

git show last commit object: It will show the all information of all the last commit.

Git Branch: It is a linear series of commit object.

git branch: will show all the ~~obj~~ branches in current working directory.

→ master branch is fault branch.

git branch branchname: used to create a new branch.

git checkout branchname: If you want to jump to another branch.

→ Types of Branches:

- master
- Release
- DevelOps
- Feature:

git diff file branch1 ... another branch : will show the list of all the changes.

git commit -am "msg" : This means add and commit together.

git merge branchname : we can merge one branch to the master branch.

git branch -d branchname : To delete the branch.

Introduction to Jenkins :

Jenkins = CI/CD Tool.

It make it possible to fix your code from your source code management.

Jenkins tool or CI/CD Tool → DB Integration

- Fetch source code
- compile
- Unit Testing
- Deploy.
- Reports
- Notify
- Tag Label.

The CI/CD tools are heart of pipeline of Devops.

→ Features of Jenkins :

- Open Source
- Easy to use
- Extensible : Because of Plugin System.
- Distributed Build : work on Master Slave Architecture.
- Email Notification.

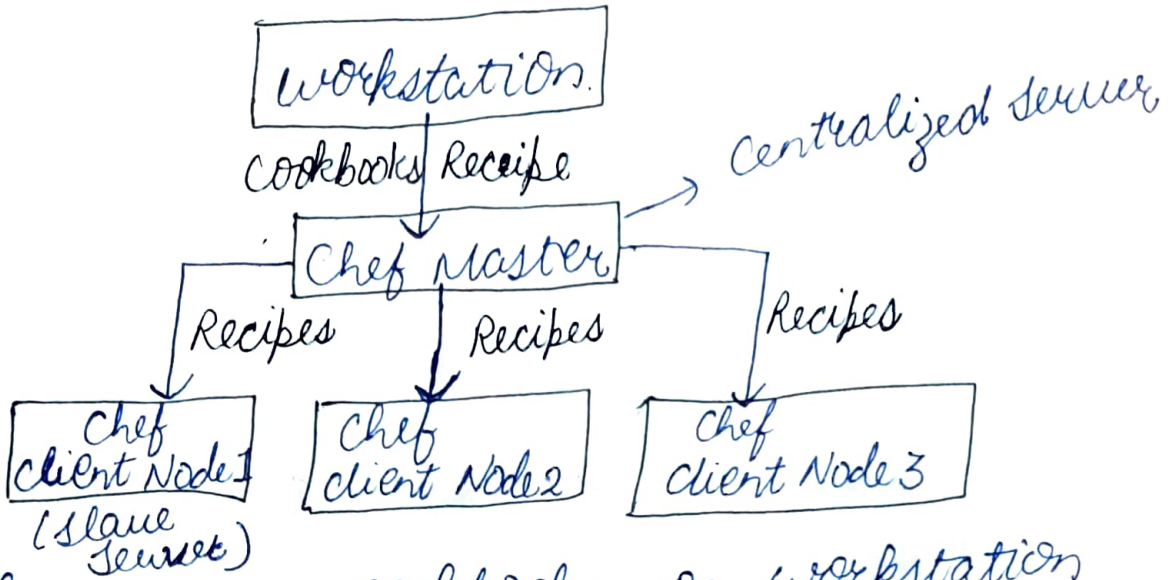
→ To create a maven project we always need pom file.
→ Maven make uses of goals.

Introduction to chef:

It is a Infrastructure configuration & Management tool.

In Infrastructure as code everything should be automated. Chef is tool for configuration & automation.

→



→ we prepare these cookbooks on workstation.

Containers: They share resources among them. They are very light virtual machines. They are more portable, more scalable. e.g. villa is an example of virtual machine where as containers are as apartment.

→ Docker make the concept of containers popular.

→ Containers are the new growing thing in the market.

Certificate of Completion

This is to certify that Garima Thakur successfully completed 2 total hours of DevOps Fundamentals online course on April 20, 2021

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