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Employee ID: - 201319
Unit:- 7th September AQE

Project topic: -

1. Automation using Selenium (Java)

2. Creating Docker image of a Spring boot application and deploying it in a container.

1. Automation using Selenium (Java)

Description:-

In this Project I have fully automated the geeksforgeeks website https://www.geeksforgeeks.org/ and performed test cases using testng.

Code:-

RunGFG.java

```
package com.amdocs.FinalProject;

import java.util.Set;

import org.openqa.selenium.By;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.edge.EdgeDriver;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.JavascriptExecutor;
public class RunGFG {
	public static void main(String args[]) {
		try {
			EdgeDriver ed= new EdgeDriver();
			ed.manage().window().maximize();
			Actions actions = new Actions(ed);

			//Load GFG web page
			ed.get("https://www.geeksforgeeks.org/");
			Thread.sleep(3000); //Wait for Page to load



	ed.findElement(By.xpath("/html/body/nav/div/div[1]/ul[2]/li[2]
/div/button")).click();
			Thread.sleep(2000);

	ed.findElement(By.xpath("//*[@id=\"userProfileId\"]/a")).click
();
			Thread.sleep(3000);  //Wait for Sign up pop up to
load
```

```
                //insert login id and password

     ed.findElement(By.xpath("//*[@id=\"luser\"]")).sendKeys("11322
10047@mitwpu.edu.in");

     ed.findElement(By.xpath("//*[@id=\"password\"]")).sendKeys("Ar
chery@360");

     ed.findElement(By.xpath("//*[@id=\"Login\"]/button")).click();
                Thread.sleep(3000);

                //Using action class to get drop down by hovering
over Courses section

     actions.moveToElement(ed.findElement(By.xpath("/html/body/nav/
div/div[1]/ul[1]/li[1]"))).perform();

                //click on all courses

     ed.findElement(By.xpath("/html/body/nav/div/div[1]/ul[1]/li[1]
/ul/li[5]/a")).click();
                Thread.sleep(3000);

                //click on the dsa banner
                WebElement targetElement =
ed.findElement(By.xpath("//*[@id=\"__next\"]/div/div[4]/div[2]/div/d
iv[6]/div[2]")); // Replace with your target element locator
                // Scroll to the target element using JavaScript
             ((JavascriptExecutor)
ed).executeScript("arguments[0].scrollIntoView(true);",
targetElement);
             //targetElement.click();
                String originalTabHandle = ed.getWindowHandle();
                Thread.sleep(2000);

     ed.findElement(By.xpath("//*[@id=\"__next\"]/div/div[4]/div[2]
/div/div[6]/div[2]/div/a[1]")).click();
                //Thread.sleep(3000);

                Set<String> allTabHandles = ed.getWindowHandles();
             for (String tabHandle : allTabHandles) {
                 if (!tabHandle.equals(originalTabHandle)) {
                     ed.switchTo().window(tabHandle);
                     break;
                 }
             }
             System.out.println(allTabHandles);
             Thread.sleep(3000);
```

```
            WebElement
cookiebtn=ed.findElement(By.xpath("//*[@id=\"rcc-confirm-
button\"]"));
            cookiebtn.click();
            Thread.sleep(1000);
            WebElement signupbtn
=ed.findElement(By.xpath("//*[@id=\"__next\"]/div/div[3]/div[1]/sect
ion[1]/div[2]/div/div[2]/div[4]/div[1]/div/div/button"));
            signupbtn.click();


      //ed.findElement(By.xpath("//*[@id=\"__next\"]/div/div[4]/div[
1]/section[1]/div[2]/div/div[2]/div[4]/div[1]/div/button")).click();


            }
            catch(Exception e){
                  System.out.println(e);
            }

      }

}
```

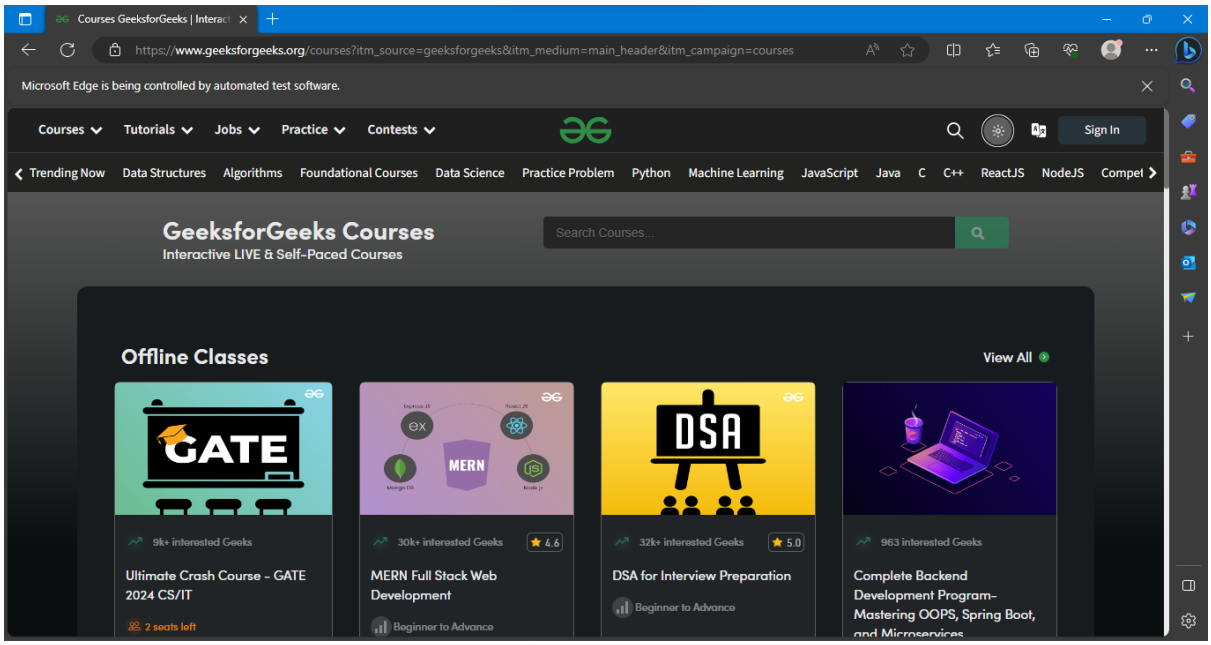
GFGtest.java

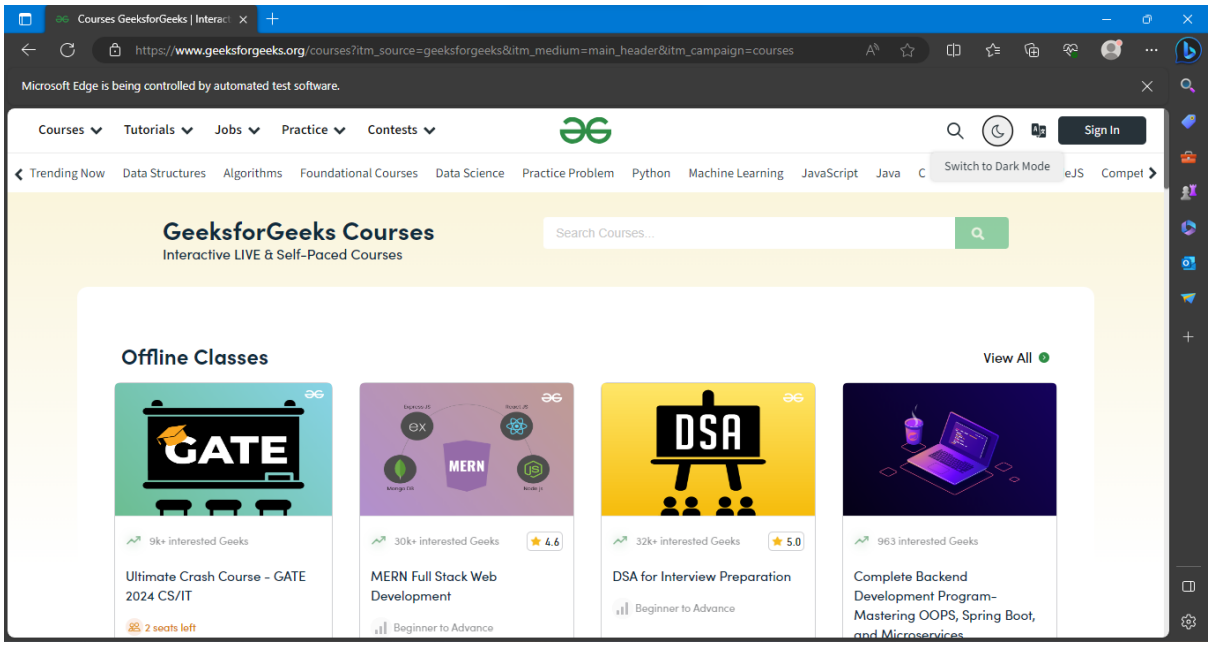
```
package com.amdocs.FinalProject;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.edge.EdgeDriver;
import org.testng.annotations.Test;
import org.testng.asserts.SoftAssert;


public class GFGtest {
      WebDriver dr= new EdgeDriver();
      SoftAssert sa=new SoftAssert();
      @Test

      public void titletestpass() {


            dr.get("https://www.geeksforgeeks.org/");
            String expTitile = "GeeksforGeeks | A computer science
portal for geeks";

            String actTitle = dr.getTitle();
            //System.out.println(actTitle);
```

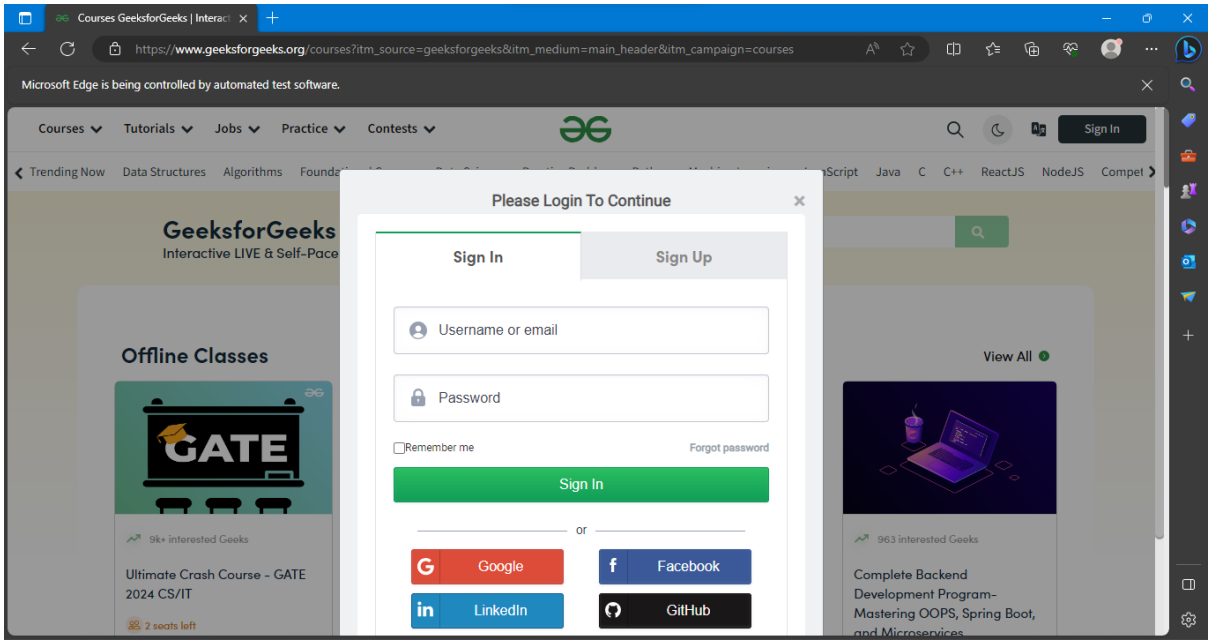
```
            System.out.println(dr.getTitle());
            sa.assertEquals(actTitle, expTitile);

            String btnText=dr.findElement(By.xpath("//*[@id=\"RA-
root\"]/div/div[1]/div[1]/div[2]/span/span/span[2]/button")).getText
();
            System.out.println(btnText);
            String expText="Search";
            sa.assertEquals(btnText, expText);
            sa.assertAll();

      }

//    @Test
//    public void titletestfail() {
//
//          dr.get("https://www.geeksforgeeks.org/");
//          String expTitile = "GeeksforGeeks";
//
//          String actTitle = dr.getTitle();
//          //System.out.println(actTitle);
//          System.out.println(dr.getTitle());
//          sa.assertEquals(actTitle, expTitile);
//
//
//    }

}
```

Screenshots:-

Geeksforgeeks website step-by-step automation screenshots



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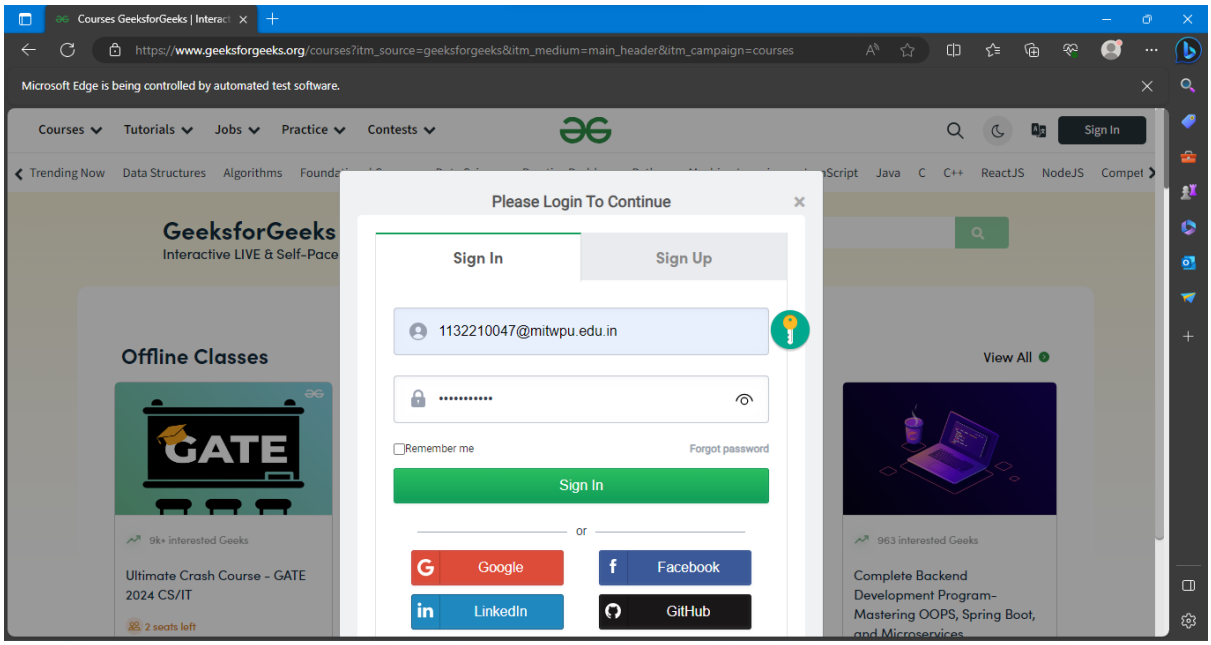
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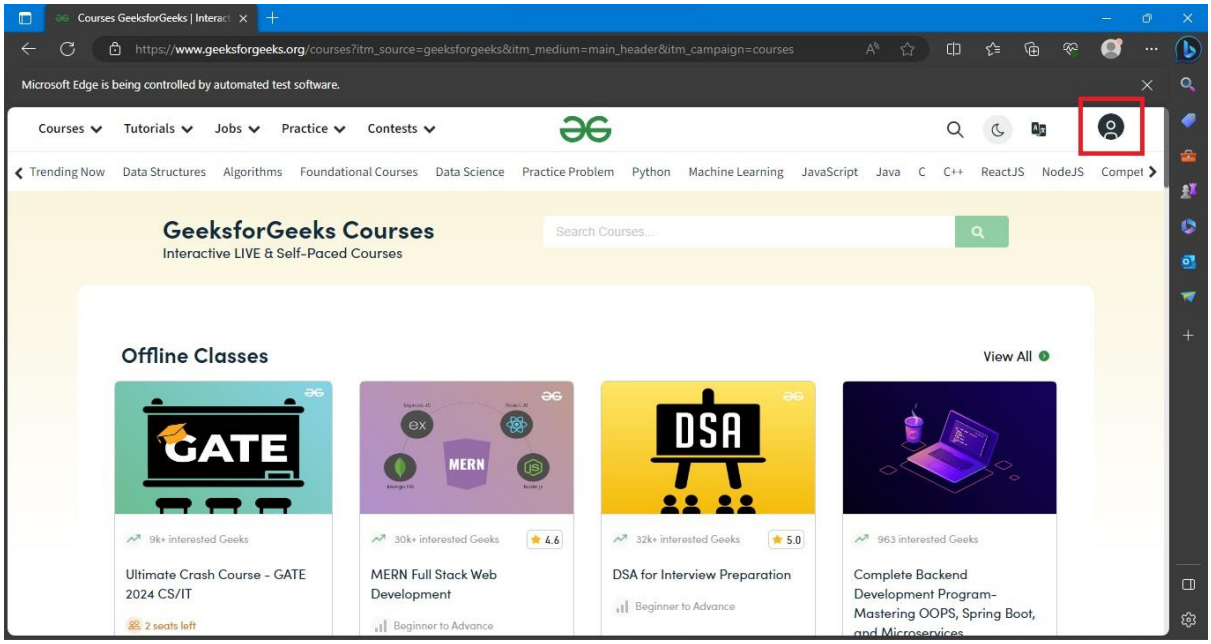
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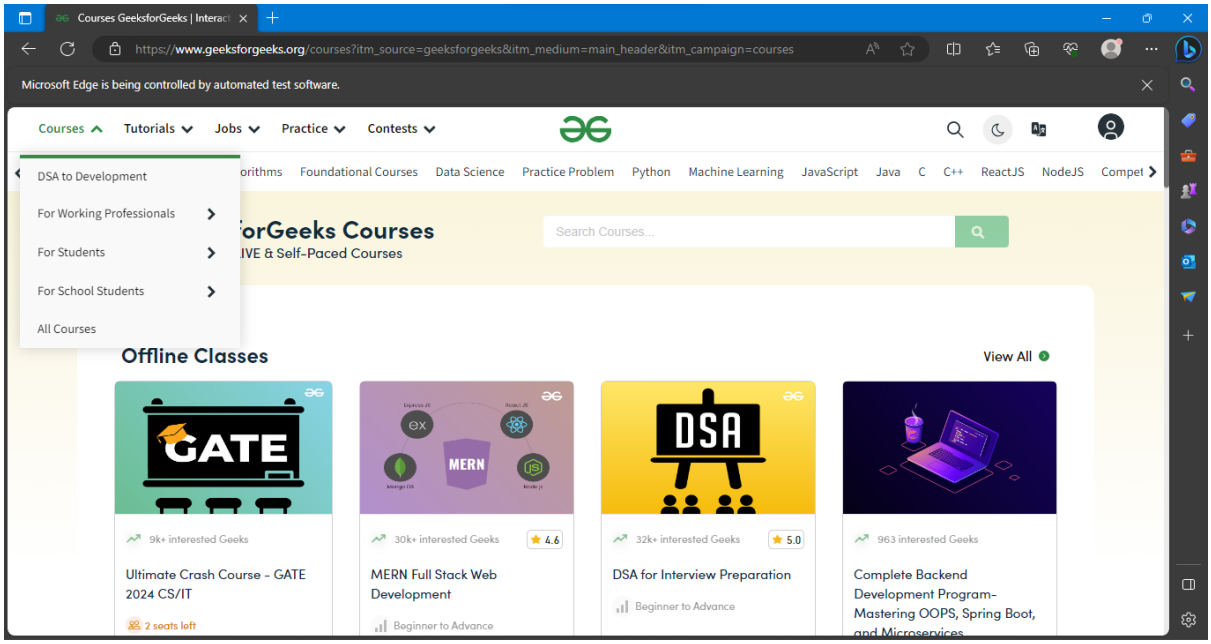
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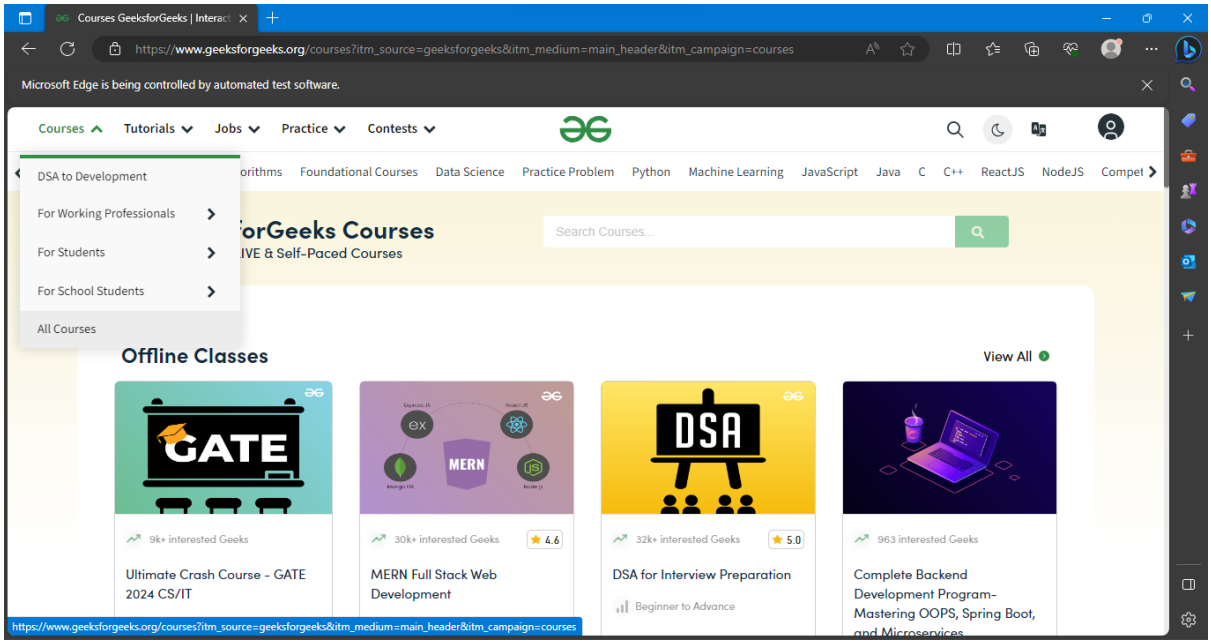
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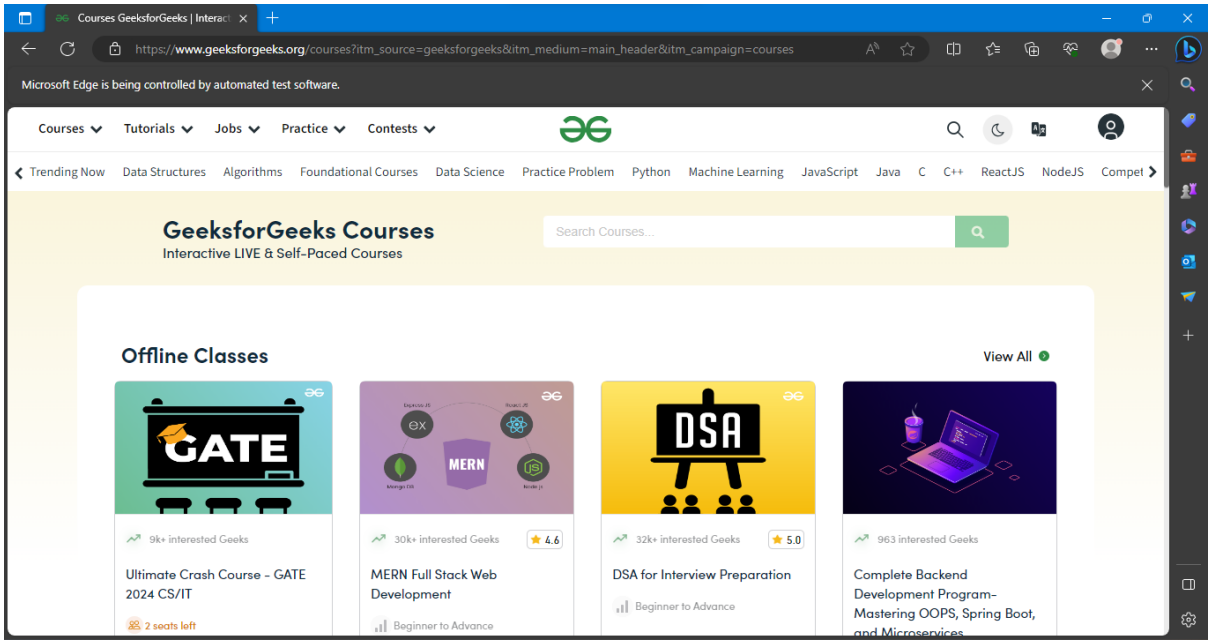
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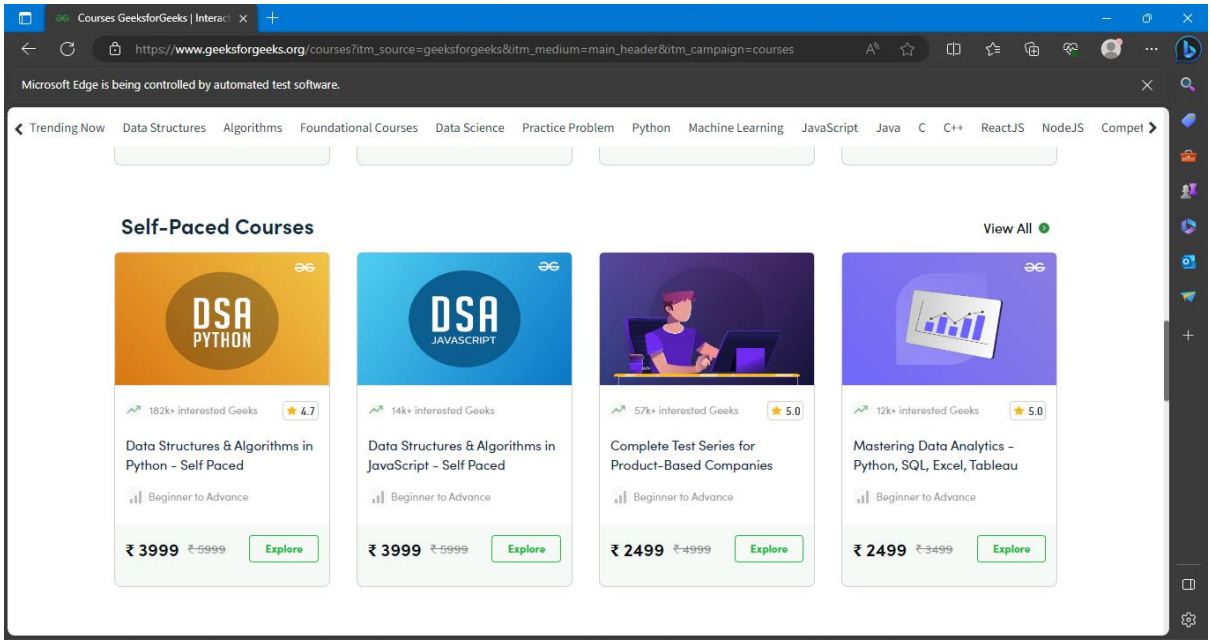
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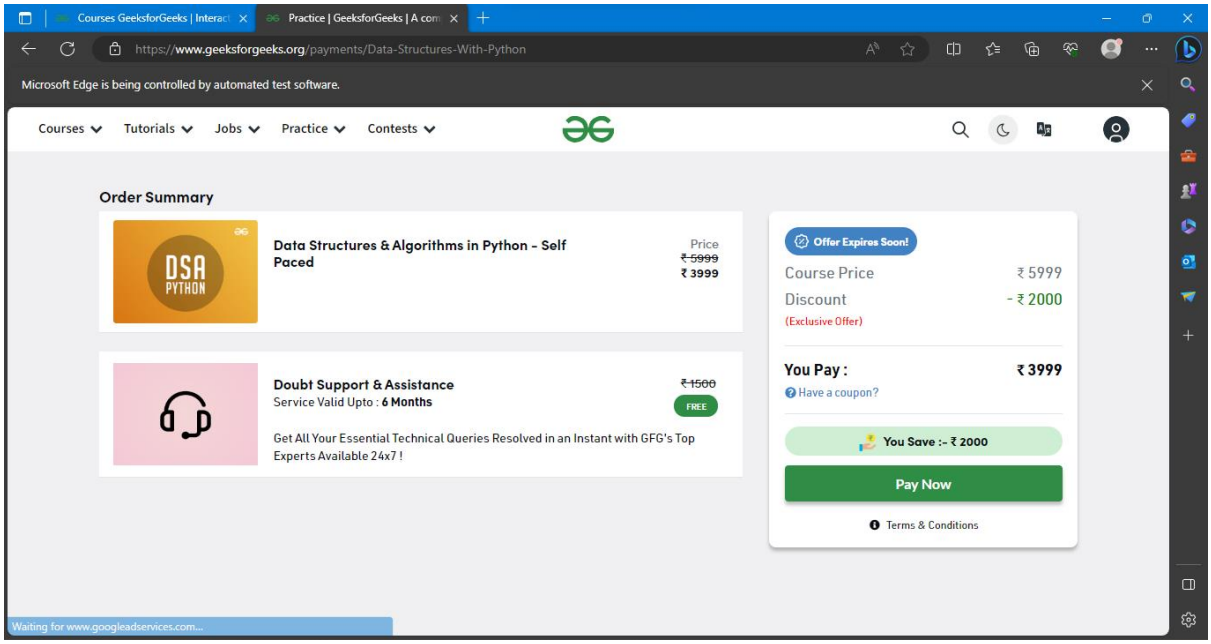
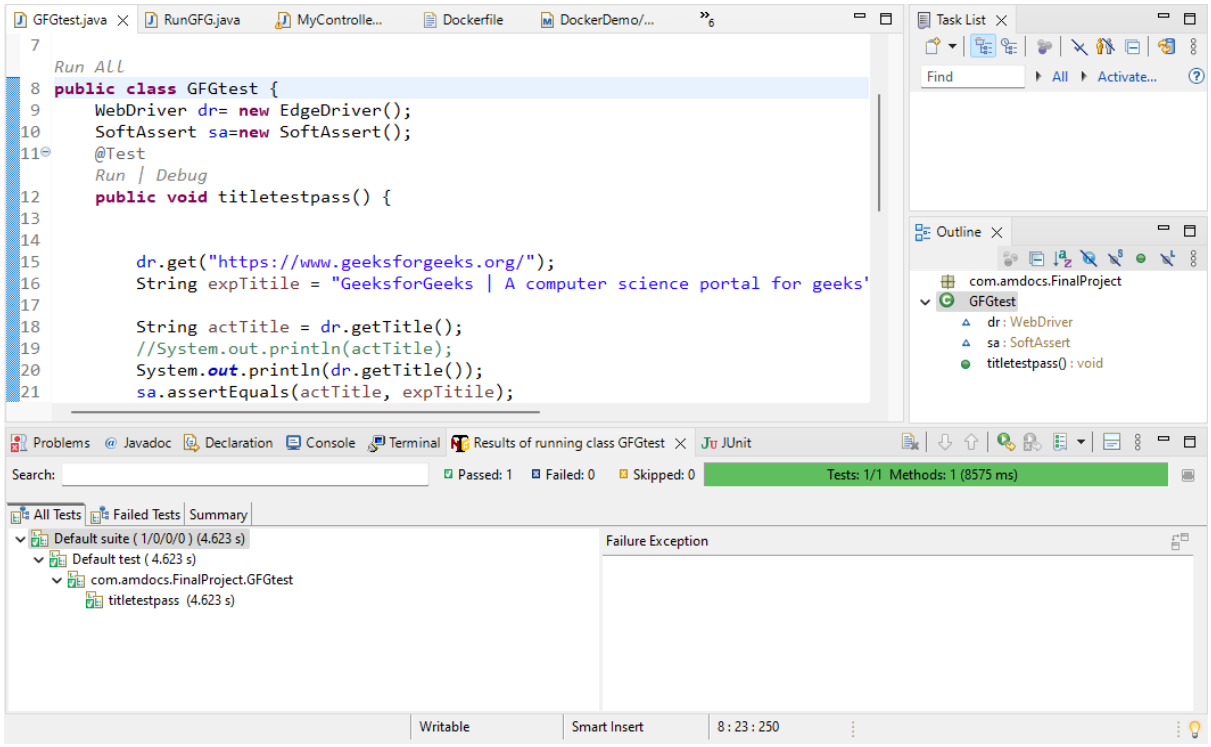




TestNG testcases Screenshots

2. Creating Docker image of a Spring boot application and deploying it in a container.

Description: - To deploy a container on Docker, Firstly we created a spring boot project in Java and then created a simple controller which returned a string with URL mapping .
After a successful run of the the spring boot project we created its image in docker , finally we created its container and then pushed it on dockerhub

Code:-

MyController.java :-

```
package com.amdocs.DockerDemo;


import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;


@RestController
public class MyController {


	@GetMapping("/get")
	public String print() {
		return "Welcome to Spring boot World";
	}


	@GetMapping("/in")
	public String print2() {
		return "We are going to dockerize springboot application";
```

```
    }


}
```

Dockerfile :-

```
FROM openjdk:17
EXPOSE 8081
ADD target/DockerDemo.jar DockerDemo.jar
ENTRYPOINT ["java","-jar","/DockerDemo.jar"]
```

Docker commands used:-

docker --version

docker pull mysql

docker images

docker ps

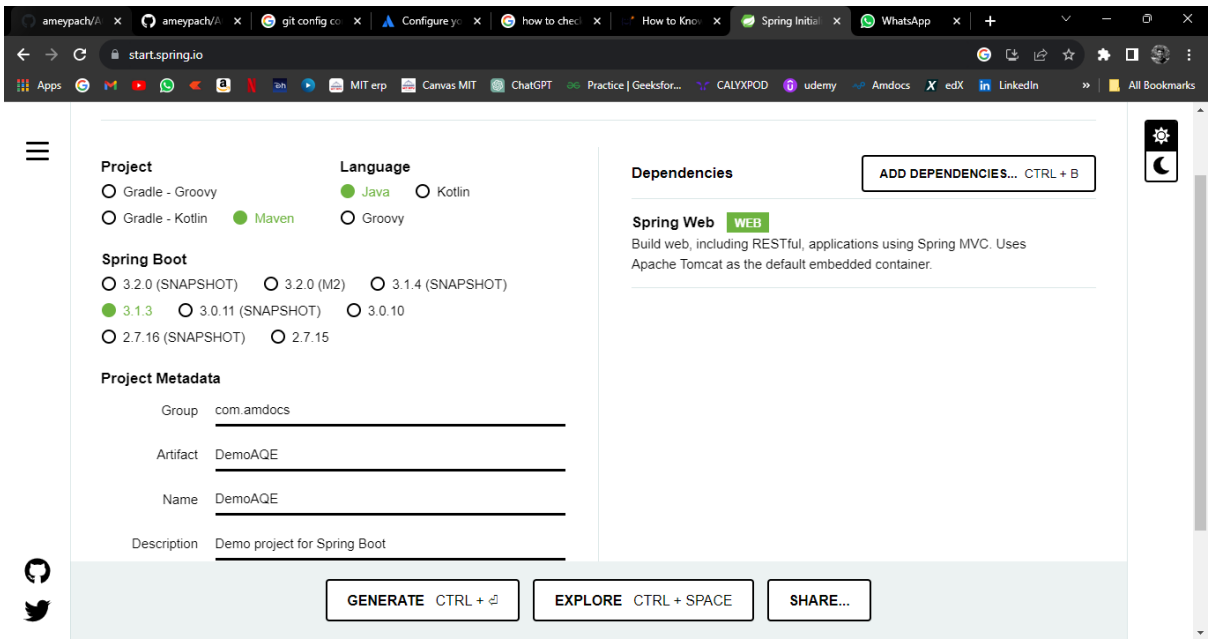
docker build -t [jar filename]:[version name] .

docker run -p 8084:8084 dockerdemo

Tag name:-docker tag dockerdemo:firstimage ameypach/dockerdemo

To push:- docker push tagname (ameypach/dockerdemo)

Screenshots



First created a Spring boot project and added our necessary code

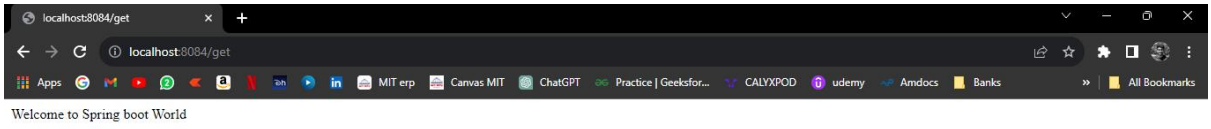
```
D:\Amdocs\Training\DockerDemo\DockerDemo>docker build -t dockerdemo:beta .
[+] Building 3.1s (7/7) FINISHED                                                                                    docker:default
 => [internal] load build definition from Dockerfile                                                                          0.0s
 => => transferring dockerfile: 153B                                                                                          0.0s
 => [internal] load .dockerignore                                                                                             0.0s
 => => transferring context: 2B                                                                                               0.0s
 => [internal] load metadata for docker.io/library/openjdk:17                                                                 3.0s
 => [internal] load build context                                                                                             0.0s
 => => transferring context: 71B                                                                                              0.0s
 => [1/2] FROM docker.io/library/openjdk:17@sha256:528707081fdb9562eb819128a9f85ae7fe000e2fbaeaf9f87662e7b3f38cb7             0.0s
 => CACHED [2/2] ADD target/DockerDemo.jar DockerDemo.jar                                                                     0.0s
 => exporting to image                                                                                                        0.0s
 => => exporting layers                                                                                                       0.0s
 => => writing image sha256:dc91ae1665d9e68921313fab03609bac2f18ab04eed7a05ab5f0402e3aa12a62                                  0.0s
 => => naming to docker.io/library/dockerdemo:beta                                                                            0.0s

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

Executed the following docker commands

```
D:\Amdocs\Training\DockerDemo\DockerDemo>docker images
REPOSITORY                  TAG          IMAGE ID       CREATED          SIZE
dockerdemo                  1.1          dc91ae1665d9   33 hours ago     490MB
dockerdemo                  beta         dc91ae1665d9   33 hours ago     490MB
```

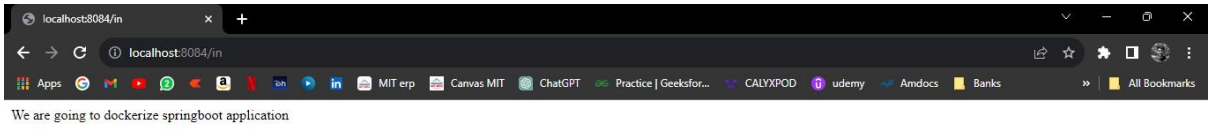
```
D:\Amdocs\Training\DockerDemo\DockerDemo>docker tag dockerdemo:beta ameypach/dockerbetademo

D:\Amdocs\Training\DockerDemo\DockerDemo>docker push ameypach/dockerbetademo
Using default tag: latest
The push refers to repository [docker.io/ameypach/dockerbetademo]
e1de1e137708: Mounted from ameypach/dockerdemo
dc9fa3d8b576: Mounted from ameypach/dockerdemo
27ee19dc88f2: Mounted from ameypach/dockerdemo
c8dd97366670: Mounted from ameypach/dockerdemo
latest: digest: sha256:6683aa083ad352ae4f4c0822b32e2f2e115ce624f74433bac99f2419ac2c1e6f size: 1166
```

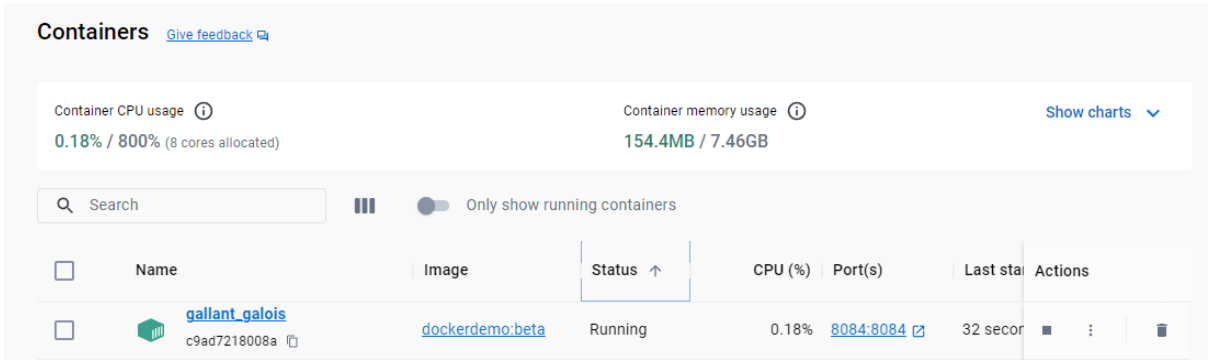
```
D:\Amdocs\Training\DockerDemo\DockerDemo>docker run -p 8084:8084 dockerdemo

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

2023-10-04T17:24:50.391Z  INFO 1 --- [           main] c.a.DockerDemo.DockerDemoApplication     : Starting DockerDemoApplication v0.0.1-SNAPSHOT usi
ng Java 17.0.2 with PID 1 (/DockerDemo.jar started by root in /)
2023-10-04T17:24:50.394Z  INFO 1 --- [           main] c.a.DockerDemo.DockerDemoApplication     : No active profile set, falling back to 1 default p
rofile: "default"
2023-10-04T17:24:51.709Z  INFO 1 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 8084 (http)
2023-10-04T17:24:51.720Z  INFO 1 --- [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2023-10-04T17:24:51.720Z  INFO 1 --- [           main] o.apache.catalina.core.StandardEngine    : Starting Servlet engine: [Apache Tomcat/10.1.13]
2023-10-04T17:24:51.826Z  INFO 1 --- [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext

2023-10-04T17:24:51.828Z  INFO 1 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization complet
ed in 1329 ms
2023-10-04T17:24:52.224Z  INFO 1 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 8084 (http) with contex
t path ''
2023-10-04T17:24:52.253Z  INFO 1 --- [           main] c.a.DockerDemo.DockerDemoApplication     : Started DockerDemoApplication in 2.325 seconds (pr
ocess running for 3.18)
2023-10-04T17:25:36.894Z  INFO 1 --- [nio-8084-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring DispatcherServlet 'dispatcherS
ervlet'
2023-10-04T17:25:36.894Z  INFO 1 --- [nio-8084-exec-1] o.s.web.servlet.DispatcherServlet        : Initializing Servlet 'dispatcherServlet'
2023-10-04T17:25:36.896Z  INFO 1 --- [nio-8084-exec-1] o.s.web.servlet.DispatcherServlet        : Completed initialization in 1 ms
```

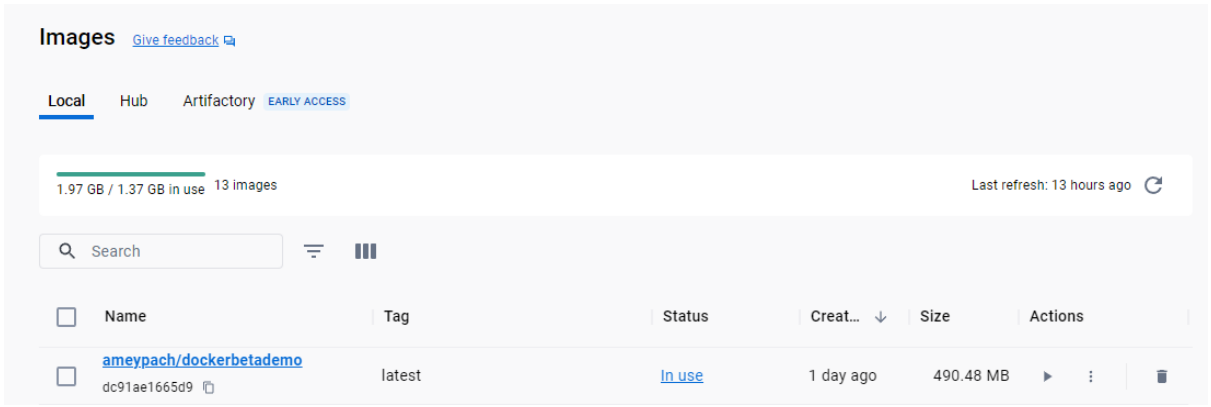


Welcome to Spring boot World

Container running







You can see the changes are reflected on docker desktop as well.