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Project: Dockerize & Deploy a Python Application Using Jenkins CI/CD

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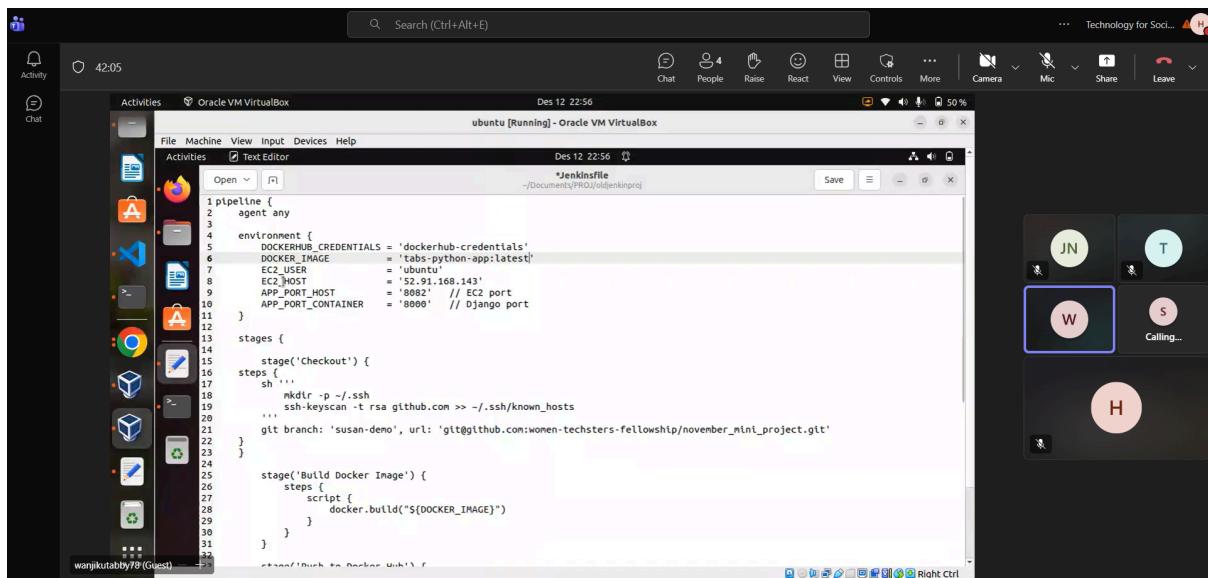
Shahd Abd-Ellatif

Juliet Nwaeze

Tupochele Chatuwa

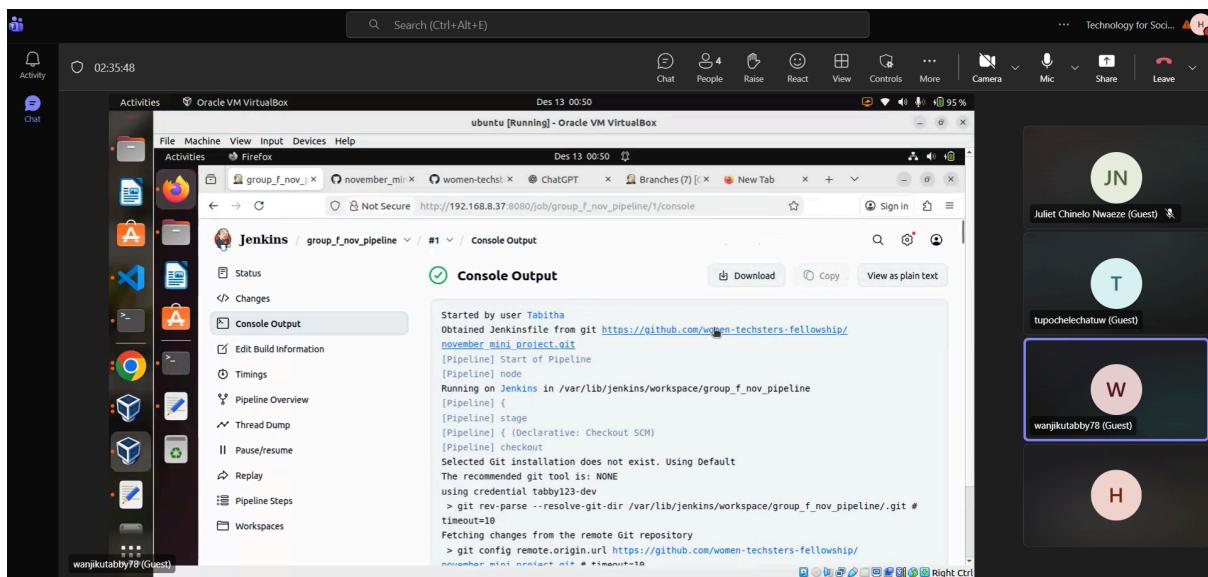
Tabitha Ndungu

1. Jenkinsfile



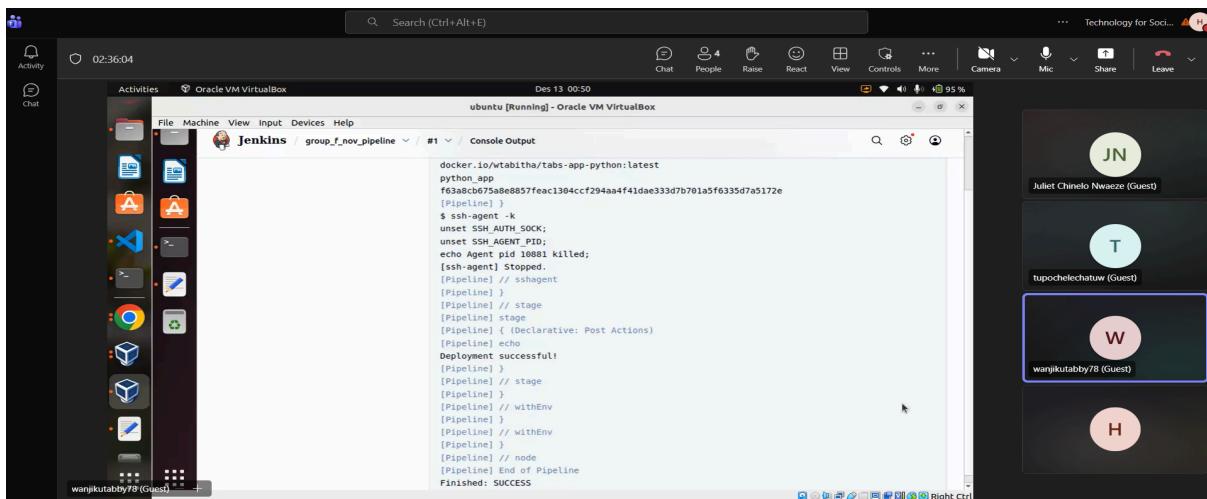
```
1 pipeline {
2     agent any
3     environment {
4         DOCKERHUB_CREDENTIALS = 'dockerhub-credentials'
5         DOCKER_IMAGE = 'tabs-python-appletest'
6         EC2_USER = 'ubuntu'
7         EC2_HOST = '52.91.168.143'
8         APP_PORT_HOST = '8882' // EC2 port
9         APP_PORT_CONTAINER = '8000' // Django port
10    }
11
12    stages {
13        stage('Checkout') {
14            steps {
15                sh '''
16                    ssh -p ~/.ssh
17                    ssh-keyscan -t rsa github.com >> ~/.ssh/known_hosts
18                    ...
19                    git branch: 'susan-demo', url: 'git@github.com:women-techsters-fellowship/november_mini_project.git'
20                }
21            }
22        }
23
24        stage('Build Docker Image') {
25            steps {
26                script {
27                    docker.build("${DOCKER_IMAGE}")
28                }
29            }
30        }
31    }
32}
```

2. Jenkins Job Console Output

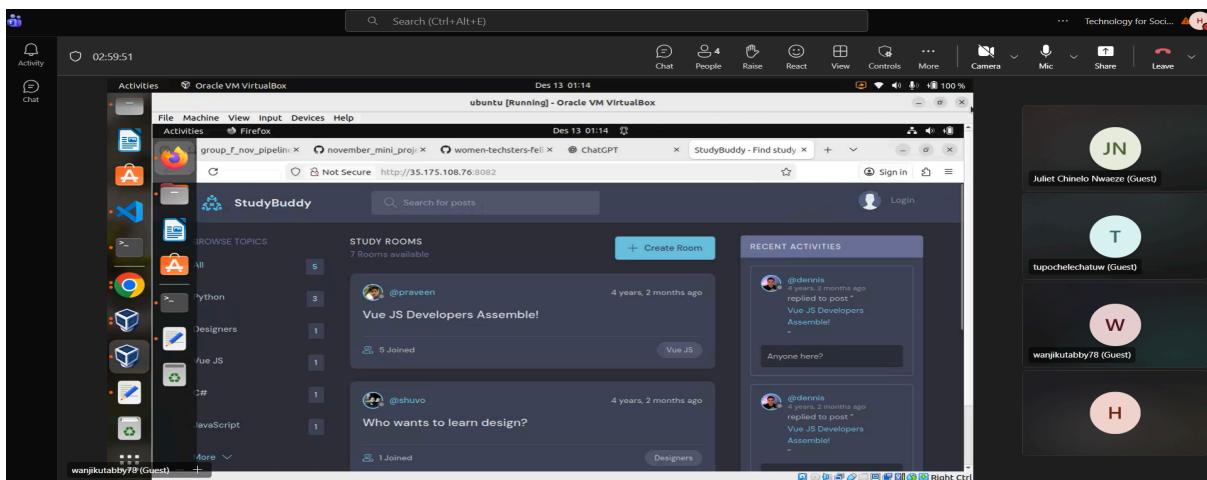


Jenkins group_f_nov_pipeline #1 / Console Output

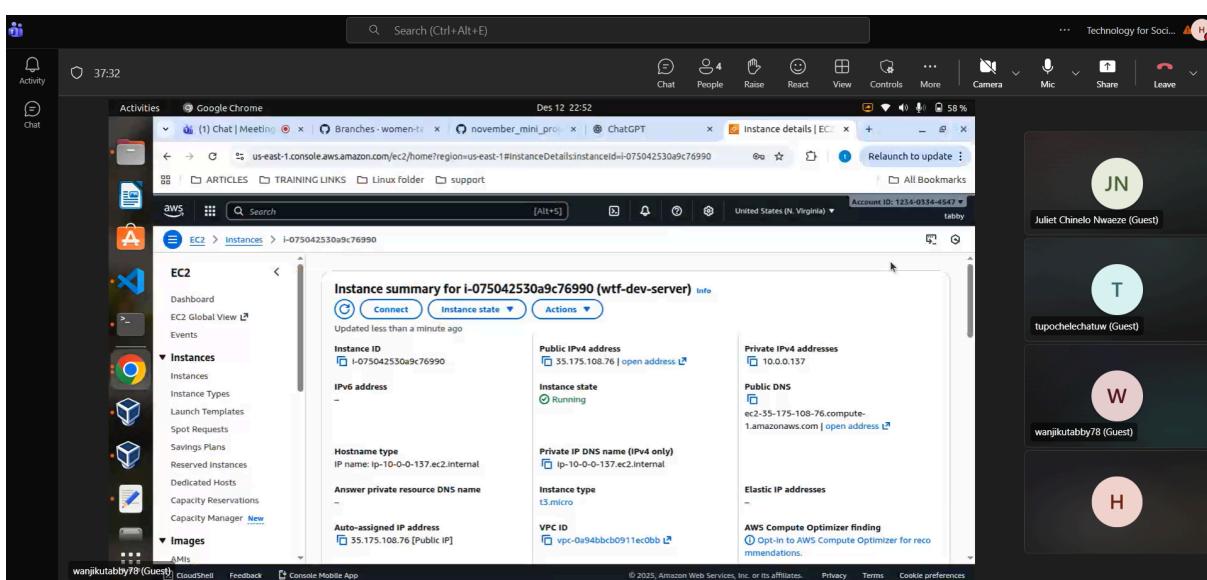
```
Started by user Tabitha
Obtained Jenkinsfile from git https://github.com/women-techsters-fellowship/november_mini_project.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/group_f_nov_pipeline
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
Selected git installation does not exist. Using Default
The recommended git tool is: NONE
using credential Tabby123-dev
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/group_f_nov_pipeline/.git #
timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/women-techsters-fellowship/november_mini_project.git #
timeout=10
> git fetch --tags --progress
> git config remote.origin.fetch +refs/heads/*:refs/remotes/origin/*
> git checkout -f 52.91.168.143:8882
> git rev-parse --verify HEAD
[Pipeline] }
```



3. Live Application



4. EC2 instance public IP address - 35.175.108.76



5. App port is mapped to 8082

The screenshot shows the AWS CloudWatch Metrics Insights interface. A query has been run against the EC2 metric stream, resulting in a table of data. The table includes columns for Metric Name, Metric Value, and Time. The data shows various EC2 instances with their respective instance IDs and status codes (200 or 404). The time range for the data is from 2023-09-13T00:00:00Z to 2023-09-13T01:00:00Z.

Metric Name	Metric Value	Time
EC2/Status/200	1	2023-09-13T00:00:00Z
EC2/Status/200	1	2023-09-13T00:01:00Z
EC2/Status/200	1	2023-09-13T00:02:00Z
EC2/Status/200	1	2023-09-13T00:03:00Z
EC2/Status/200	1	2023-09-13T00:04:00Z
EC2/Status/200	1	2023-09-13T00:05:00Z
EC2/Status/200	1	2023-09-13T00:06:00Z
EC2/Status/200	1	2023-09-13T00:07:00Z
EC2/Status/200	1	2023-09-13T00:08:00Z
EC2/Status/200	1	2023-09-13T00:09:00Z
EC2/Status/200	1	2023-09-13T00:10:00Z
EC2/Status/200	1	2023-09-13T00:11:00Z
EC2/Status/200	1	2023-09-13T00:12:00Z
EC2/Status/200	1	2023-09-13T00:13:00Z
EC2/Status/200	1	2023-09-13T00:14:00Z
EC2/Status/200	1	2023-09-13T00:15:00Z
EC2/Status/200	1	2023-09-13T00:16:00Z
EC2/Status/200	1	2023-09-13T00:17:00Z
EC2/Status/200	1	2023-09-13T00:18:00Z
EC2/Status/200	1	2023-09-13T00:19:00Z
EC2/Status/200	1	2023-09-13T00:20:00Z
EC2/Status/200	1	2023-09-13T00:21:00Z
EC2/Status/200	1	2023-09-13T00:22:00Z
EC2/Status/200	1	2023-09-13T00:23:00Z
EC2/Status/200	1	2023-09-13T00:24:00Z
EC2/Status/200	1	2023-09-13T00:25:00Z
EC2/Status/200	1	2023-09-13T00:26:00Z
EC2/Status/200	1	2023-09-13T00:27:00Z
EC2/Status/200	1	2023-09-13T00:28:00Z
EC2/Status/200	1	2023-09-13T00:29:00Z
EC2/Status/200	1	2023-09-13T00:30:00Z
EC2/Status/200	1	2023-09-13T00:31:00Z
EC2/Status/200	1	2023-09-13T00:32:00Z
EC2/Status/200	1	2023-09-13T00:33:00Z
EC2/Status/200	1	2023-09-13T00:34:00Z
EC2/Status/200	1	2023-09-13T00:35:00Z
EC2/Status/200	1	2023-09-13T00:36:00Z
EC2/Status/200	1	2023-09-13T00:37:00Z
EC2/Status/200	1	2023-09-13T00:38:00Z
EC2/Status/200	1	2023-09-13T00:39:00Z
EC2/Status/200	1	2023-09-13T00:40:00Z
EC2/Status/200	1	2023-09-13T00:41:00Z
EC2/Status/200	1	2023-09-13T00:42:00Z
EC2/Status/200	1	2023-09-13T00:43:00Z
EC2/Status/200	1	2023-09-13T00:44:00Z
EC2/Status/200	1	2023-09-13T00:45:00Z
EC2/Status/200	1	2023-09-13T00:46:00Z
EC2/Status/200	1	2023-09-13T00:47:00Z
EC2/Status/200	1	2023-09-13T00:48:00Z
EC2/Status/200	1	2023-09-13T00:49:00Z
EC2/Status/200	1	2023-09-13T00:50:00Z
EC2/Status/200	1	2023-09-13T00:51:00Z
EC2/Status/200	1	2023-09-13T00:52:00Z
EC2/Status/200	1	2023-09-13T00:53:00Z
EC2/Status/200	1	2023-09-13T00:54:00Z
EC2/Status/200	1	2023-09-13T00:55:00Z
EC2/Status/200	1	2023-09-13T00:56:00Z
EC2/Status/200	1	2023-09-13T00:57:00Z
EC2/Status/200	1	2023-09-13T00:58:00Z
EC2/Status/200	1	2023-09-13T00:59:00Z
EC2/Status/200	1	2023-09-13T01:00:00Z
EC2/Status/404	1	2023-09-13T00:00:00Z
EC2/Status/404	1	2023-09-13T00:01:00Z
EC2/Status/404	1	2023-09-13T00:02:00Z
EC2/Status/404	1	2023-09-13T00:03:00Z
EC2/Status/404	1	2023-09-13T00:04:00Z
EC2/Status/404	1	2023-09-13T00:05:00Z
EC2/Status/404	1	2023-09-13T00:06:00Z
EC2/Status/404	1	2023-09-13T00:07:00Z
EC2/Status/404	1	2023-09-13T00:08:00Z
EC2/Status/404	1	2023-09-13T00:09:00Z
EC2/Status/404	1	2023-09-13T00:10:00Z
EC2/Status/404	1	2023-09-13T00:11:00Z
EC2/Status/404	1	2023-09-13T00:12:00Z
EC2/Status/404	1	2023-09-13T00:13:00Z
EC2/Status/404	1	2023-09-13T00:14:00Z
EC2/Status/404	1	2023-09-13T00:15:00Z
EC2/Status/404	1	2023-09-13T00:16:00Z
EC2/Status/404	1	2023-09-13T00:17:00Z
EC2/Status/404	1	2023-09-13T00:18:00Z
EC2/Status/404	1	2023-09-13T00:19:00Z
EC2/Status/404	1	2023-09-13T00:20:00Z
EC2/Status/404	1	2023-09-13T00:21:00Z
EC2/Status/404	1	2023-09-13T00:22:00Z
EC2/Status/404	1	2023-09-13T00:23:00Z
EC2/Status/404	1	2023-09-13T00:24:00Z
EC2/Status/404	1	2023-09-13T00:25:00Z
EC2/Status/404	1	2023-09-13T00:26:00Z
EC2/Status/404	1	2023-09-13T00:27:00Z
EC2/Status/404	1	2023-09-13T00:28:00Z
EC2/Status/404	1	2023-09-13T00:29:00Z
EC2/Status/404	1	2023-09-13T00:30:00Z
EC2/Status/404	1	2023-09-13T00:31:00Z
EC2/Status/404	1	2023-09-13T00:32:00Z
EC2/Status/404	1	2023-09-13T00:33:00Z
EC2/Status/404	1	2023-09-13T00:34:00Z
EC2/Status/404	1	2023-09-13T00:35:00Z
EC2/Status/404	1	2023-09-13T00:36:00Z
EC2/Status/404	1	2023-09-13T00:37:00Z
EC2/Status/404	1	2023-09-13T00:38:00Z
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EC2/Status/404	1	2023-09-13T00:49:00Z
EC2/Status/404	1	2023-09-13T00:50:00Z
EC2/Status/404	1	2023-09-13T00:51:00Z
EC2/Status/404	1	2023-09-13T00:52:00Z
EC2/Status/404	1	2023-09-13T00:53:00Z
EC2/Status/404	1	2023-09-13T00:54:00Z
EC2/Status/404	1	2023-09-13T00:55:00Z
EC2/Status/404	1	2023-09-13T00:56:00Z
EC2/Status/404	1	2023-09-13T00:57:00Z
EC2/Status/404	1	2023-09-13T00:58:00Z
EC2/Status/404	1	2023-09-13T00:59:00Z
EC2/Status/404	1	2023-09-13T01:00:00Z