**VCS – VERSION CONTROLS SYSTEM**

**# LOCAL REPOSITORY**

**Git help** -- > It provides several frequently used git commands

**Git help** < **cmd** – **name** > ---> It opens documentation of that command

**Git init** - It is used to create an empty repository or re-initialize an existing repository.

**Git init** **status** – This command will display the status of the current repository

**Staged Files**

Files which are added, and they are ready to commit

These file names will be displayed in ‘Green Color’

**Un-Staged Files**

Modified files will be displayed here, we need to stage these files to commit

These file names will be displayed in ‘Red Colour’

**Un-Tracked Files**

For newly created files, we need to stage them to commit.

These file names will be displayed in ‘Red Colour’

**Git add** - This command is used to add a file to the staging area (where the files are eligible to commit)

Syntax: git add <file – name>

git add --a (all files)

**Git commit:** This command is used to commit our changes to the git local repository

Syntax: git commit -m ‘commit-msg’

**Note:** When we execute the commit command it will consider all the files which are in the staging area

**Note:** Git local repository will be available on our machine only.

**# REMOTE REPOSITORY**

WEEK-2 (04-Jan-2025)

**CI-CD Advantages**

1. Faster Delivery
2. Quick Deployments
3. Fewer Changes of Errors
4. Stability
5. Reliability
6. Quick Bug Fixes
7. Version Controlled
8. Automation

Code + Ticket

---------Pipeline ------------ >>

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Check out the Code** | **Security**  **Component** | **Build** | **Artifactory** | **IIAC** | **Docker** | **K8S** |
|  |  |  |  |  |  |  |
| Git Clone | OWASP | MAVEN | JFrog,  Nexus | Docker  ARGOCD  Ansible |  |  |
|  |  |  |  |  |  |  |

If you’re using the Java code, you will use the Maven.

If you’re using the Android code, you will use the Gradle.

If you’re using the Python code it’ acts like a file (depending on the code)

Containers (Dockers) – Docker is used to convert code into an Image.

Argo CD is a tool used by DevOps engineers that helps with deployments.

Jenkin Parameter

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Tool -1 | Tool – 2 | Tool -3 | Tool – 4 |  |  |  |

Train = Jenkins

Code = Person

Ticket = (Source Destination, Name etc., )

Jenkins – Jenkin file is an important file (Like a Heart)

Docker - Docker file is an important file (Like a Heart)

K8S – K8S file is an important file (Like a Heart)

There are two types of files

1. Declarative Jenkins File (New Type)
   1. Each Git Repository contains one Jenkins File.
2. Scripted Jenkins File (Old Type File)

**Jenkins File**

|  |  |
| --- | --- |
| **Code Block** |  |
| **Pipeline** {  Agents any {  Environment **Variables**{  **Parameters**{  Stages{  Stage  {  Script  { |  |
|  |  |

Java is completely dependent on the (pom.xml) file - Maven

NodeJS/React -> Package.json – npm/node

Android - > build. – gradle

Pom.xml -dependencies

Group ID

Artifact ID

Version ID - 0.**0**.1

Major Version **Minor Version Patch Version**

4) Automation –

Que. How do you update the version of the code using a shell script in the CI CD Pipeline?

Ans. Automatically update the ID of the build by the Shell Script

|  |  |  |  |
| --- | --- | --- | --- |
|  | Build Script  Shell Script |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

[Automatically incrementing a build number in a Java project](https://stackoverflow.com/questions/8988405/automatically-incrementing-a-build-number-in-a-java-project)

Reference - <https://stackoverflow.com/questions/8988405/automatically-incrementing-a-build-number-in-a-java-project>

Home Work

**Visual Studio Code**

Step 1) VS Code Install

Step 2) Git Clone of the repository – in the local laptop.

**Install VS code in the laptop**

Git clone of https://github.com/praveen1994dec/Java\_app\_3.0.git

<https://stackoverflow.com/questions/8988405/automatically-incrementing-a-build-number-in-a-java-project>

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**MAVEN**

Maven only reads the pom.xml file. Once the file is read by Maven,

mvn clean

mvn **install**

mvn build

mvn deploy

**mvn clean install**

Java – MAVEN – TARGET ---

**5) Automation**

Command

Curl – x PUT – U username: Password - T “K8.jar” “url”

x Type of the request Target JFrog URL

<https://stackoverflow.com/questions/8988405/automatically-incrementing-a-build-number-in-a-java-project>

<https://github.com/praveen1994dec/Java_app_3.0>

Jenkin File – Conditional Blocks,

stage {

stage (‘Git Checkout’) {

steps {

gitCheckout(

branch: “main”,

url: <https://github.com/praveen1994dec/Java_app_3.0.git>

)

}

}

A screenshot of a computer

Description automatically generated

Write the Jenkins file with the parallel stage of execution for the security tools in Devops

**DOCKER (11-JAN-2025)**

# Jenkins

**How to install Jenkins on AWS Ec2 instance**

https://medium.com/@oladejit3/how-to-install-jenkins-on-aws-ec2-instance-4ec700f68948

# API Gateway

ChatGPT - Write a Python code to extract the GitHub branches and manipulate the data.

ChatGPT- write a python code for hitting the MySQL database and get the data and extract the data.

ChatGPT-