Aayushi Kalia
802032001

DevOps Fundamentals

Devops culture is guided by Devops principles such as Infrastructure as code, automation, continuous Integration, continuous deployment and is implemented by some devops tools.

There are seven basic principles of Devops.

1. <u>Incremental</u> - dividing the project into small tasks
2. <u>Iterative</u> - multiple cycles of designing, coding, building, testing and deployment.
3. <u>Automated</u> - makes the project resource efficient, fast, scalable, repeatable and less error prone.
4. <u>Continuous</u> - repeating the cycle multiple times a day.
5. <u>Collaborative</u> - bringing together development and operations teams.
6. <u>Self-service</u> - sufficient skills + knowledge to complete tasks (not dependent)
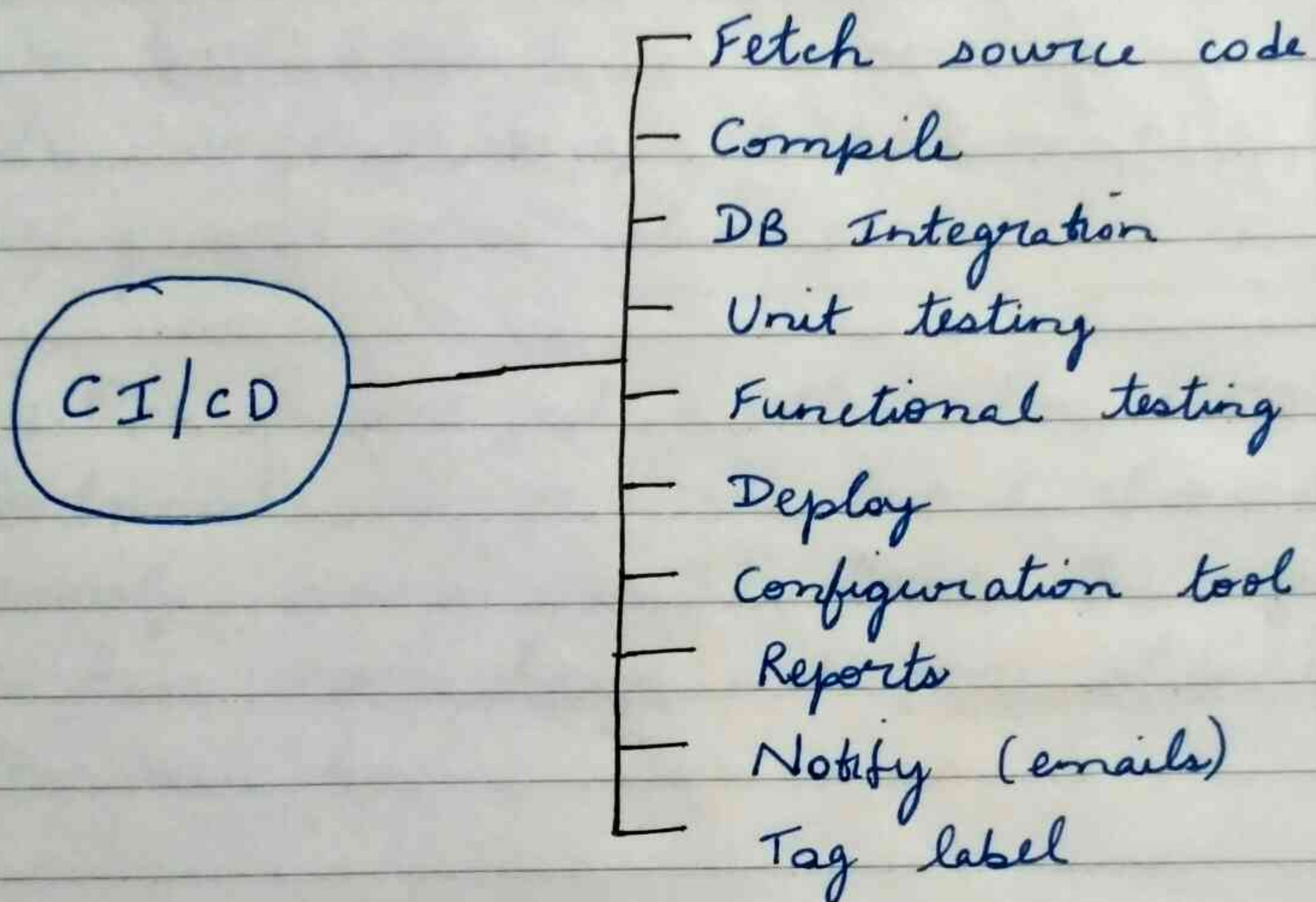7. <u>Holistic</u> - knowledge about the whole ecosystem.

This course also consists of devops pipeline, using the CI/CD tool - Jenkins and learning to use the source code management tool - Git.

Version control system enables to track files, compare changes over time, track who modified the code, when was it done, and which feature was modified. Git work in a distributed manner, which means a if some changes are to be done in a project, the code can be used on the developer's machines from the centralized repository.
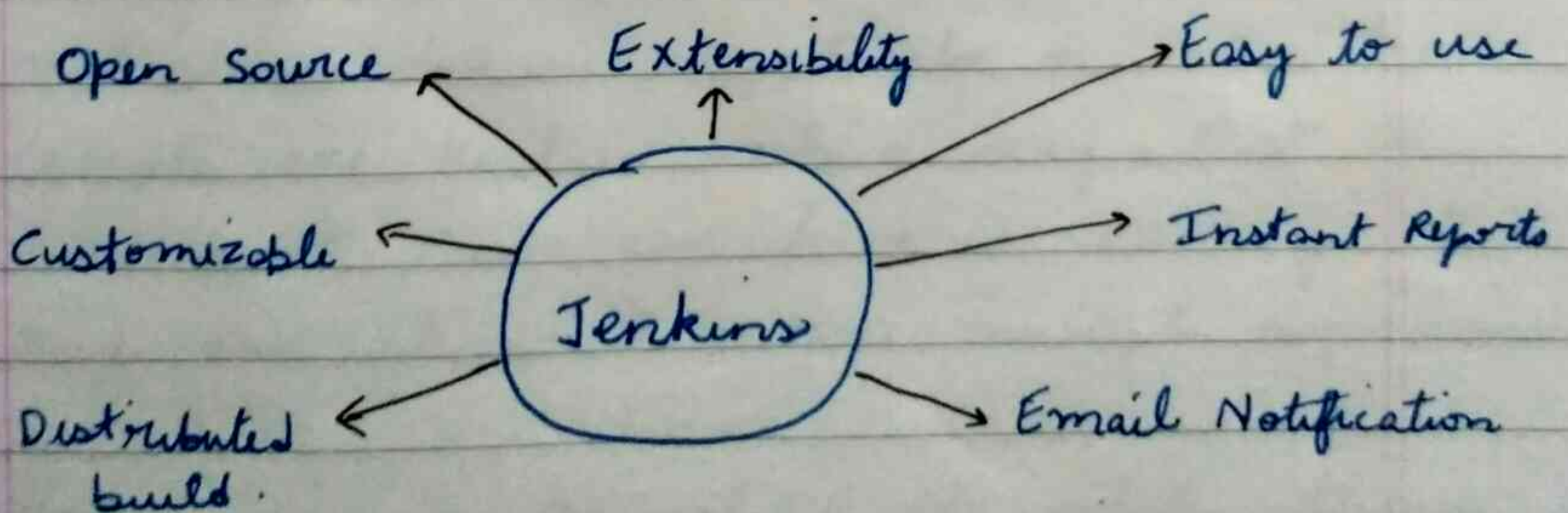
Git is open source and can be installed for free. Repository can be created and the code can be pushed onto them. Various commands are also covered in this course:

- git log - for tracking changes and viewing the commit history
- git commit -m "Message" - for saving changes in the repository.
- git add * - for adding changes to staging area.
- git status - displaying the state of working directory.
- git rm - to remove files from repository.
- git branch - to view all branches.
- git branch name - to create a new branch.
- git merge <branch name> to merge branches.

Jenkins is a CI/CD tool used in Devops
A CI/CD tool does the following:

CI/CD
- Fetch source code
- Compile
- DB Integration
- Unit testing
- Functional testing
- Deploy
- Configuration tool
- Reports
- Notify (emails)
- Tag label

Jenkins features include

Open Source
Extensibility
Easy to use
Customizable
Jenkins
Instant Reports
Distributed build.
Email Notification

Other topics covered were devops pipeline using Jenkins, introduction to Chef and Containers.

Certificate of Completion

This is to certify that **Aayushi Kalia** successfully completed 2 total hours of **DevOps Fundamentals** online course on April 21, 2021

Ed Yoda Digital University
EdYoda Digital University, Instructor

Ashish Pandey
Ashish Pandey, Instructor

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