**Deploying the Java project in Docker with Jenkins Pipeline**

-First create the server

-then install the openjdk-17-jre, maven

-and also install and run the Jenkins and Docker

-configure the port numbers 22, 8080 and 8081 in security group for the server

now open the Jenkins with public ip and port number (8080)

-then login and configure jenkins

plugins: install required plugins, like: Docker, Eclipse

tools: configure the required tools, like: jdk, docker

-create a new pipeline and configure with sample hello world project

like: pipeline {

agent any

stages {

stage('Hello') {

steps {

echo 'Hello World'

}

}

}

}

-update the script with required tools

like: pipeline {

agent any

tools {

jdk 'jdk-11'

}

}

-then open "configuration" and select "pipeline syntax" in the "pipeline" tab

-and select the checkout option in sample steps

-then provide the required details

github url:

credentials:

branch:

-then click on "Generate pipeline Script" option

-now copy and paste that script in the pipeline script

like: pipeline {

agent any

tools {

jdk 'jdk-17'

}

stages {

stage('Git-Checkout') {

steps {

checkout scmGit(branches: [[name: '\*/main']], extensions: [], userRemoteConfigs: [[credentialsId: 'my-github', url: 'https://github.com/dinesh-4136/JavaWebCalculator.git']])

}

}

}

}

-then save and run the pipeline, then checkout stage will run

-then update the pipeline script to produce the artifact

like: pipeline {

agent any

tools {

jdk 'jdk-17'

}

stages {

stage('Git-Checkout') {

steps {

checkout scmGit(branches: [[name: '\*/main']], extensions: [], userRemoteConfigs: [[credentialsId: 'my-github', url: 'https://github.com/dinesh-4136/JavaWebCalculator.git']])

}

}

stage('Package') {

steps {

sh 'mvn package'

}

}

}

}

-then update the script to build the docker image

like: pipeline {

agent any

tools {

jdk 'jdk-17'

}

stages {

stage('Git-Checkout') {

steps {

checkout scmGit(branches: [[name: '\*/main']], extensions: [], userRemoteConfigs: [[credentialsId: 'my-github', url: 'https://github.com/dinesh-4136/JavaWebCalculator.git']])

}

}

stage('Package') {

steps {

sh 'mvn package'

}

}

stage('Build and Run Docker Image') {

steps {

sh 'docker build -t myapp1:v1 .'

sh 'docker run --name myapp1 -d -p 8081:8080 myapp1:v1'

}

}

}

}

-then check whether the application is running or not: 0.000.000.00(ip):8081(port)/webapp-0.1