

01) What is Jenkins pipeline?

Automating some processes through the project, automating building, integration or delivery.

02) What scripting language is Jenkins pipeline syntax based on?

Groovy.

03) What are the ways you can write pipeline in Jenkins?

Declarative or scripted.

04) Create declarative in jenkins GUI pipeline for your own repo to do "ls"

```
pipeline {
  agent any

  stages {
    stage('Getting repo files') {
      steps {
        git branch: 'main', credentialsId: 'GitHub', url:
'https://github.com/Dina-Adel-1302/Facebook_Clone.git'
      }
    }

    stage('ls') {
      steps {
        sh 'ls'
      }
    }
  }
}
```

05) Create scripted in jenkins GUI pipeline for your own repo to do "ls"

```
node {
  stage('Preparation') { // for display purposes
    // Get some code from a GitHub repository
    git branch: 'main', credentialsId: 'GitHub', url:
'https://github.com/Dina-Adel-1302/Facebook_Clone.git'
    sh 'ls'
  }
}
```

06) Create the same with jenkinsfile in your branches as multibranch pipeline

```
pipeline {
  agent any

  stages {
    stage('Getting repo files') {
      steps {
        git branch: '${GIT_BRANCH}', credentialsId: 'GitHub', url: 'https://github.com/Dina-Adel-1302/nodejsapi.git'
      }
    }
  }
}
```

```
}  
}  
}
```

07) Configure Jenkins image to run Docker commands on your host Docker daemon.

`-v /var/run/docker.sock:/var/run/docker.sock`

08) Create CI/CD for this repo https://github.com/ahmedKhaled1995/simple_nodejs_app

```
pipeline {
```

```
    agent any
```

```
    stages {
```

```
        stage('Getting repo files') {
```

```
            steps {
```

```
                git branch: '${GIT_BRANCH}', credentialsId: 'GitHub', url: 'https://github.com/Dina-Adel-1302/nodejsapi.git'
```

```
            }
```

```
        }
```

```
    }
```

```
}
```

09) Using Terraform:

1- Launch an EC2 instance

2- Attach a security group to that allows SSH (port 22) from anywhere (0.0.0.0/0)

3- Attach a security group to that allows traffic from port 3000 from anywhere (0.0.0.0/0)

09) Using Ansible:

1- Configure the launched EC2 instance from question 8 to have:

a) Java 8 or higher installed

b) Install Docker.

4- Run the pipeline from question 8 on the Jenkins slave machine.

5- Send pipeline status to Slack.