Docker & Selenium Project

Name : Yogesh Nivrtti Patil

Employee ID : 201316

E-mail : yogesh.patil3@amdocs.com

Introduction to Selenium

Selenium

- Open Source Automation Testing Framework
- Supports Multiple Operating Systems
- Supports Muliple Programming Language
- Popular Language used is Java and C#.

Docker

- Docker is an open-source platform for containerization.
- Containers are lightweight, isolated environments that ensure consistency in software deployment.
- Containers run consistently across different environments, from development to production.
- Docker ensures that applications behave the same way in any environment, reducing "it works on my machine" issues.

Project 1: Selenium

Import and Creating Object of Webdriver

Step 1: Importing Necessary imports

```
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.testng.AssertJUnit;
import org.testng.annotations.Test;
```

Step 2: Creating Object of Webdriver and launching URL

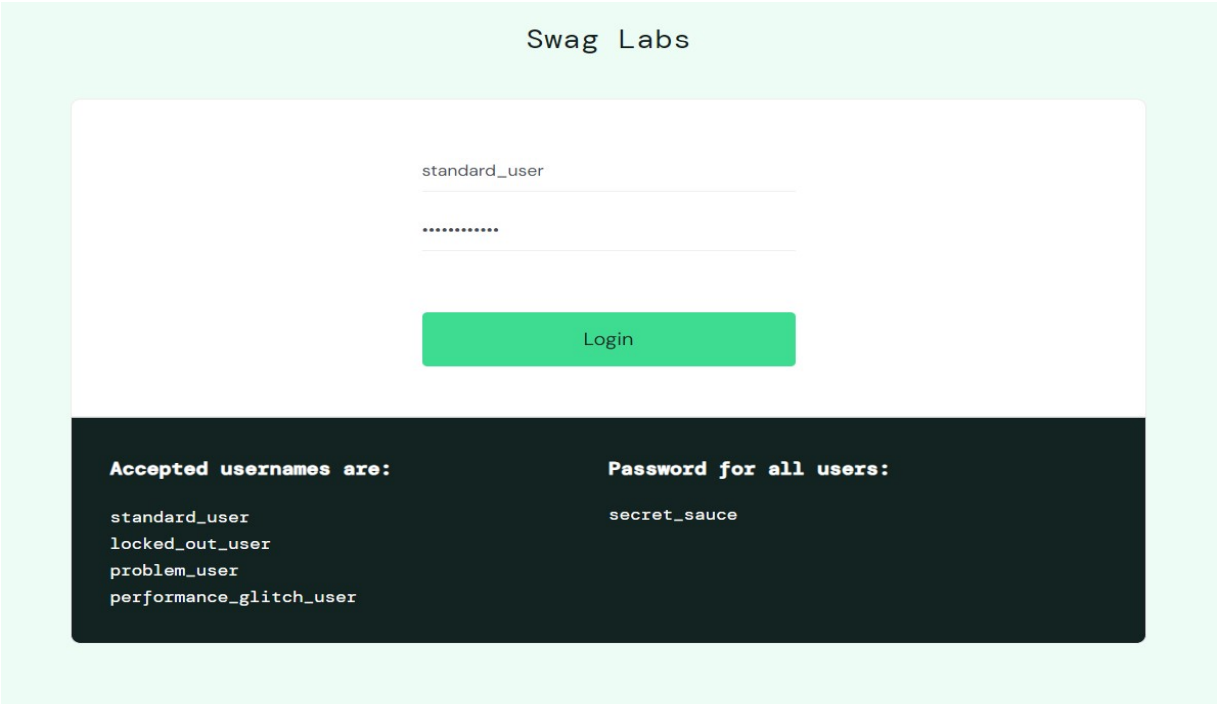
```
        // TODO Auto-generated method stub
        ChromeDriver dr=new ChromeDriver();

        // Launch URL
        dr.get("https://www.saucedemo.com/");

        // Maximize the screen
        dr.manage().window().maximize();

```

‘

Login Module

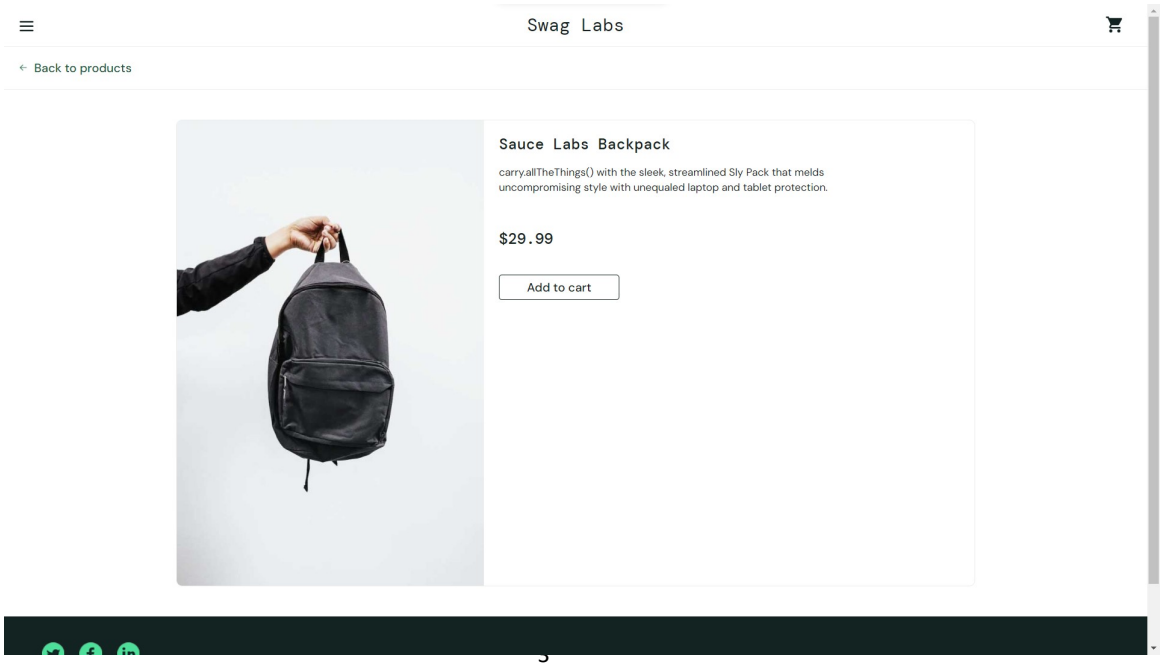
Step 3: Logging in with credentials

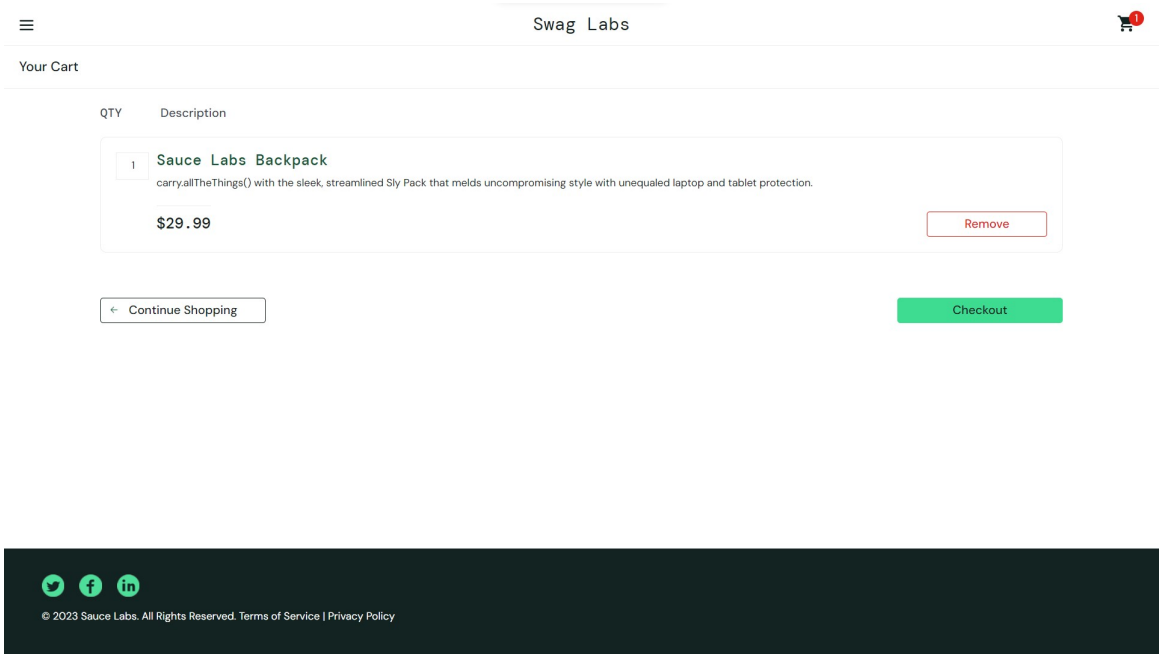
```
//Credentials Username and Password
dr.findElement(By.xpath("//*[@id=\"user-name\"]")).sendKeys("standard_user");
dr.findElement(By.xpath("//*[@id=\"password\"]")).sendKeys("secret_sauce");

// Clicking Login Button
dr.findElement(By.xpath("//*[@id=\"login-button\"]")).click();
```



Viewing Product and Adding Product to Cart

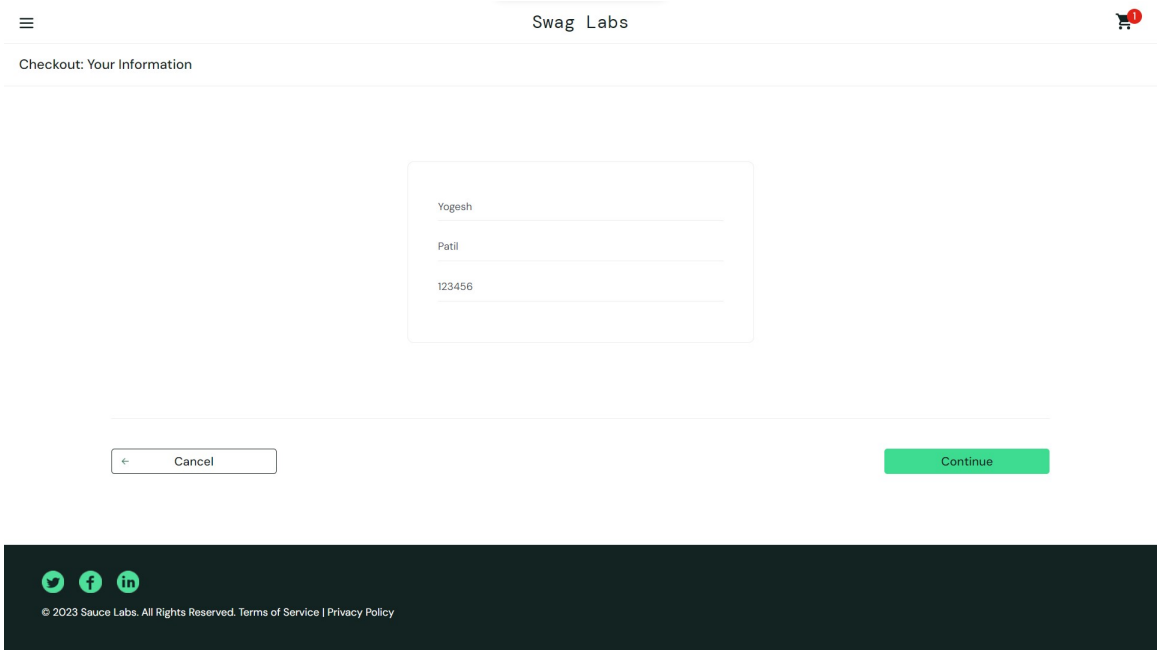
```
// Viewing Product
dr.findElement(By.xpath("//*[@id=\"item_5_title_link\"]/div")).click();

// Adding Product to Cart
dr.findElement(By.xpath("//*[@id=\"add-to-cart-sauce-labs-fleece-jacket\"]")).click();

// Viewing Product in Cart
dr.findElement(By.xpath("//*[@id=\"shopping_cart_container\"]/a")).click();

// Clicking on CheckOut Button
dr.findElement(By.xpath("//*[@id=\"checkout\"]")).click();
```

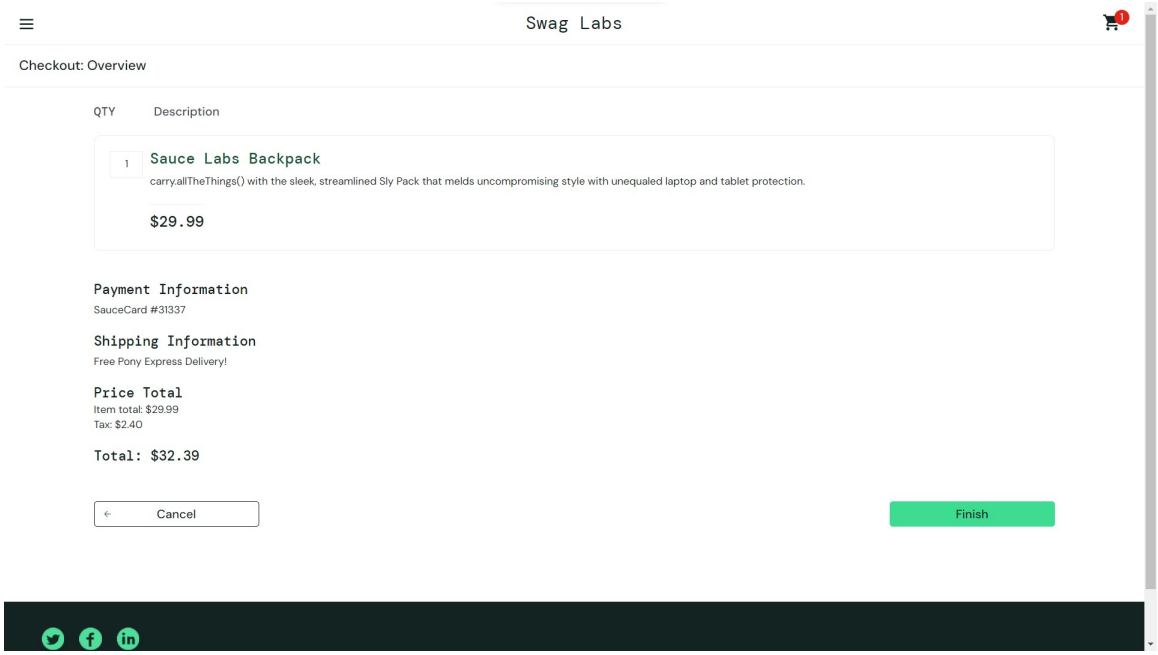




Entering Checkout Details and Confirmation of Order

```
// Entering Details for Checkout
dr.findElement(By.xpath("//*[@id=\"first-name\"]")).sendKeys("Yogesh");
dr.findElement(By.xpath("//*[@id=\"last-name\"]")).sendKeys("Patil");
dr.findElement(By.xpath("//*[@id=\"postal-code\"]")).sendKeys("123456");

// Clicking on Continue Button
dr.findElement(By.xpath("//*[@id=\"continue\"]")).click();

// Clicking on FInish Button
dr.findElement(By.xpath("//*[@id=\"finish\"]")).click();
```





Test Cases Using TestNG

```
@Test
Run | Debug
public void CheckTitle() {
    WebDriver dr=new FirefoxDriver();

    // Launch URL
    dr.get("https://www.saucedemo.com/");

    System.out.println("Title Test Starts");
    String expTitle="Swag Labs";
    String actTitle=dr.getTitle();
    AssertJUnit.assertEquals(expTitle,actTitle);
    System.out.println("title Test Passed");
    System.out.println("Title Test Ends");
}
```

```
@Test
Run | Debug
public void ChecLoginButton() {
    WebDriver dr=new FirefoxDriver();

    // Launch URL
    dr.get("https://www.saucedemo.com/");
    String expText="Login";
    String actText=dr.findElement(By.xpath("//*[@id=\"login-button\"]"))
            .getAttribute("value");
    AssertJUnit.assertEquals(expText,actText);
}
```

```
@Test
Run | Debug
public void isLoginButtonVisible() {
    WebDriver dr=new FirefoxDriver();

    // Launch URL
    dr.get("https://www.saucedemo.com/");

    // Clicking Login Button
    dr.findElement(By.xpath("//*[@id=\"login-button\"]")).isDisplayed();
}
```

```
@Test

Run | Debug
public void isTextboxVisible() {
    WebDriver dr=new FirefoxDriver();

    // Launch URL
    dr.get("https://www.saucedemo.com/");

    dr.findElement(By.xpath("//*[@id=\"user-name\"]")).
    isDisplayed();
    dr.findElement(By.xpath("//*[@id=\"password\"]")).
    isDisplayed();
}
```

Generating Test Report

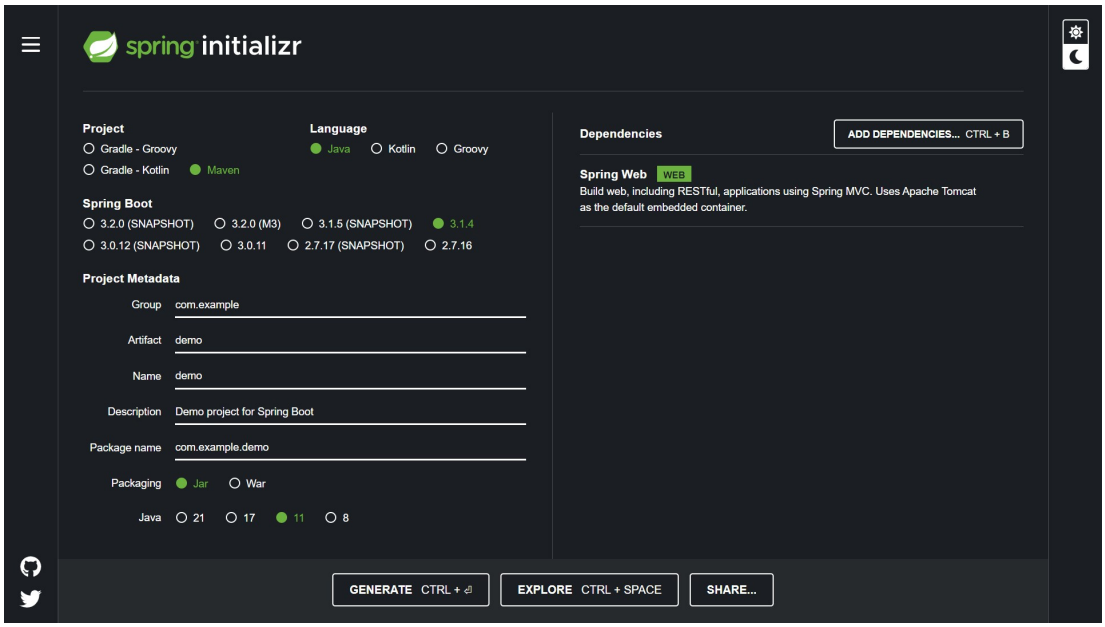
Test	# Passed	# Skipped	# Retried	# Failed	Time (ms)	Included Groups	Excluded Groups
Default suite							
Default test	5	0	0	0	21,255		

Class	Method	Start	Time (ms)
Default suite			
Default test — passed			
amdocs.AutoWeb	ChecLoginButton	1696428643493	4816
	CheckTitle	1696428648314	3499
	CompleteAutoProcess	1696428651816	5880
	isLoginButtonVisible	1696428657700	3640
	isTextboxVisible	1696428661343	3353

Project 2: Docker

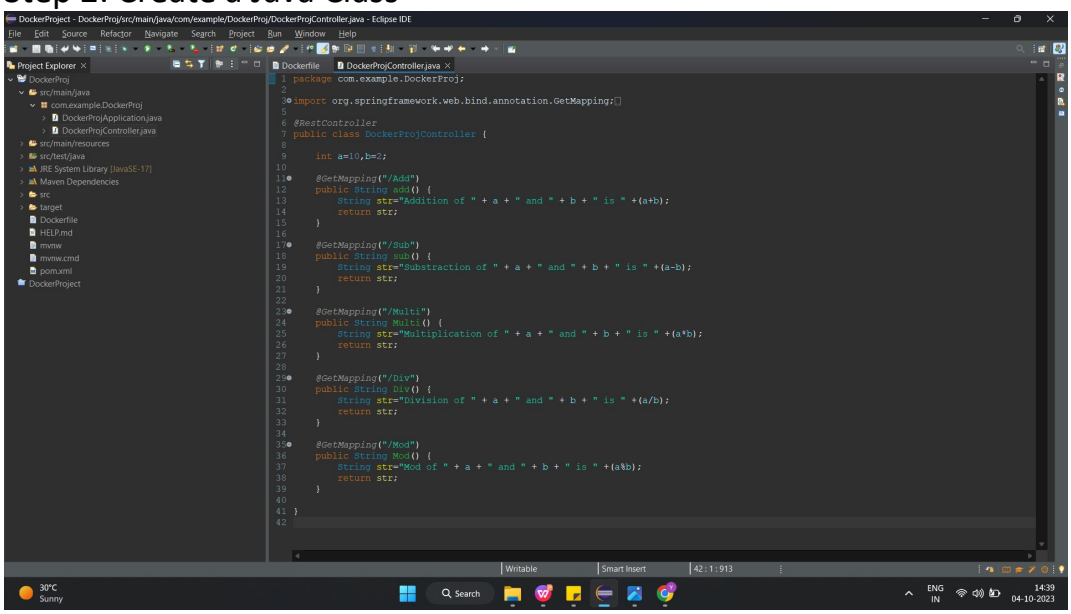
Creating Spring Boot Project

Step 1: Create a Spring Boot Project with following requirements



Creating Java Class for Actual code

Step 2: Create a Java Class



Creating Docker file, JAR File

Step 3: Create JAR file name under pom.xml file of project

```
36                <artifactId>spring-boot-maven-plugin</artifactId>
37            </plugin>
38        </plugins>
39        <finalName>dockproj</finalName>
40    </build>
41
42 </project>
43
```

Step 4: Create Docker file in Project with Following Code

Dockerfile × DockerProjController.java

```
1 FROM openjdk:17
2 EXPOSE 8081
3 ADD target/dockproj.jar dockproj.jar
4 ENTRYPOINT ["java","-jar","/dockproj.jar"]
```

Step 5: Generate JAR File by clicking Run as Maven Install

Dockerizing Project

Step 6: Creating Docker Image from JAR file

```
C:\Users\Administrator\Downloads\DockerProj>docker --version
Docker version 24.0.2, build cb74dfc

C:\Users\Administrator\Downloads\DockerProj>docker images
REPOSITORY                    TAG       IMAGE ID       CREATED        SIZE
dockerkub                     latest    62ad17b117d9   21 hours ago   490MB
dockjar                       latest    62ad17b117d9   21 hours ago   490MB
softdevyog/dockjar            latest    62ad17b117d9   21 hours ago   490MB
<none>                        <none>    932bdcf03d7f   21 hours ago   673MB
versed/chad                   latest    b1fdbdf7d0ad   21 hours ago   490MB
sac2277/dockerfirst           latest    e99bb3a98390   21 hours ago   490MB
mysql                         latest    b2013ac99101   12 days ago    577MB
gcr.io/k8s-minikube/kicbase   v0.0.40   c6cc01e60919   2 months ago   1.19GB
```

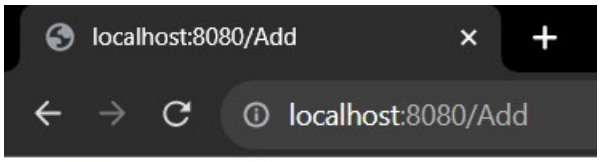
```
C:\Users\Administrator\Downloads\DockerProj>docker build -t dockproj:latest .
[+] Building 3.2s (8/8) FINISHED
 => [internal] load build definition from Dockerfile
 => => transferring dockerfile: 147B
 => [internal] load .dockerignore
 => => transferring context: 2B
 => [internal] load metadata for docker.io/library/openjdk:17
 => [auth] library/openjdk:pull token for registry-1.docker.io
 => [internal] load build context
 => => transferring context: 19.02MB
 => CACHED [1/2] FROM docker.io/library/openjdk:17@sha256:528707081fdb9562eb819128a9f85ae7fe000e2fbaeaf9f87662e7b3f38cb7d8
 => [2/2] ADD target/dockproj.jar dockproj.jar
 => exporting to image
 => => exporting layers
 => => writing image sha256:ccc242ad042eabf5e44b513a71e3eaa887d939e2ba7d7fff93392a57c05995bd
 => => naming to docker.io/library/dockproj:latest

What's Next?
  View summary of image vulnerabilities and recommendations → docker scout quickview
```

Step 7: Creating Tag for Image, Executing Image and Pushing Image

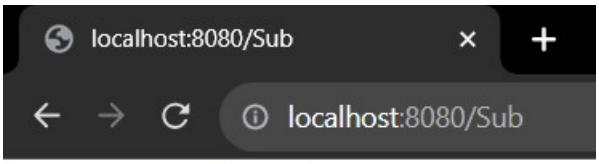
```
C:\Users\Administrator\Downloads\DockerProj>docker tag dockproj:latest softdevyog/dockproj

C:\Users\Administrator\Downloads\DockerProj>docker images
REPOSITORY                    TAG       IMAGE ID       CREATED              SIZE
dockproj                      latest    ccc242ad042e   About a minute ago   490MB
softdevyog/dockproj           latest    ccc242ad042e   About a minute ago   490MB
dockerkub                     latest    62ad17b117d9   21 hours ago         490MB
dockjar                       latest    62ad17b117d9   21 hours ago         490MB
softdevyog/dockjar            latest    62ad17b117d9   21 hours ago         490MB
<none>                        <none>    932bdcf03d7f   21 hours ago         673MB
versed/chad                   latest    b1fdbdf7d0ad   21 hours ago         490MB
sac2277/dockerfirst           latest    e99bb3a98390   21 hours ago         490MB
mysql                         latest    b2013ac99101   12 days ago          577MB
gcr.io/k8s-minikube/kicbase   v0.0.40   c6cc01e60919   2 months ago         1.19GB
```

```
C:\Users\Administrator\Downloads\DockerProj>docker run -p 8081:8081 dockproj

  .   ____          _            __ _ _
 /\\ / ___'_ __ _ _(_)_ __  __ _ \ \ \ \
( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v3.1.4)

2023-10-04T05:50:29.748Z  INFO 1 --- [           main] c.e.DockerProj.DockerProjApplication     : Starting DockerProjApplication v0.0.1-SNAPSHOT using Java 17.0.2 with PID 1 (/dockproj.jar
started by root in /)
2023-10-04T05:50:29.754Z  INFO 1 --- [           main] c.e.DockerProj.DockerProjApplication     : No active profile set, falling back to 1 default profile: "default"
2023-10-04T05:50:31.241Z  INFO 1 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 8081 (http)
2023-10-04T05:50:31.258Z  INFO 1 --- [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2023-10-04T05:50:31.259Z  INFO 1 --- [           main] o.apache.catalina.core.StandardEngine    : Starting Servlet engine: [Apache Tomcat/10.1.13]
2023-10-04T05:50:31.407Z  INFO 1 --- [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext
2023-10-04T05:50:31.414Z  INFO 1 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1504 ms
2023-10-04T05:50:31.995Z  INFO 1 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 8081 (http) with context path ''
2023-10-04T05:50:32.035Z  INFO 1 --- [           main] c.e.DockerProj.DockerProjApplication     : Started DockerProjApplication in 2.961 seconds (process running for 3.77)
2023-10-04T05:50:41.163Z  INFO 1 --- [nio-8081-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring DispatcherServlet 'dispatcherServlet'
2023-10-04T05:50:41.163Z  INFO 1 --- [nio-8081-exec-1] o.s.web.servlet.DispatcherServlet        : Initializing Servlet 'dispatcherServlet'
2023-10-04T05:50:41.165Z  INFO 1 --- [nio-8081-exec-1] o.s.web.servlet.DispatcherServlet        : Completed initialization in 1 ms

C:\Users\Administrator\Downloads\DockerProj>docker push softdevyog/dockproj
Using default tag: latest
The push refers to repository [docker.io/softdevyog/dockproj]
907c52791ca6: Pushed
dc9fa3d8b576: Mounted from versed/chad
27ee19dc88f2: Mounted from softdevyog/dockjar
c8dd97366670: Mounted from softdevyog/dockjar
latest: digest: sha256:b2eee20f0859c816d7407326c8707260c64148c692a98b33962c0451a48db87b size: 1166
```

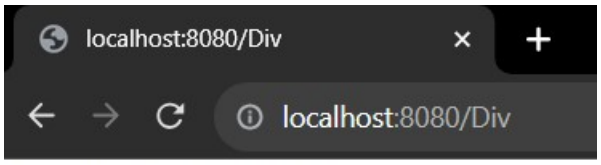
Outputs



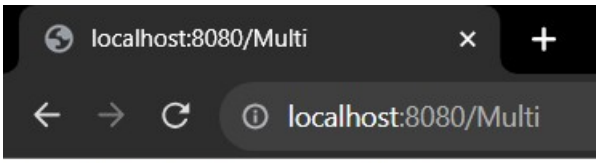
Addition of 10 and 2 is 12



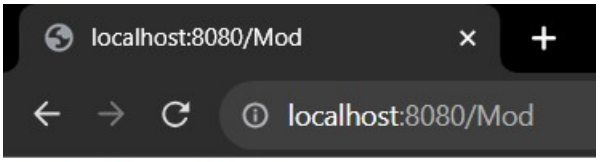
Substraction of 10 and 2 is 8



Division of 10 and 2 is 5



Multiplication of 10 and 2 is 20



Mod of 10 and 2 is 0