St. Francis Institute of Technology, Mumbai-400 103
Department Of Information Technology

A.Y. 2023-2024
Class: TE-ITA/B, Semester: V

Subject: **DevOps Lab**

Experiment – 8: To setup and run Selenium tests in Jenkins using Maven.

1. **Aim:** To setup and run Selenium tests in Jenkins using Maven
2. **Objectives:** Aim of this experiment is that, the students will learn:
   - Selenium and how to automate your test cases for testing web elements
   - Introduction to X-Path, TestNG and integrate Selenium with Jenkins and Maven.
3. **Outcomes:** After study of this experiment, the students will learn following:
   - Introduction to Selenium
   - Installing Selenium
   - Creating Test Cases in Selenium WebDriver
   - Run Selenium Tests in Jenkins Using Maven
4. **Prerequisite:** Knowledge of Software Engineering concept of testing and test cases.
5. **Requirements:** Jenkins, JDK, Eclipse IDE, Firefox browser, Personal Computer, Windows operating system, Internet Connection, Microsoft Word.
6. **Pre-Experiment Exercise:**
   Brief Theory: Refer shared material
7. **Laboratory Exercise**
   A. Procedure:
     a. Answer the following:
       - Explain Selenium suite?
       - What are the limitations of Selenium IDE?
     b. **Execute following (Refer the shared material) and attach screenshots:**
       - Create and run a test case on Chrome/Firefox browser with selenium IDE addon
       - Create a Maven Project in Jenkins and run selenium tests using selenium Grid

8. **Post-Experiments Exercise**
   A. Extended Theory:
       Nil
   B. Questions:
       - What are Locators? Explain its types.
       - What is the benefit of using Selenium Grid with Jenkins?
   C. Conclusion:
       - Write what was performed in the experiment.
       - Write the significance of the topic studied in the experiment.
   D. References:
       https://jenkins.io/doc/
      https://www.slideshare.net/abediaz/introduction-to-jenkins
      https://q-automations.com/2019/09/26/selenium-grid-with-jenkins/

EXPERIMENT 10 : OUTPUT

`docker build -t`: Build a Docker image with a specified name and tag.

```
C:\sherwin>docker build -t shertest .
[+] Building 34.2s (10/10) FINISHED
 => [internal] load build definition from Dockerfile                                      0.0s
 => => transferring dockerfile: 266B                                                      0.0s
 => [internal] load .dockerignore                                                         0.0s
 => => transferring context: 2B                                                           0.0s
 => [internal] load metadata for docker.io/library/ubuntu:latest                          0.0s
 => CACHED [1/5] FROM docker.io/library/ubuntu:latest                                     0.0s
 => [internal] load build context                                                         0.0s
 => => transferring context: 1.39kB                                                       0.0s
 => [2/5] RUN apt update -y                                                               15.1s
 => [3/5] RUN apt install nginx -y                                                        18.7s
 => [4/5] COPY index.html /usr/share/nginx/html/index.html                                0.0s
 => [5/5] COPY index.html /var/www/html/index.html                                        0.0s
 => exporting to image                                                                    0.3s
 => => exporting layers                                                                   0.3s
 => => writing image sha256:d84499c0d08e0bcfde84b6ef410c8d47bbe7ffff40792844aa5363370bc28a5b  0.0s
 => => naming to docker.io/library/shertest                                               0.0s
```

`docker images`: List available Docker images on the local system.

```
C:\sherwin>docker images
REPOSITORY                   TAG              IMAGE ID       CREATED         SIZE
shertest                     latest           d84499c0d08e   4 minutes ago   178MB
svenc                        latest           080094ad01fc   19 hours ago    178MB
ishwari                      latest           02ee0a084b77   43 hours ago    178MB
jay2212004                   latest           53e70f3658cc   44 hours ago    178MB
jay2212004/abc               1                9cdbf249a962   45 hours ago    77.8MB
jay/abc                      1                e3238356d6e9   45 hours ago    77.8MB
athar/new                    xyz              2de5cb9c79f0   2 weeks ago     77.8MB
athar/new                    latest           09b1e196fd17   2 weeks ago     77.8MB
flamboyant_colden/example    1                75eeb33caf53   2 weeks ago     77.8MB
sherw/example1               1                13d9363cfae7   2 weeks ago     77.8MB
<none>                       <none>           2c2d4124b98e   2 weeks ago     77.8MB
sherwinrr/example1           1                0c1ae840064d   2 weeks ago     77.8MB
sherwinrr/example1           latest           1b295d0a1d51   2 weeks ago     77.8MB
<none>                       <none>           5c11da4be3be   2 weeks ago     77.8MB
<none>                       <none>           34f5d6107742   2 weeks ago     77.8MB
harikrushna07/test           latest           fd7b1c365849   3 weeks ago     77.8MB
harikrushna07/new            latest           5602ec6ae052   3 weeks ago     77.8MB
harikrushna07/newtest        latest           683042af59d9   3 weeks ago     77.8MB
ubuntu                       latest           c6b84b685f35   2 months ago    77.8MB
ubuntu                       lunar-20230816   21098a29e034   2 months ago    70.3MB
ubuntu                       <none>           a8780b506fa4   11 months ago   77.8MB
docker/getting-started       latest           cb90f98fd791   18 months ago   28.8MB
```

`docker inspect`: Display detailed information about a Docker container, image, or network.

```
C:\sherwin>docker inspect shertest
[
    {
        "Id": "sha256:d84499c0d08e0bcfde84b6ef410c8d47bbe7ffff40792844aa5363370bc28a5b",
        "RepoTags": [
            "shertest:latest"
        ],
        "RepoDigests": [],
        "Parent": "",
        "Comment": "buildkit.dockerfile.v0",
        "Created": "2023-10-18T05:14:28.5134536Z",
        "Container": "",
        "ContainerConfig": {
            "Hostname": "",
            "Domainname": "",
            "User": "",
            "AttachStdin": false,
            "AttachStdout": false,
            "AttachStderr": false,
            "Tty": false,
            "OpenStdin": false,
            "StdinOnce": false,
            "Env": null,
            "Cmd": null
```

docker history: View the history of changes in a Docker image.

```
C:\sherwin>docker history shertest
IMAGE           CREATED        CREATED BY                                      SIZE       COMMENT
d84499c0d08e    6 minutes ago  CMD ["nginx" "-g" "daemon off;"]                0B         buildkit.dockerfile.v0
<missing>       6 minutes ago  COPY index.html /var/www/html/index.html # b…   1.35kB     buildkit.dockerfile.v0
<missing>       6 minutes ago  COPY index.html /usr/share/nginx/html/index.…   1.35kB     buildkit.dockerfile.v0
<missing>       6 minutes ago  EXPOSE map[80/tcp:{}]                           0B         buildkit.dockerfile.v0
<missing>       6 minutes ago  RUN /bin/sh -c apt install nginx -y # buildk…   55.6MB     buildkit.dockerfile.v0
<missing>       7 minutes ago  RUN /bin/sh -c apt update -y # buildkit         44.7MB     buildkit.dockerfile.v0
<missing>       7 minutes ago  MAINTAINER "Shree Jaswal"                       0B         buildkit.dockerfile.v0
<missing>       2 months ago   /bin/sh -c #(nop)  CMD ["/bin/bash"]            0B
<missing>       2 months ago   /bin/sh -c #(nop) ADD file:aa9b51e9f0067860c…   77.8MB
<missing>       2 months ago   /bin/sh -c #(nop)  LABEL org.opencontainers.…   0B
<missing>       2 months ago   /bin/sh -c #(nop)  LABEL org.opencontainers.…   0B
<missing>       2 months ago   /bin/sh -c #(nop)  ARG LAUNCHPAD_BUILD_ARCH     0B
<missing>       2 months ago   /bin/sh -c #(nop)  ARG RELEASE                  0B
```

docker run -it -p: Run a Docker container interactively with specified options, including exposing ports.

```
C:\sherwin>docker run -it -p 8888:88 shertest
```

docker ps: Show a list of currently running Docker containers.

```
C:\sherwin>docker ps
CONTAINER ID   IMAGE      COMMAND               CREATED             STATUS            PORTS                       NAMES
f115488d5b93   shertest   "nginx -g 'daemon of…" About a minute ago  Up About a minute 80/tcp, 0.0.0.0:8888->88/tcp  wizardly_keldysh
```

```
(i) localhost:8888
```

This is a sample text that doesn't contain the word "Sherin".

This is another text that also doesn't contain "Sherwin".

This is a text with the word "Sherwin" in it. The background color will change when you click the button below.

[Change Color]

docker stop: Stop a running Docker container.
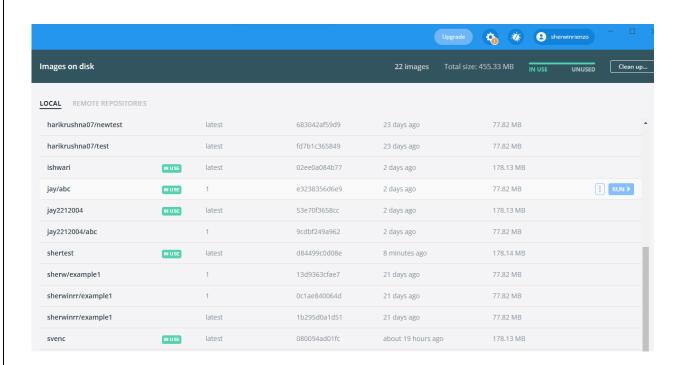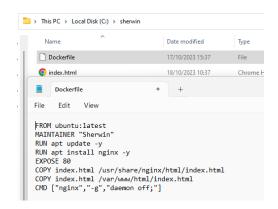
```
C:\sherwin>docker stop f115488d5b93
f115488d5b93
```

ⓘ localhost:8888

😟

This page isn't working

localhost didn't send any data.

ERR_EMPTY_RESPONSE

Reload

Upgrade ⚙️ 🐞 👤 sherwinrienzo

Images on disk

22 images   Total size: 455.33 MB   IN USE   UNUSED   Clean up…

LOCAL   REMOTE REPOSITORIES

harikrushna07/newtest		latest	683042af59d9	23 days ago	77.82 MB	
harikrushna07/test		latest	fd7b1c365849	23 days ago	77.82 MB	
ishwari	IN USE	latest	02ee0a084b77	2 days ago	178.13 MB	
jay/abc	IN USE	1	e3238356d6e9	2 days ago	77.82 MB	⋮ RUN ▶
jay2212004	IN USE	latest	53e70f3658cc	2 days ago	178.13 MB	
jay2212004/abc		1	9cdbf249a962	2 days ago	77.82 MB	
shertest	IN USE	latest	d84499c0d08e	8 minutes ago	178.14 MB	
sherw/example1		1	13d9363cfae7	21 days ago	77.82 MB	
sherwinrr/example1		1	0c1ae840064d	21 days ago	77.82 MB	
sherwinrr/example1		latest	1b295d0a1d51	21 days ago	77.82 MB	
svenc	IN USE	latest	080094ad01fc	about 19 hours ago	178.13 MB	

📁 > This PC > Local Disk (C:) > sherwin

Name	Date modified	Type
📄 Dockerfile	17/10/2023 15:37	File
🌐 index.html	18/10/2023 10:37	Chrome H

📄 Dockerfile ● +

File   Edit   View

```
FROM ubuntu:latest
MAINTAINER "Sherwin"
RUN apt update -y
RUN apt install nginx -y
EXPOSE 80
COPY index.html /usr/share/nginx/html/index.html
COPY index.html /var/www/html/index.html
CMD ["nginx","-g","daemon off;"]
```

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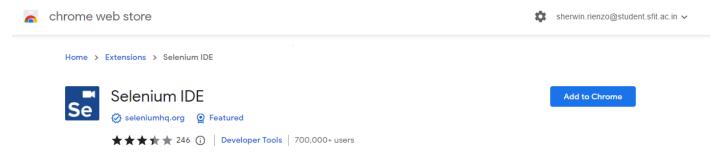D. **References:**
   https://jenkins.io/doc/
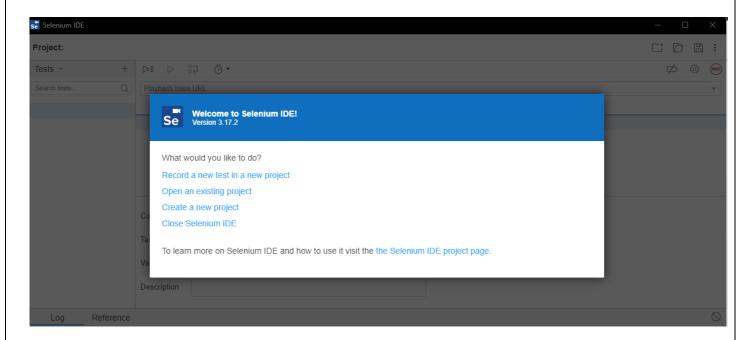   https://www.slideshare.net/abediaz/introduction-to-jenkins
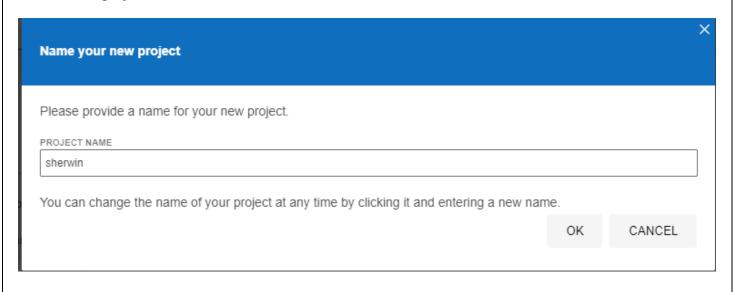   https://q-automations.com/2019/09/26/selenium-grid-with-jenkins/

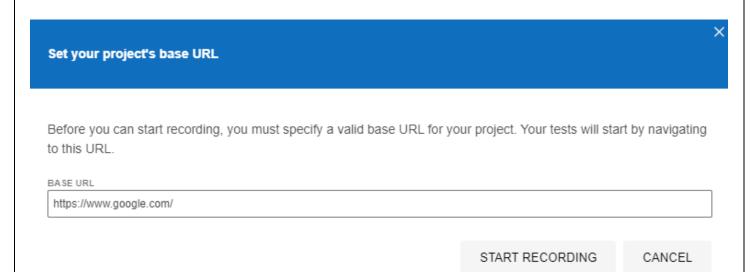# EXPERIMENT 8 : OUTPUT

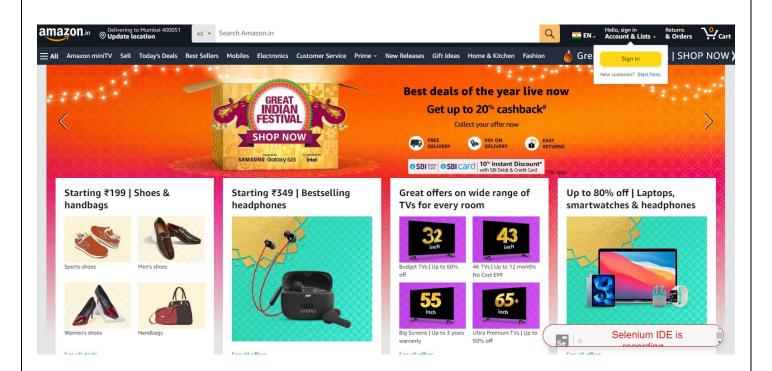1.install selenium IDE from chrome web store

2.open selenium extension

3.create new project

4.paste any url which contains https for recording

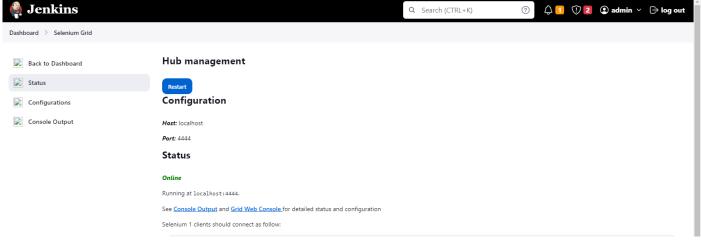**Set your project's base URL**

Before you can start recording, you must specify a valid base URL for your project. Your tests will start by navigating to this URL.

BASE URL

https://www.google.com/

START RECORDING   CANCEL

5.recorded preview with record notification on bottom
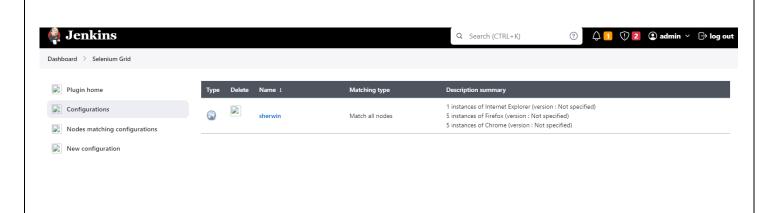
6. clicks and recorded logs of the website accessed
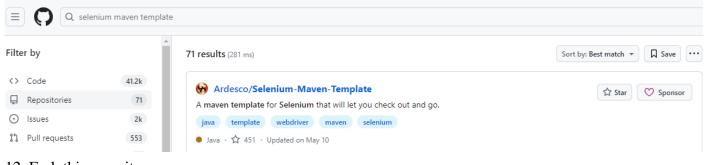
7. Open Jenkins and click on selenium grid

9. Click on New Cofiguration

10. Created Configuration on selenium gold

11. Go to Github Search for selenium maven template
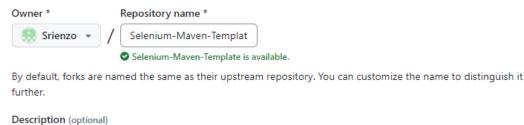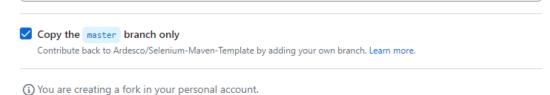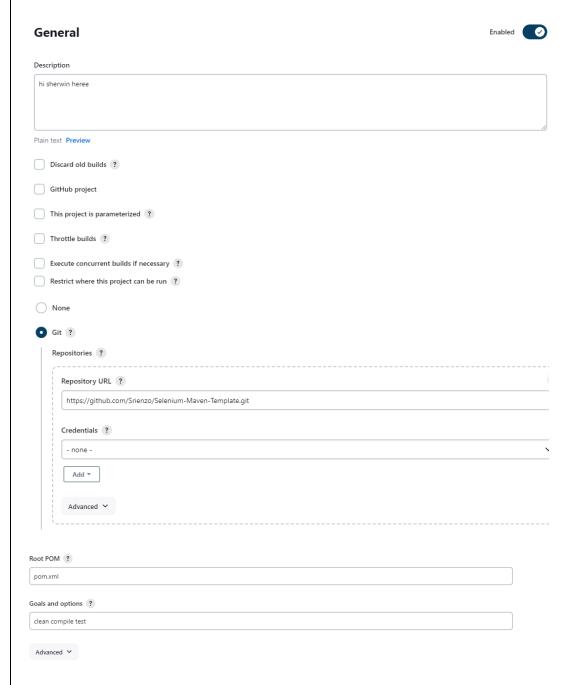

12. Fork this repository

12.Go to jenkin and create new maven project

13. configure the Maven project and put the Forked repository link

General   Enabled ◉

Description

> hi sherwin heree

Plain text **Preview**

☐ Discard old builds ?

☐ GitHub project

☐ This project is parameterized ?

☐ Throttle builds ?

☐ Execute concurrent builds if necessary ?

☐ Restrict where this project can be run ?

○ None

◉ Git ?

   Repositories ?

     Repository URL ?

     > https://github.com/Srienzo/Selenium-Maven-Template.git

     Credentials ?

     > - none -

     Add ▾

     Advanced ▾

Root POM ?

> pom.xml

Goals and options ?

> clean compile test

Advanced ▾

14.Console output of the maven project with selenium project