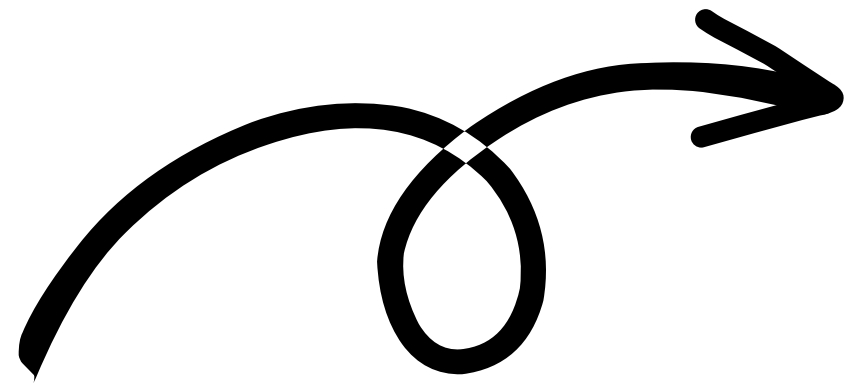


**DEVELOPING**

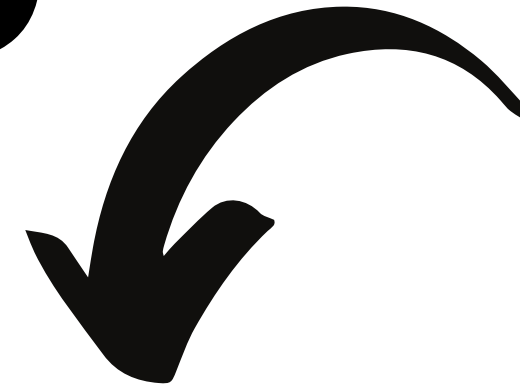


**CI/CD**



**Jenkins**

**TESTING**



# Agenda

## DEPLOY AN APPLICATION IN TOMCAT WEB SERVER USING CI/CD



**GIT:** To maintain the source code.

**MAVEN:** To build the source code.

**SONAR:** For code quality test.

**NEXUS:** To store the artifact.

**TOMCAT:** Webserver to deploy an application.

**JENKINS:** To Integrate all the tools.

## TOOLS USED

1

GIT

2

MAVEN

3

JENKINS

4

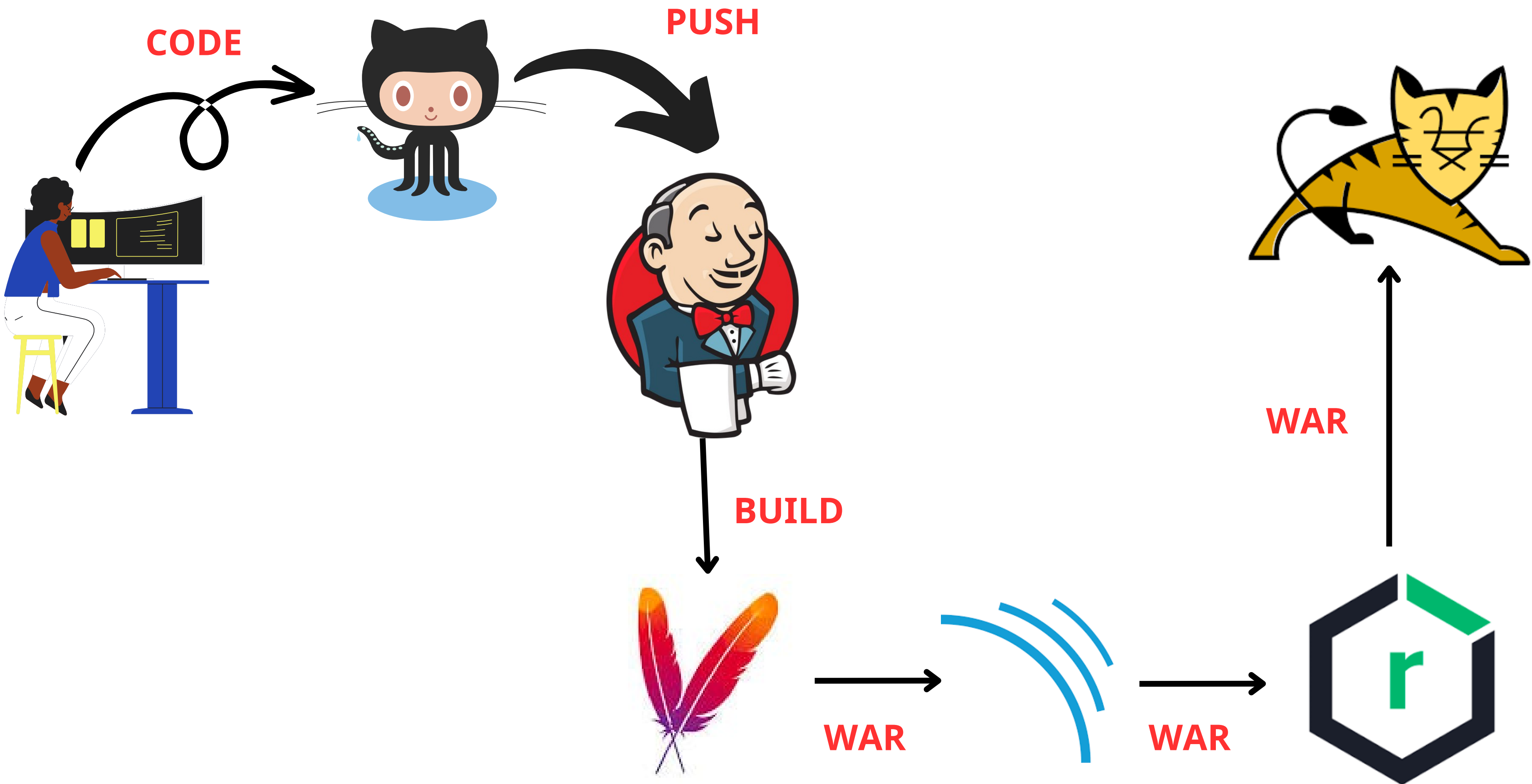
SONAR

5

NEXUS

6

TOMCAT



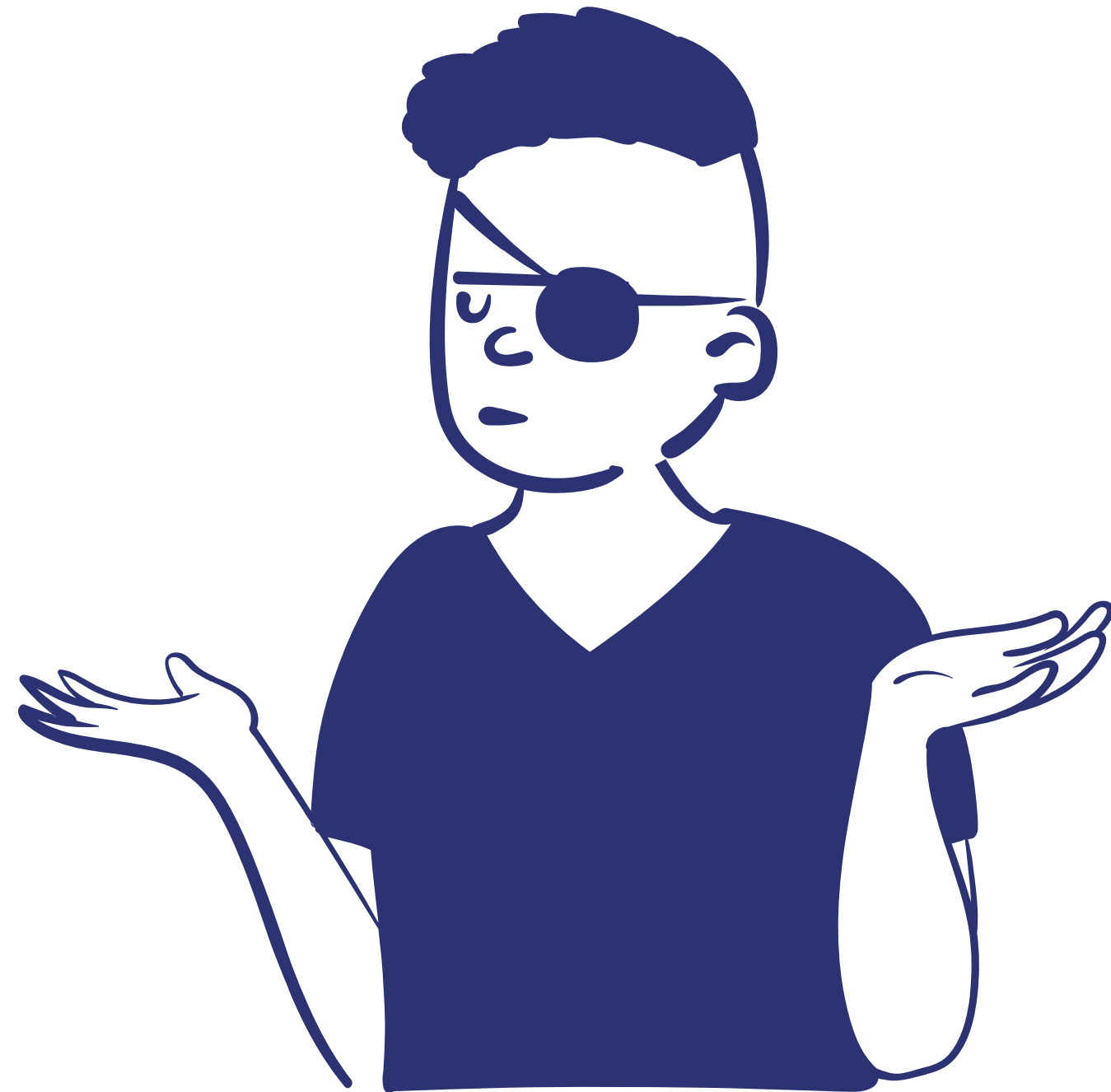
# DEPLOYMENT:

The term Deployments refers the installation of a Web-Application on WebApplication server.

## WHY DEPLOYMENT:

The main reasons of the deployment are:

- Adding New Features to the Application.
- Removing the Bugs.
- Enhancing the New Features.
- Improving the Performance.
- Breaking Large Applications to MicroServices.



## NEED FOR DEPLOYMENT:

- We need to have Infra Setup.
- New Release of code.
- Involvement of Dev, QA and DevOps Team.
- Creating New Db's If needed.
- Approval from RM (in case of New release).

## PRECAUTIONS:

- Need to take Backups of the Current Builds and DataBases.
- Need To Provide Isolated Environments for Dev, Test and Prod.
- Can be able to do RollBack if the Deployment fails in some cases.
- Make sure we are deploying the correct env and Client Application Servers.



## STEP-1:

LAUNCH 4 INSTANCES WITH SAME PEM FILE

- 1.JENKINS: T2.MICRO
- 2.TOMCAT: T2.MICRO
- 3.SONAR: T2.MEDIUM (20 GB OF EBS VOLUME)
- 4.NEXUS: T2.MEDIUM (20 GB OF EBS VOLUME)

SETUP SERVICES IN THEIR RESPECTIVE SERVERS.

## STEP-2:

LOGIN INTO JENKINS DASHBOARD AND INSTALL THESE FOLLOWING PLUGINS

- 1.SONAR SCANNER: to scan the code
- 2.NEXUS ARTIFACTORY UPLOADED: to store the files in nexus
- 3.SSH AGENT: To send the files from one server to another server

## STEP-3:

Create a jenkins pipeline job and write a Jenkins file for deploy a web application, usually we have 2 types of pipelines,

- scripted
- declarative

Here i am using scripted pipeline for the Jenkins file

### STAGE-1 : GET THE CODE FROM GITHUB TO CI-SERVER

---

```
node {  
  stage ("code") {  
    git "https://github.com/Hruday143/one.git"  
  }  
}
```



## STAGE-2 : BUILD THE SOURCE CODE:

GO TO MANAGE JENKINS >> GLOBAL TOOL CONFIGURATION >> MAVEN  
ADD INSTALLER WITH THE NAME OF maven WITH VERISON (3.8.6)

---

```
node {  
  stage ("build"){  
    def mavenHome = tool name: "maven", type: "maven"  
    def mavenCMD = "${mavenHome}/bin/mvn"  
    sh "${mavenCMD} clean package"  
  }  
}
```





## STAGE-3 : SCAN THE SOURCE CODE:

LOGIN INTO SONAR

GO TO MY ACCOUNT >> SECURITY >> ENTER A TOKEN NAME AND GENERATE A TOKEN

NOW INTEGRATE THE SONAR TO JENKINS

MANAGE JENKINS >> CONFIGURE SYSTEM >> SONAR SERVER :

NAME: mysonar

Url: PublicIP:9000/

credentials: —— (username with secretkey)

---

```
node {  
  stage("Test") {  
    withSonarQubeEnv('mysonar')  
    {  
      def mavenHome = tool name: "maven", type: "maven"  
      def mavenCMD = "${mavenHome}/bin/mvn"  
      sh "${mavenCMD} sonar:sonar"  
    }  
  }  
}
```



## STAGE-4 : UPLOAD WAR FILE INTO ARTIFACTORY:

CREATE A REPO IN NEXUS :

Name: mustafa-releases

formar: maven2 hosted

Version policy: releases

Deployment policy: allow redeploy

INSTALL NEXUS ARTIFACTORY UPLOAD PLUGIN

To GENERATE THE PIPELINE SYNTAX, WE NEED TO USE NEXUS ARTIFACTORY UPLOADER IN PIPELINE SYNTAX AND GIVE ALL INPUTS AND GENERATE PIPELINE SYNTAX

---

```
node {  
  stage("upload") {  
    nexusArtifactUploader artifacts: [[artifactId: 'myweb', classifier: '', file: 'target/myweb-8.3.5.war', type:  
'war']], credentialsId: '4949746a-34ae-4d80-aaaa-a73815fda645', groupId: 'in.javahome', nexusUrl:  
'18.117.135.27:8081', nexusVersion: 'nexus3', protocol: 'http', repository: 'mustafa-releases', version: '8.3.5'  
  }  
}
```

## STAGE-5 : DEPLOY THE APPLICATION INTO TOMCAT WEB SERVER:

AND USE PIPELINE SYNTAX

---

```
node {  
  stage ("deploy") {  
    sshagent(['25e8d3a9-62fd-478b-8e4d-2ee40674436f']) {  
      sh "scp -o StrictHostKeyChecking=no /var/lib/jenkins/workspace/pipeline-1/target/myweb-8.3.5.war  
ec2-user@18.117.254.190:/opt/apache-tomcat-9.0.73/webapps"  
    }  
  }  
}
```

