Assignment - 6 - Build Jenkins Pipeline for 3 tier architecture involving Nodejs, ReactJS & mysql

(You can refer the manual setup of server & client side, and you need to implement this in pipeline script)

Node.js project

Create a pipeline job in several stages which includes,

(Have 2 vm machines, one for running jenkins jobs and other machine for code deployment. You can use scp command for copy the build to destination server)

1. Running the server code using npm nodejs and npm tool
2. You can add scm poll to trigger the jenkins job if there is any new changes in the github code
3. Build client code using npm build, and host it in a nginx web server

4. Integrating sonarqube for checking the code quality

5. Create a quality gate in sonarqube and integrate it with jenkins using webhook
6.Triggering a mail upon post build in case of success or failure

(On successful running of the script you should be able to access the web page)

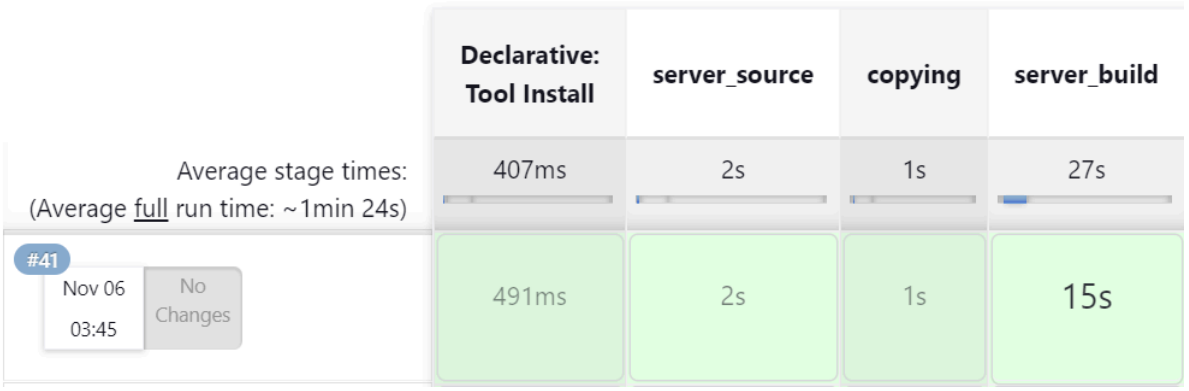
A: **server side script**

```
pipeline {
   agent any
   triggers{
      pollSCM('00 00 * * 1-7')
   }
   tools {
      nodejs 'nodejsv17'
   }
   environment {
      password = credentials('sql_key')
   }
   stages {
      stage('server_source'){
         steps{
            git branch: 'main', url: 'https://github.com/pranaykumar0/nodejs_server'
         }
      }
      stage('copying'){
         steps{

            sh "mysql -u root -p${password} < doctor_appointment.sql"
         }

      }
      stage('server_build'){
         steps{
            sh 'npm install'
```

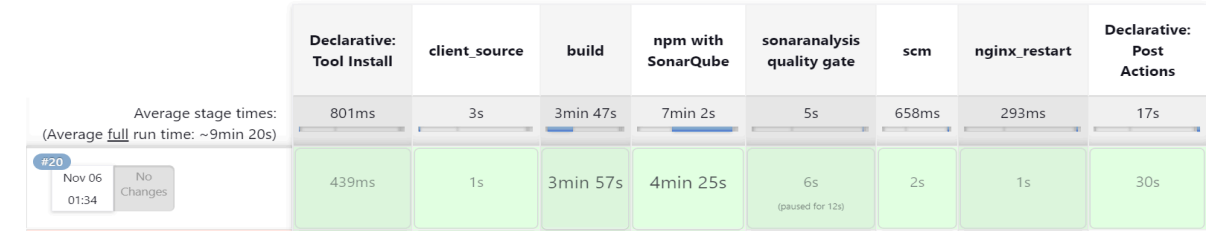
```
            sh 'npm start &'
        }
    }
  }
}
```

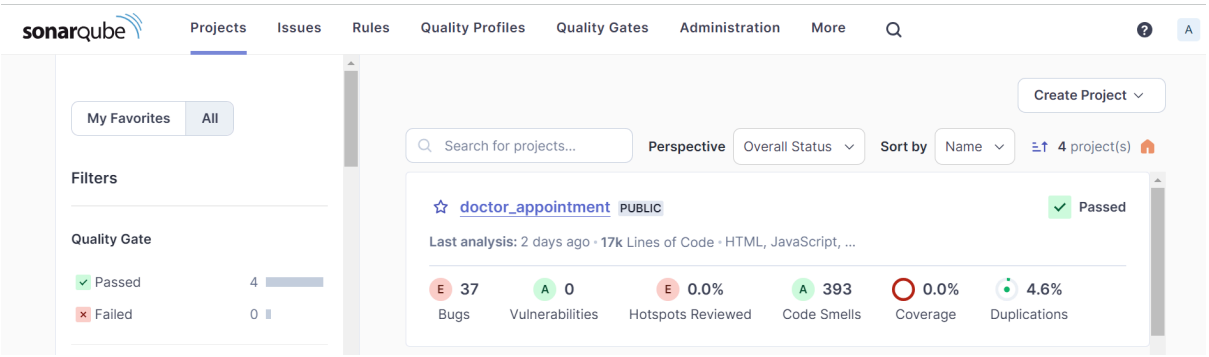


Client side script

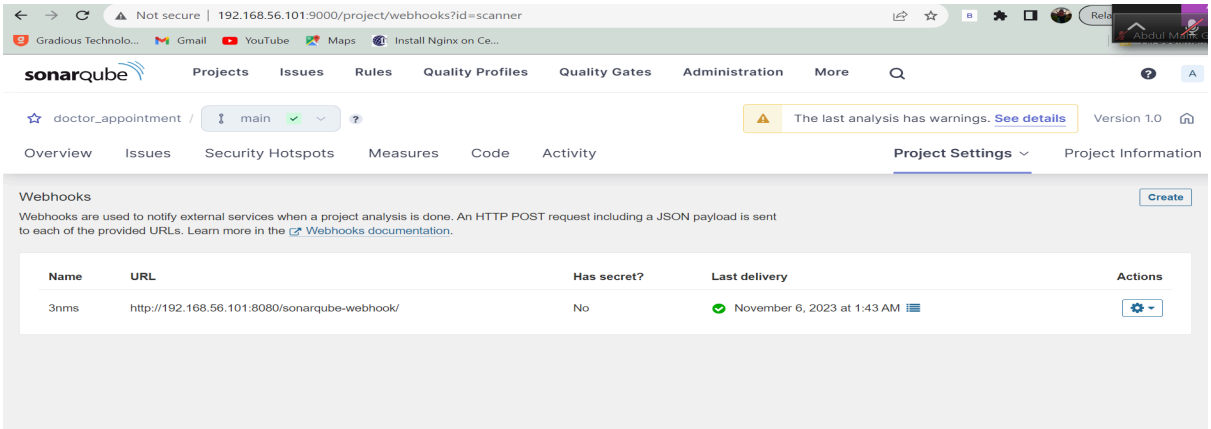
```
pipeline{
   agent any
   tools {
      nodejs 'nodejsv17'
      jdk 'jdk11'
   }
   stages{
      stage('client_source'){
         steps{
            git branch: 'main', url: 'https://github.com/pranaykumar0/nodejs_client'
         }
      }
      stage('build'){
         steps{
            script{
               withEnv(['CI=false']){
                  sh "npm install"
                  sh "npm run build"
               }
            }
         }
      }
      stage('npm with SonarQube') {
         steps {
            withSonarQubeEnv('sonar') {
               //sh "${SCANNER_HOME}/bin/sonar-scanner
-Dsonar.projectName=npmclient -Dsonar.projectKey=npmsclient -Dsonar.sources=.
-Dsonar.language=js"
```

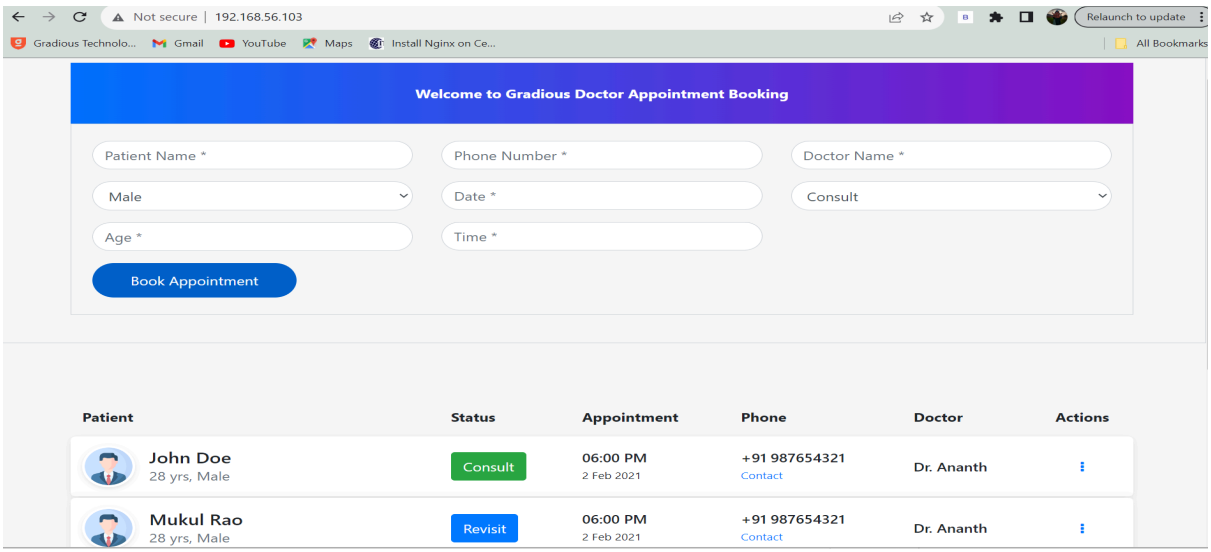
```
                sh """
                sonar-scanner \
                -Dsonar.projectKey=scanner \
                -Dsonar.sources=. \
                -Dsonar.host.url=http://192.168.56.101:9000
                """
            }
        }
    }
    stage('sonaranalysis quality gate'){
        steps{
            timeout(time: 5, unit: 'MINUTES'){
                waitForQualityGate abortPipeline: true
            }
        }
    }
    stage('scm'){
        steps{
            // copying build to 2nd vm
            sh "scp -r /var/lib/jenkins/workspace/3tier_client/build
root@192.168.56.103:/usr/share/nginx/html/"
            // removing the existing main file
            sh "ssh root@192.168.56.103 'rm -r
/usr/share/nginx/html/build/static/js/main.e1bfeb91.js'"
            // copying main file to vm
            sh "scp -r /home/pranay/main.e1bfeb91.js
root@192.168.56.103:/usr/share/nginx/html/build/static/js/"
        }
    }
    stage('nginx_restart'){
        steps{
            sh "ssh root@192.168.56.103 'systemctl restart nginx'"
        }
    }
  }
    post{
        success{
            mail bcc: '', body: 'check the site! the pipe has been executed', cc: '', from: '',
replyTo: '', subject: '3 tier project', to: 'pranaygujja555@gmail.com'
        }
        failure{
            mail bcc: '', body: 'check the site! the pipe has failed', cc: '', from: '', replyTo:
'', subject: '3 tier project', to: 'pranaygujja555@gmail.com'
        }
    }
}
```


Declarative: Tool Install
client_source
build
npm with SonarQube
sonaranalysis quality gate
scm
nginx_restart
Declarative: Post Actions
Average stage times:
(Average full run time: ~9min 20s)
801ms
3s
3min 47s
7min 2s
5s
658ms
293ms
17s
#20
Nov 06
01:34
No Changes
439ms
1s
3min 57s
4min 25s
6s
(paused for 12s)
2s
1s
30s


sonarqube
Projects
Issues
Rules
Quality Profiles
Quality Gates
Administration
More
My Favorites
All
Filters
Quality Gate
Passed 4
Failed 0
Create Project
Search for projects...
Perspective
Overall Status
Sort by
Name
4 project(s)
doctor_appointment
PUBLIC
Passed
Last analysis: 2 days ago • 17k Lines of Code • HTML, JavaScript, ...
37 Bugs
0 Vulnerabilities
0.0% Hotspots Reviewed
393 Code Smells
0.0% Coverage
4.6% Duplications

Token


Not secure | 192.168.56.101:9000/project/webhooks?id=scanner
Gradious Technolo...
Gmail
YouTube
Maps
Install Nginx on Ce...
sonarqube
Projects
Issues
Rules
Quality Profiles
Quality Gates
Administration
More
doctor_appointment
main
The last analysis has warnings. See details
Version 1.0
Overview
Issues
Security Hotspots
Measures
Code
Activity
Project Settings
Project Information
Webhooks
Create
Webhooks are used to notify external services when a project analysis is done. An HTTP POST request including a JSON payload is sent to each of the provided URLs. Learn more in the Webhooks documentation.
Name
URL
Has secret?
Last delivery
Actions
3nms
http://192.168.56.101:8080/sonarqube-webhook/
No
November 6, 2023 at 1:43 AM


Not secure | 192.168.56.103
Relaunch to update
Gradious Technolo...
Gmail
YouTube
Maps
Install Nginx on Ce...
All Bookmarks
Welcome to Gradious Doctor Appointment Booking
Patient Name *
Phone Number *
Doctor Name *
Male
Date *
Consult
Age *
Time *
Book Appointment
Patient
Status
Appointment
Phone
Doctor
Actions
John Doe
28 yrs, Male
Consult
06:00 PM
2 Feb 2021
+91 987654321
Contact
Dr. Ananth
Mukul Rao
28 yrs, Male
Revisit
06:00 PM
2 Feb 2021
+91 987654321
Contact
Dr. Ananth

3 tier project

Inbox ×

pranaygujja555@gmail.com
to me

check the site! the pipe has been executed

Reply Forward