



## GIT & GITHUB



1. Create GITHUB repository in GITHUB
2. Perform Below Git operation (Using HTTPS)
  - a. Clone the repo from github using HTTPS
  - b. Add the files in to it and commit it to local repository
  - c. Push it to the github repository
3. Perform Below Git operation (Using SSH)
  - a. Setup SSH keys
  - b. Clone the repo from github
  - c. Add the files in to it and commit it to local repository
  - d. Push it to the github repository
4. Perform Below Git operation (Using SSH)
  - a. Setup SSH Deploy keys with Read Only access
  - b. Clone the repo from github
  - c. Add the files in to it and commit it to local repository
  - d. Try to Push it to the github repository and ensure you are not allowed push to read only repo.
5. Give access to one more new user to access your github repo.
  - a. Ensure that new user able to push
6. Experience Merge conflict
  - a. Clone the Repo User 1 and User 2
  - b. User 1 modify the changes in Jenkinsfile
  - c. User 1 Push the changes to Github
  - d. User 2 modify the changes in Jenkinsfile
  - e. User 2 Push the changes
  - f. Conflict occurs then Fix the Merge conflict



7. Experiment PULL request
  - a. User 1 Create the PULL request from dev to master
  - b. User 2 Review and approve
  - c. User 1 or User 2 Merge the code to master
  
8. Experiment Git rebase
  - a. Create feature branch from master branch
  - b. Add code to master branch (3 commits)
  - c. Git checkout feature branch
  - d. Git rebase master ( it get all the code from master)
  
9. Find a difference between two commit
  
10. Experiment commit -amend
  - a. Commit the code to local repo
  - b. Change the commit message using commit -amend.

Reference Documents:

- <https://git-scm.com/>
- <https://www.atlassian.com/git/tutorials/learn-git-with-bitbucket-cloud>



## Jenkins:



# Jenkins

1. Installation of Jenkins?
2. Create a new user in Jenkins and login using the new user credentials ?
3. Install Plugins like Deploy to container, description setter, Maven, Role-based matrix plugin
4. Change to Jenkins from default default 8080 port to 8585 port and access the application running on 8585.
5. Experiment role-based plugin by giving limited folder access to the user?
6. Create Free Style Maven project to Build a Java WAR application?
7. Create Free Style Maven project to Deploy a Java WAR application?
8. Create simple pipeline **template** which demonstrates code pull → Build → Test → Sonar Scan → artifact upload → Then deploy to DEV → Approval then Deploy to UAT.
9. Create Jenkins Pipeline Job build a WAR file and deploy (Windows)?
10. Add a AWS RHEL machine as Slave to your Jenkins Master (Running on Windows)
11. Create a Jenkins Pipeline Job build a Java WAR file and deploy (RHEL Linux Agent) ?
12. Create the Jenkins pipeline for build a war file and copy the war file in to docker image and deploy the image on (RHEL Linux Agent)



## Docker:



- Installation of Docker in the RHEL machine?
- Experiment Docker commands from Putty
  - LOGIN
  - PULL
  - BUILD
  - TAG
  - PUSH
  - LOGOUT
- Experiment Docker-Run to Run the WAR application which resides inside the Docker image
- Check the list of container running then stop and remove the container and deploy new docker image using docker-run



## Linux



1. How to login to Linux Servers?
2. Execute Linux commands ls,cd,cp,scp,mv etc
3. How to install using YUM?
4. How to uninstall using YUM?
5. How to start/stop/status the service running in linux?
6. How to check application running on which port ?
7. How to find where is the tools installed?
8. How to find disk usage?
9. How to find where is the file located?
10. How to grep in text file?
11. How to use CURL command to download?



#### Amazon Web Services:

1. Create AWS RHEL instance and login ?
2. Create AWS Windows instance and login?
3. Enable the Inbound and Outbound ports?
4. Demonstrate AWS Load balancer?
5. Demonstrate AWS Auto scaling?