SPRING BOOT
WEB APP

By Gayatri Patil

AGENDA

INTRODUCTION

TECHNOLOGIES AND TOOLS USED

IMPLEMENTATION *AND RESULTS*

CONCLUSION

INTRODUCTION

The goal of this project is to create a **personal portfolio** website using **Spring Boot** for the backend and **HTML/CSS** for the frontend, allowing easy display of personal information, skills, and projects.

The project also demonstrates the implementation of a **CI/CD pipeline** using **Jenkins** for automated builds and deployments, ensuring efficient and streamlined updates.

Additionally, **Docker** is used for containerization, making the application portable, scalable, and easy to deploy across different environments.

TECHNOLOGIES AND TOOLS USED

Spring Boot: Simplified backend development, providing a foundation to serve HTML content.

Maven: For project dependency management and building the application.

Jenkins: For automating the build, test, and deployment pipeline.

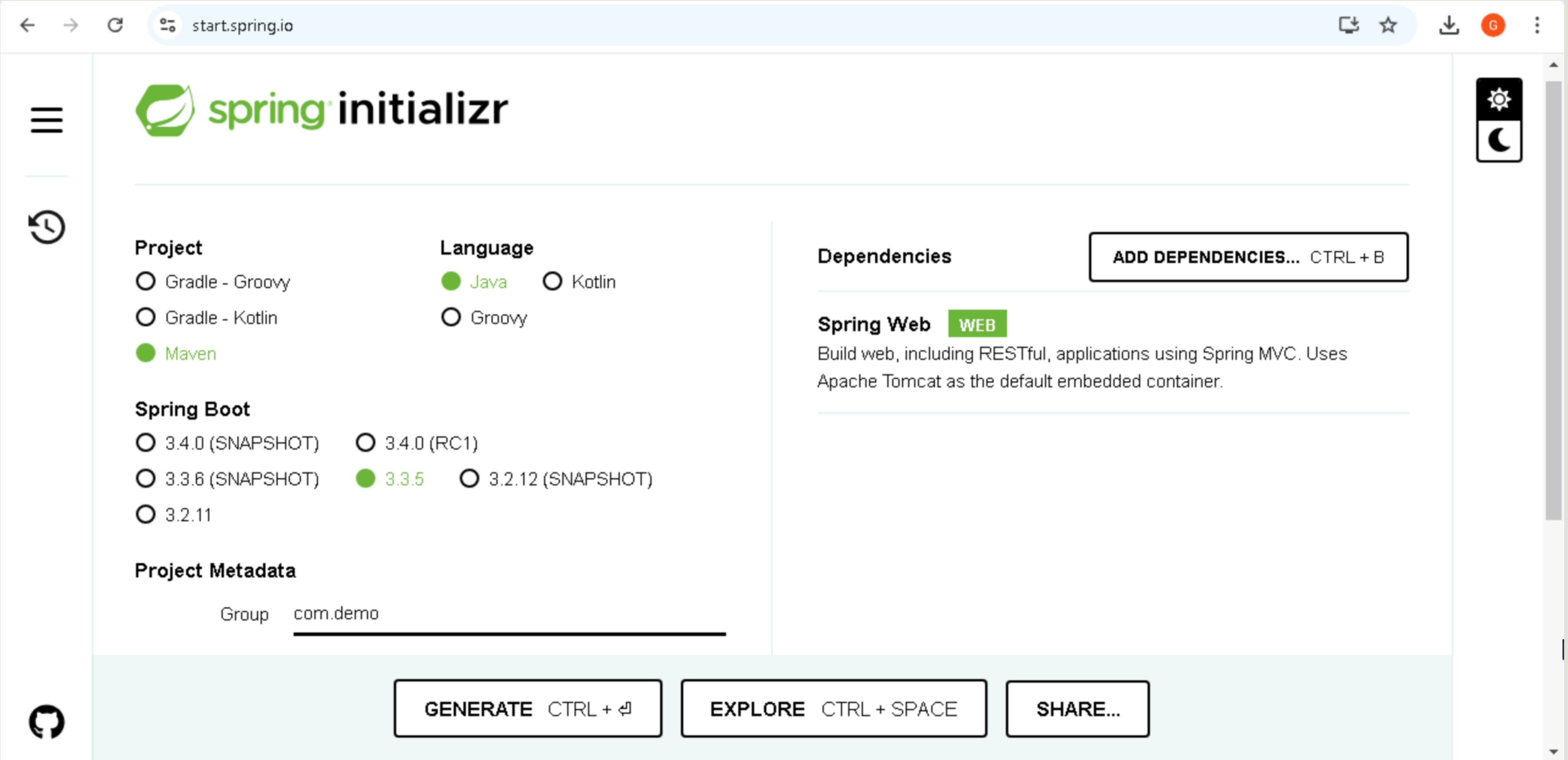
Docker: To containerize the application for consistent deployment across environments.

GitHub: For version control and collaboration.

IMPLEMENTATION *AND RESULTS*

Development Process

Step 1: Set up Spring Boot Application (using Spring Initializer)



start.spring.io

spring initializr

Project
○ Gradle - Groovy
○ Gradle - Kotlin
● Maven

Language
● Java ○ Kotlin
○ Groovy

Spring Boot
○ 3.4.0 (SNAPSHOT) ○ 3.4.0 (RC1)
○ 3.3.6 (SNAPSHOT) ● 3.3.5 ○ 3.2.12 (SNAPSHOT)
○ 3.2.11

Project Metadata

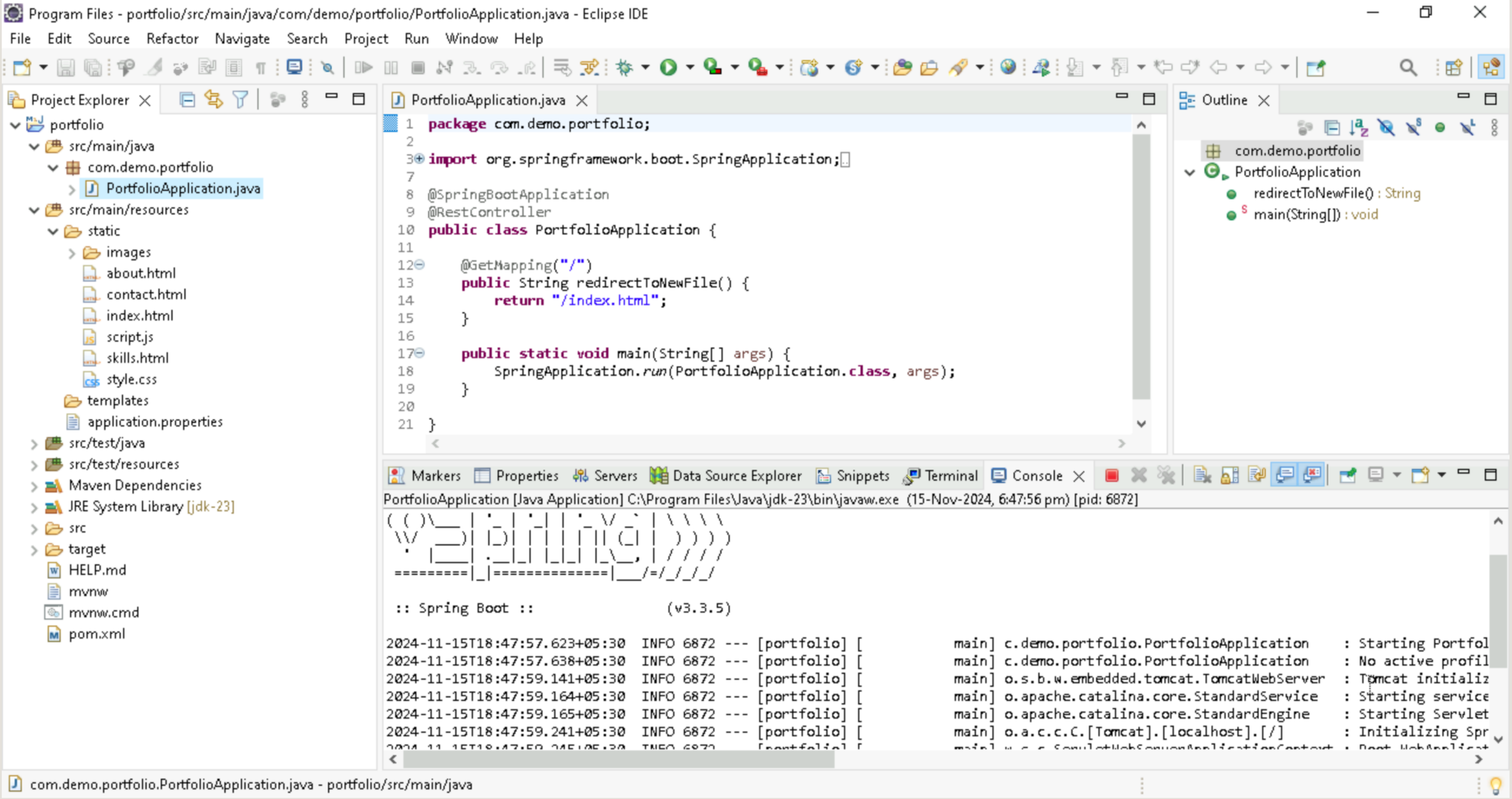
Group com.demo

Dependencies ADD DEPENDENCIES... CTRL + B

Spring Web WEB
Build web, including RESTful, applications using Spring MVC. Uses Apache Tomcat as the default embedded container.

GENERATE CTRL + ⏎ EXPLORE CTRL + SPACE SHARE...

Step 2: Added HTML Portfolio Pages

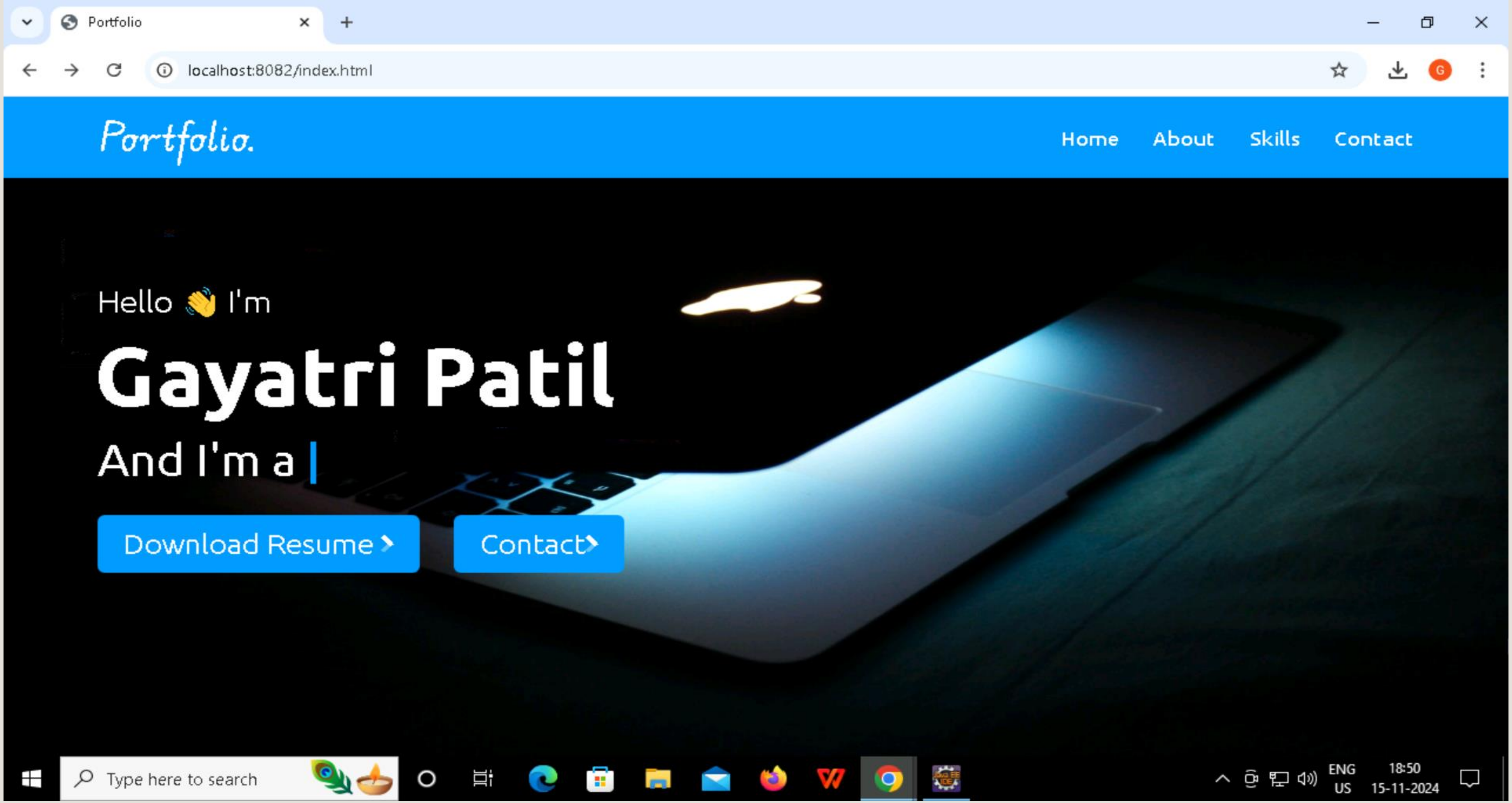


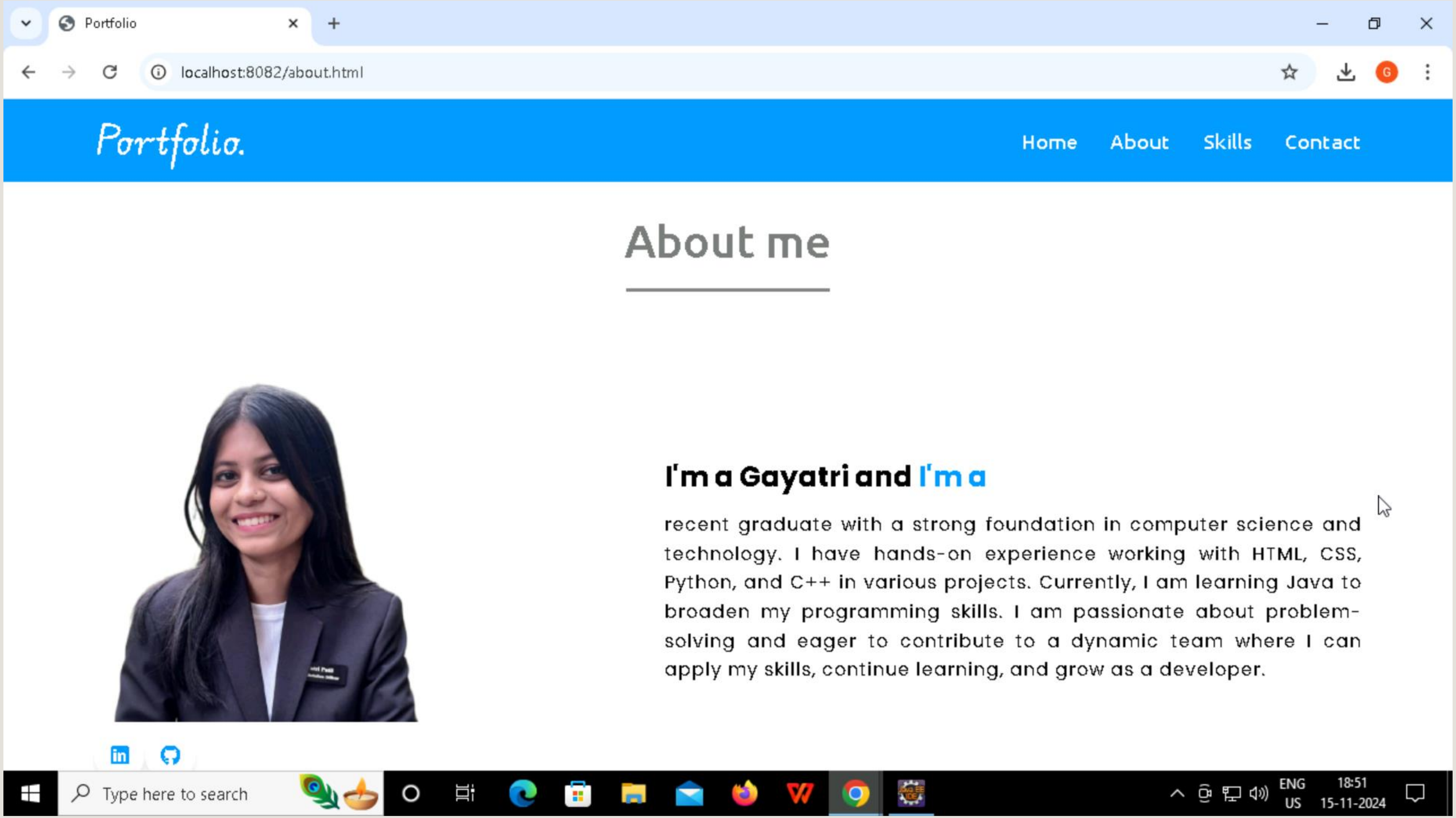
```java
package com.demo.portfolio;

import org.springframework.boot.SpringApplication;

@SpringBootApplication
@RestController
public class PortfolioApplication {

    @GetMapping("/")
    public String redirectToNewFile() {
        return "/index.html";
    }

    public static void main(String[] args) {
        SpringApplication.run(PortfolioApplication.class, args);
    }

}
```

PortfolioApplication [Java Application] C:\Program Files\Java\jdk-23\bin\javaw.exe (15-Nov-2024, 6:47:56 pm) [pid: 6872]

```
( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/

 :: Spring Boot ::                (v3.3.5)

2024-11-15T18:47:57.623+05:30  INFO 6872 --- [portfolio] [           main] c.demo.portfolio.PortfolioApplication    : Starting Portfol
2024-11-15T18:47:57.638+05:30  INFO 6872 --- [portfolio] [           main] c.demo.portfolio.PortfolioApplication    : No active profil
2024-11-15T18:47:59.141+05:30  INFO 6872 --- [portfolio] [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initializ
2024-11-15T18:47:59.164+05:30  INFO 6872 --- [portfolio] [           main] o.apache.catalina.core.StandardService   : Starting service
2024-11-15T18:47:59.165+05:30  INFO 6872 --- [portfolio] [           main] o.apache.catalina.core.StandardEngine    : Starting Servlet
2024-11-15T18:47:59.241+05:30  INFO 6872 --- [portfolio] [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spr
```

Step 3: Running the Application

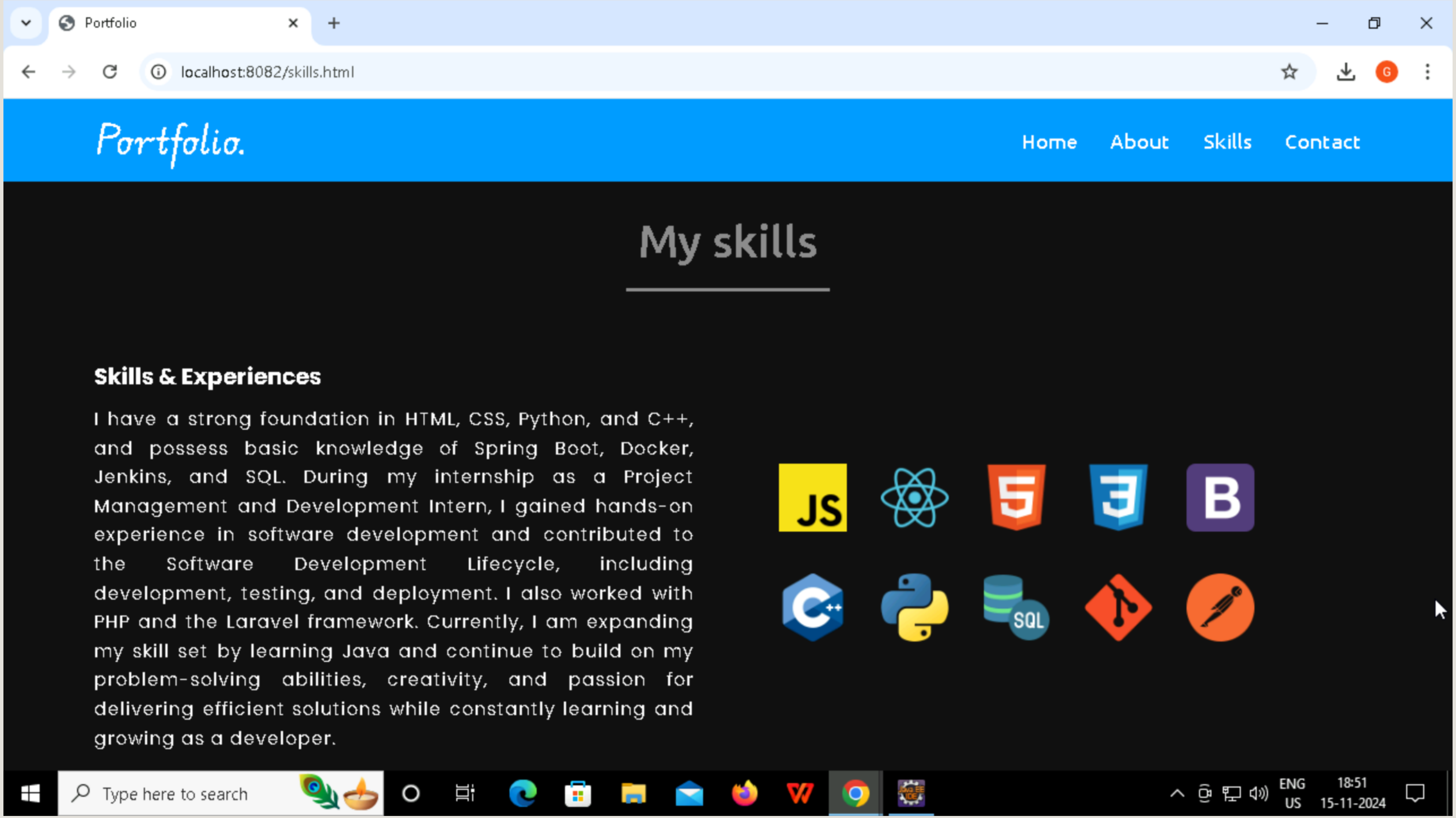




About me

I'm a Gayatri and I'm a

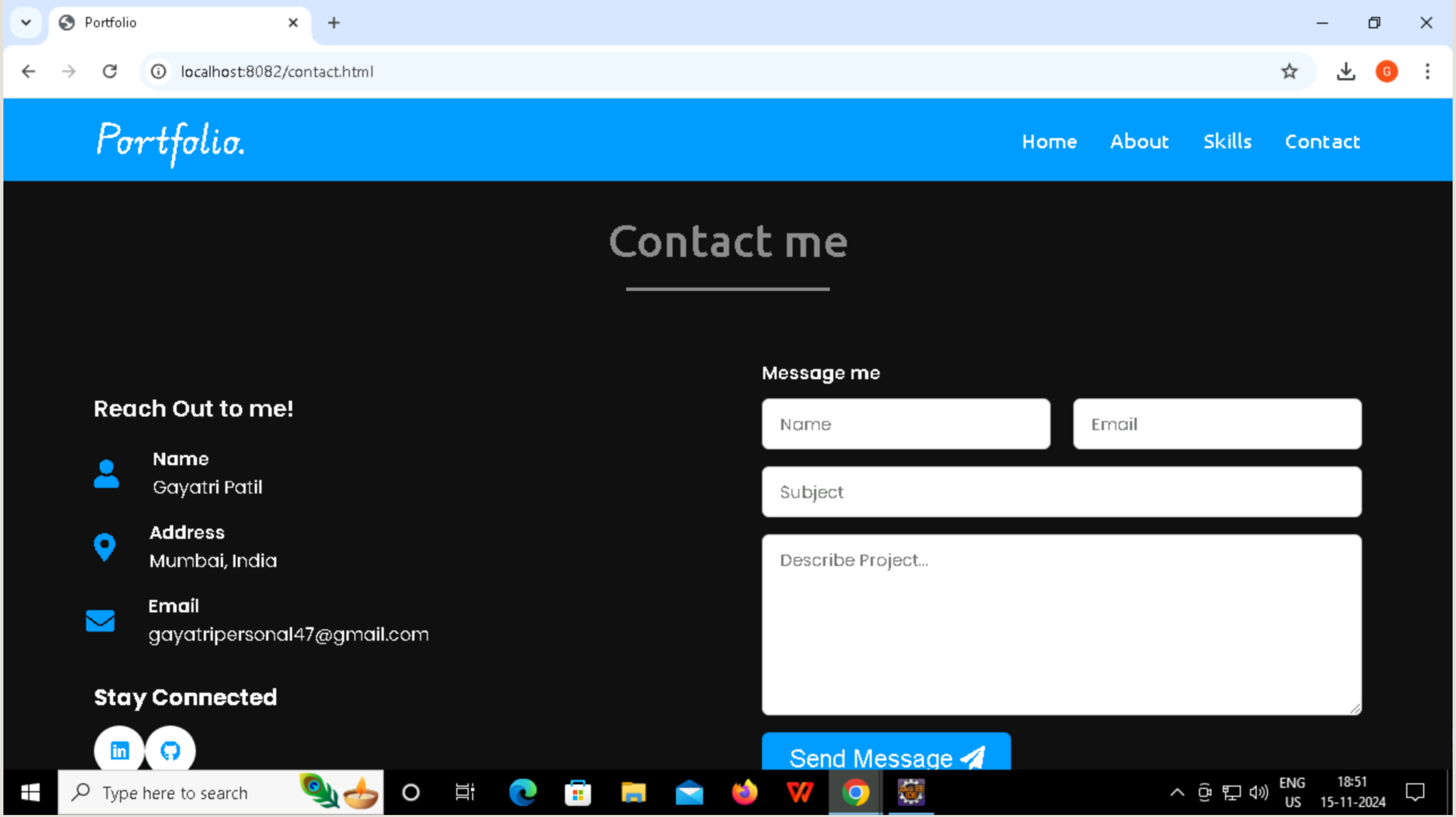
recent graduate with a strong foundation in computer science and technology. I have hands-on experience working with HTML, CSS, Python, and C++ in various projects. Currently, I am learning Java to broaden my programming skills. I am passionate about problem-solving and eager to contribute to a dynamic team where I can apply my skills, continue learning, and grow as a developer.



My skills

Skills & Experiences

I have a strong foundation in HTML, CSS, Python, and C++, and possess basic knowledge of Spring Boot, Docker, Jenkins, and SQL. During my internship as a Project Management and Development Intern, I gained hands-on experience in software development and contributed to the Software Development Lifecycle, including development, testing, and deployment. I also worked with PHP and the Laravel framework. Currently, I am expanding my skill set by learning Java and continue to build on my problem-solving abilities, creativity, and passion for delivering efficient solutions while constantly learning and growing as a developer.



Contact me

Reach Out to me!

Name
Gayatri Patil

Address
Mumbai, India

Email
gayatripersonal47@gmail.com

Stay Connected

Message me

Name

Email

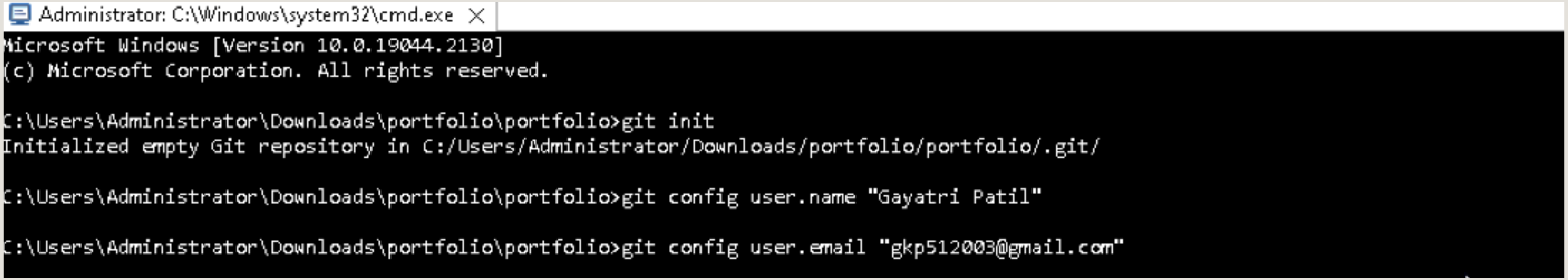
Subject

Describe Project...

Send Message

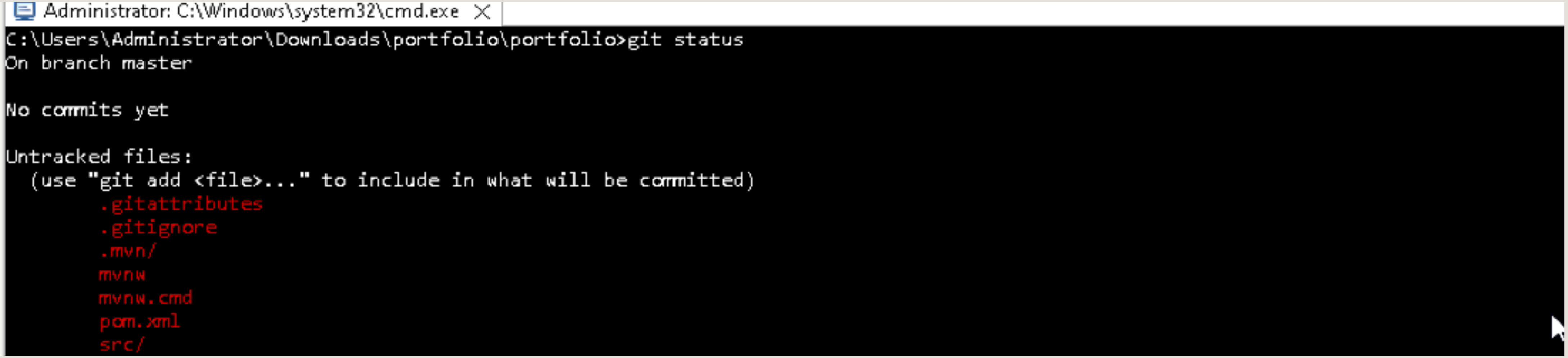
Version Control (GitHub)

Step 1: Initialize the Git Repository



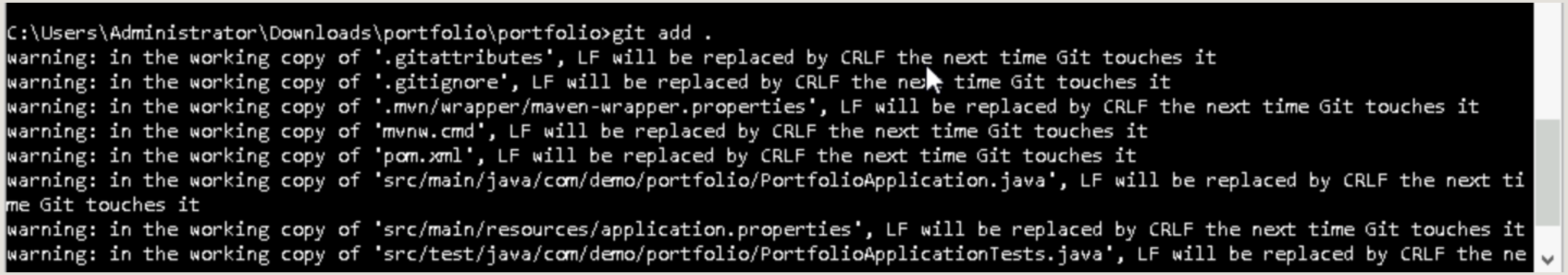
```
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator\Downloads\portfolio\portfolio>git init
Initialized empty Git repository in C:/Users/Administrator/Downloads/portfolio/portfolio/.git/

C:\Users\Administrator\Downloads\portfolio\portfolio>git config user.name "Gayatri Patil"

C:\Users\Administrator\Downloads\portfolio\portfolio>git config user.email "gkp512003@gmail.com"
```

Step 2. Check Status



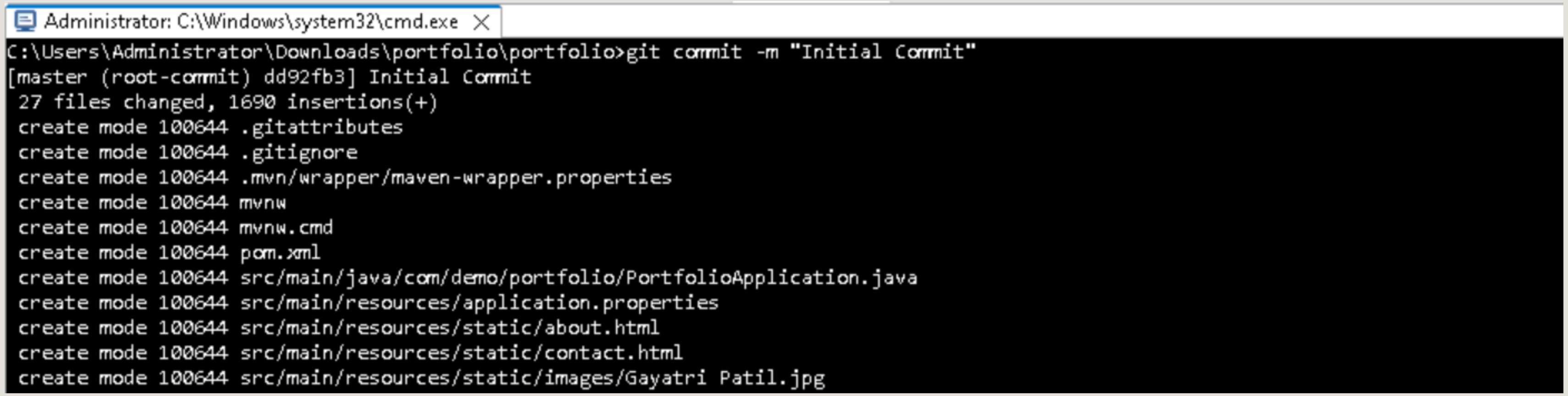
```
C:\Users\Administrator\Downloads\portfolio\portfolio>git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .gitattributes
        .gitignore
        .mvn/
        mvnw
        mvnw.cmd
        pom.xml
        src/
```

Step 3: Add Files to the Repository



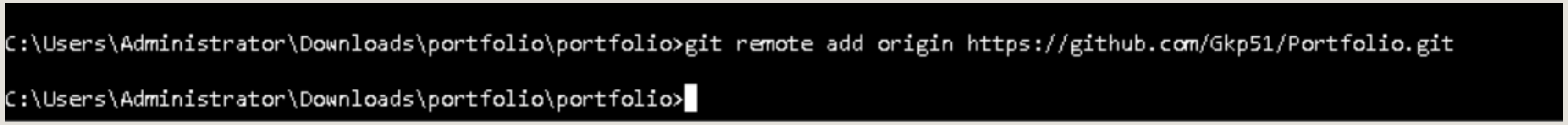
```
C:\Users\Administrator\Downloads\portfolio\portfolio>git add .
warning: in the working copy of '.gitattributes', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of '.gitignore', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of '.mvn/wrapper/maven-wrapper.properties', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'mvnw.cmd', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'pom.xml', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'src/main/java/com/demo/portfolio/PortfolioApplication.java', LF will be replaced by CRLF the next ti
me Git touches it
warning: in the working copy of 'src/main/resources/application.properties', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'src/test/java/com/demo/portfolio/PortfolioApplicationTests.java', LF will be replaced by CRLF the ne
```

Step 4: Commit Changes



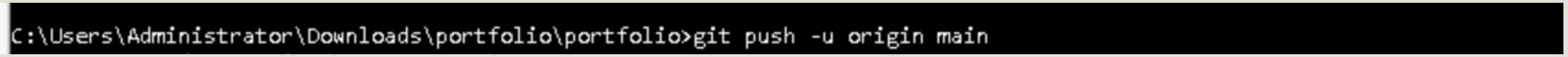
```
C:\Users\Administrator\Downloads\portfolio\portfolio>git commit -m "Initial Commit"
[master (root-commit) dd92fb3] Initial Commit
 27 files changed, 1690 insertions(+)
 create mode 100644 .gitattributes
 create mode 100644 .gitignore
 create mode 100644 .mvn/wrapper/maven-wrapper.properties
 create mode 100644 mvnw
 create mode 100644 mvnw.cmd
 create mode 100644 pom.xml
 create mode 100644 src/main/java/com/demo/portfolio/PortfolioApplication.java
 create mode 100644 src/main/resources/application.properties
 create mode 100644 src/main/resources/static/about.html
 create mode 100644 src/main/resources/static/contact.html
 create mode 100644 src/main/resources/static/images/Gayatri Patil.jpg
```

Step 5: Create a Remote Repository on GitHub

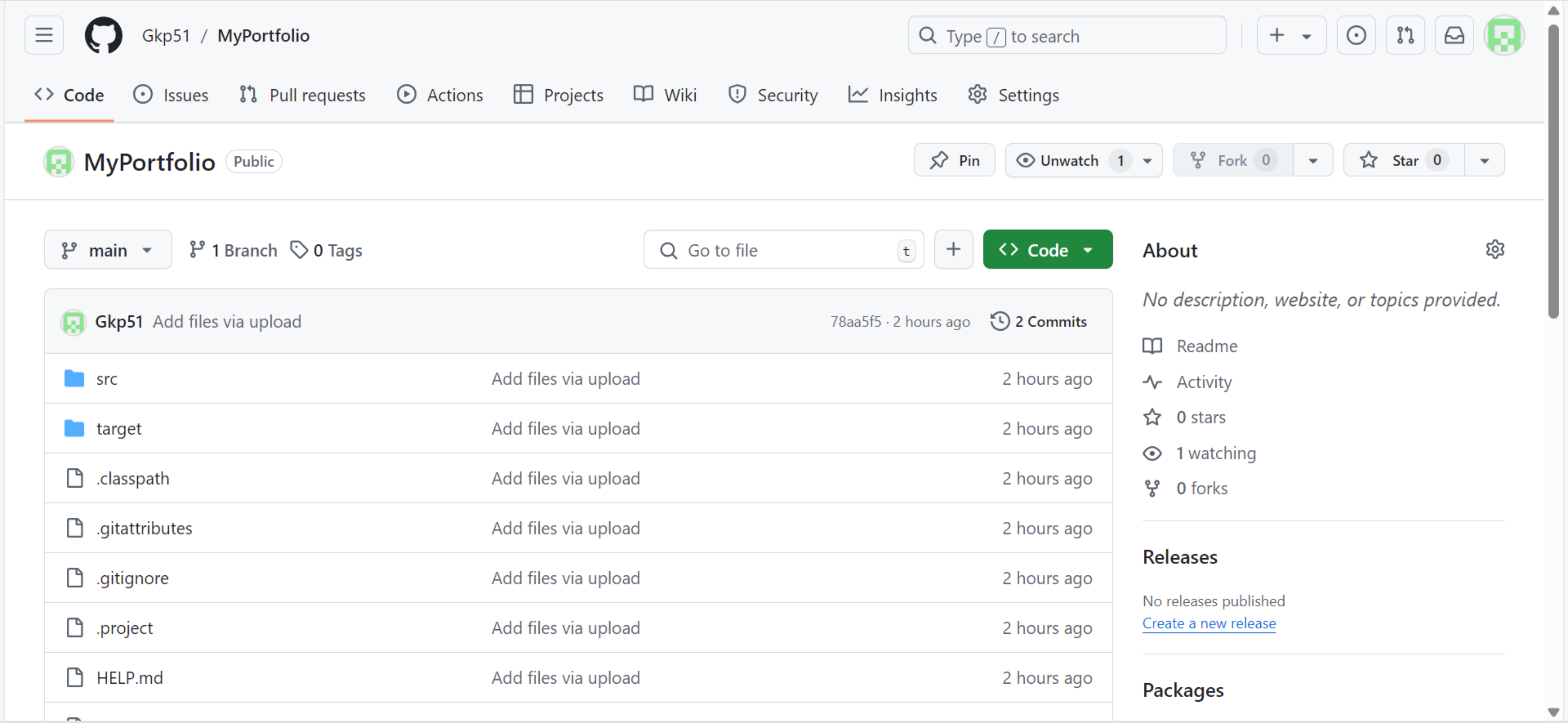


```
C:\Users\Administrator\Downloads\portfolio\portfolio>git remote add origin https://github.com/Gkp51/Portfolio.git

C:\Users\Administrator\Downloads\portfolio\portfolio>
```

Step 6: Push the Project to GitHub



```
C:\Users\Administrator\Downloads\portfolio\portfolio>git push -u origin main
```



Gkp51 Add files via upload 78aa5f5 · 2 hours ago 2 Commits

src	Add files via upload	2 hours ago
target	Add files via upload	2 hours ago
.classpath	Add files via upload	2 hours ago
.gitattributes	Add files via upload	2 hours ago
.gitignore	Add files via upload	2 hours ago
.project	Add files via upload	2 hours ago
HELP.md	Add files via upload	2 hours ago

About

No description, website, or topics provided.

Readme

Activity

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

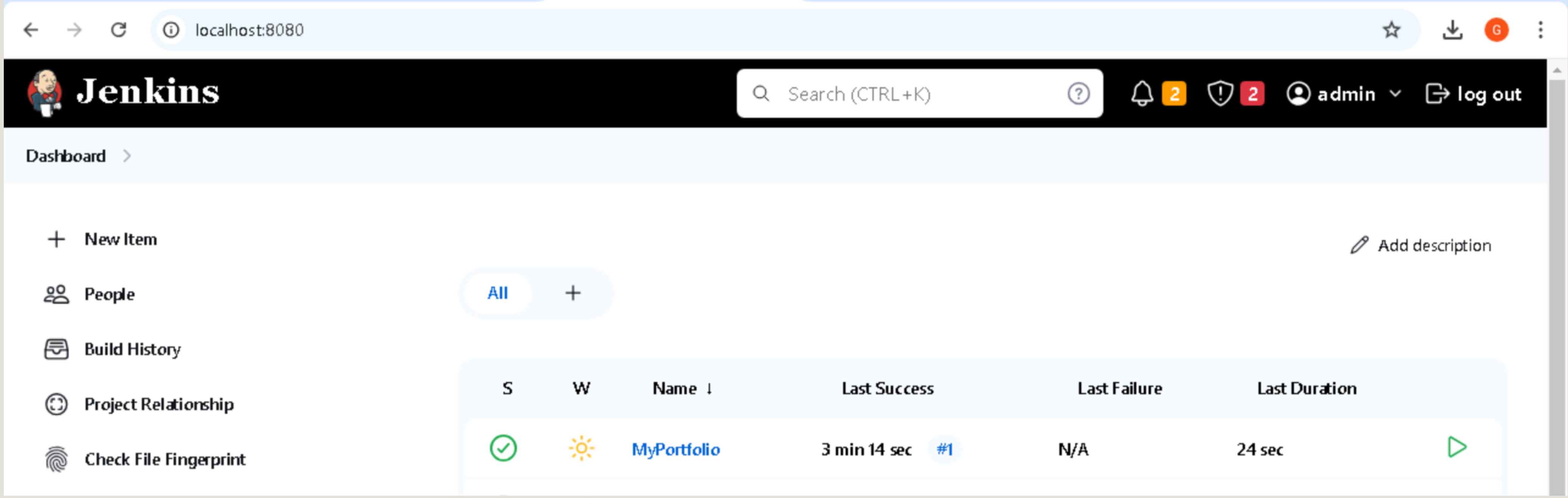
Packages

CI/CD Pipeline with Jenkins

Pipeline Stages:

- Checkout – Pulls the code from GitHub repository.
- Build – Runs maven clean install to build the project.
- Test – If applicable, runs automated unit tests.
- Deploy – Deploys the application

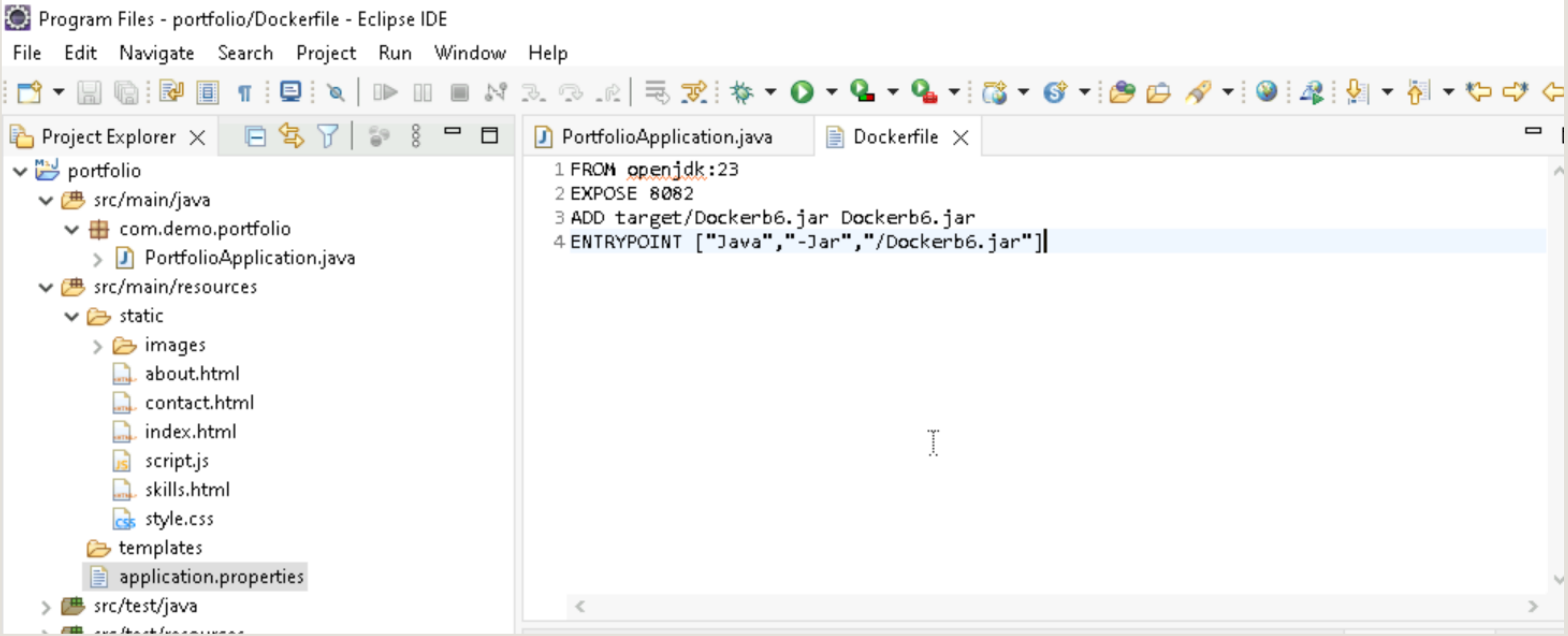
Automated the process so that whenever a commit is made to GitHub, Jenkins automatically builds and deploys the updated application.



S	W	Name ↓	Last Success	Last Failure	Last Duration	
✓	☀	MyPortfolio	3 min 14 sec #1	N/A	24 sec	▷

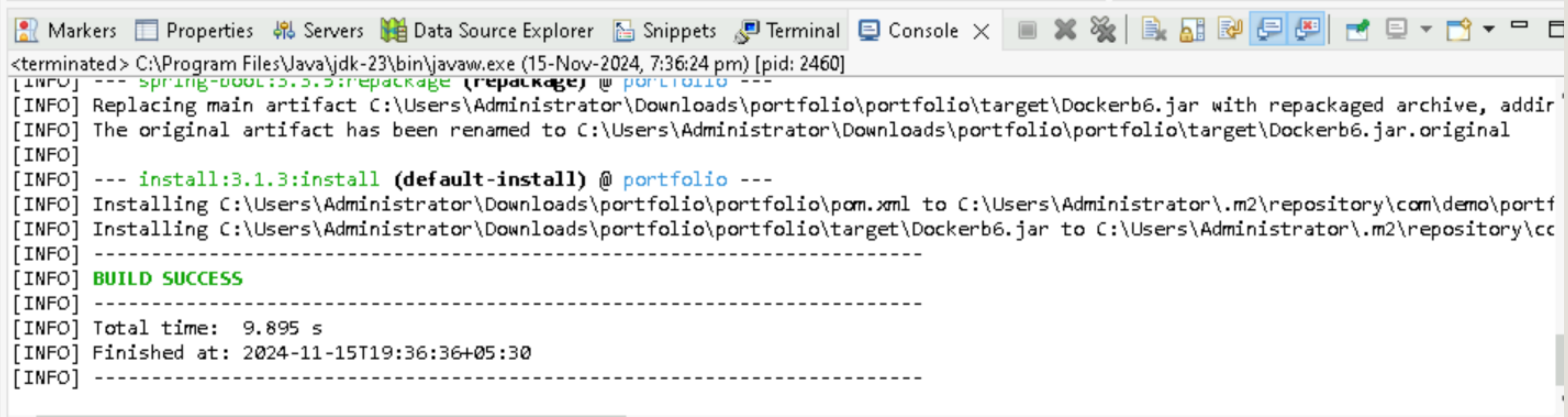
Dockerization Process

Step 1: Created Dockerfile

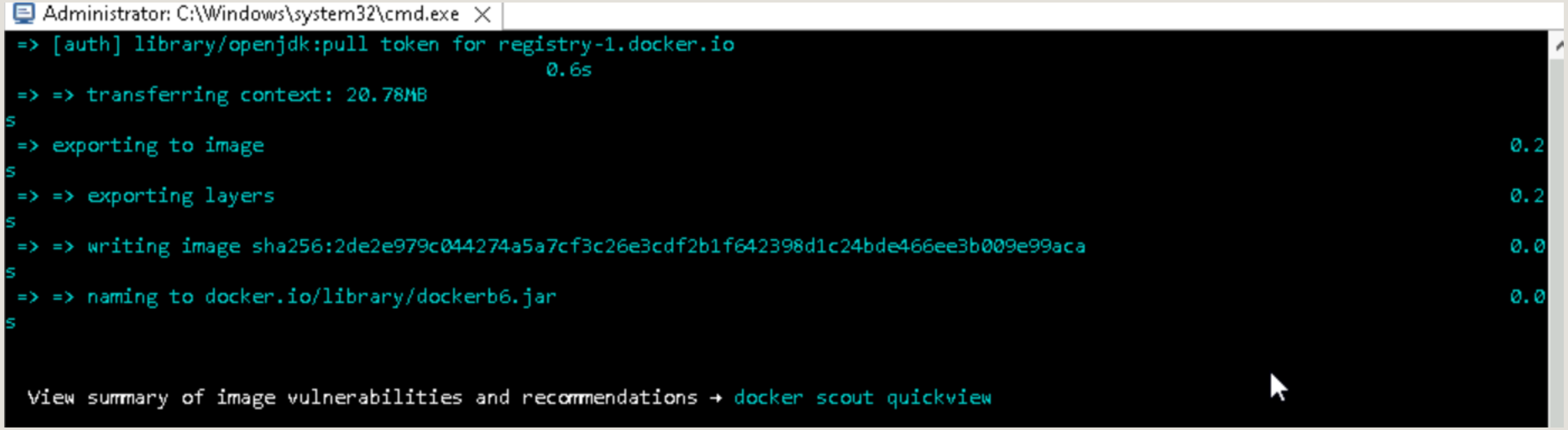


```
FROM openjdk:23
EXPOSE 8082
ADD target/Dockerb6.jar Dockerb6.jar
ENTRYPOINT ["Java","-Jar","/Dockerb6.jar"]
```

Step 2: Build Docker Image



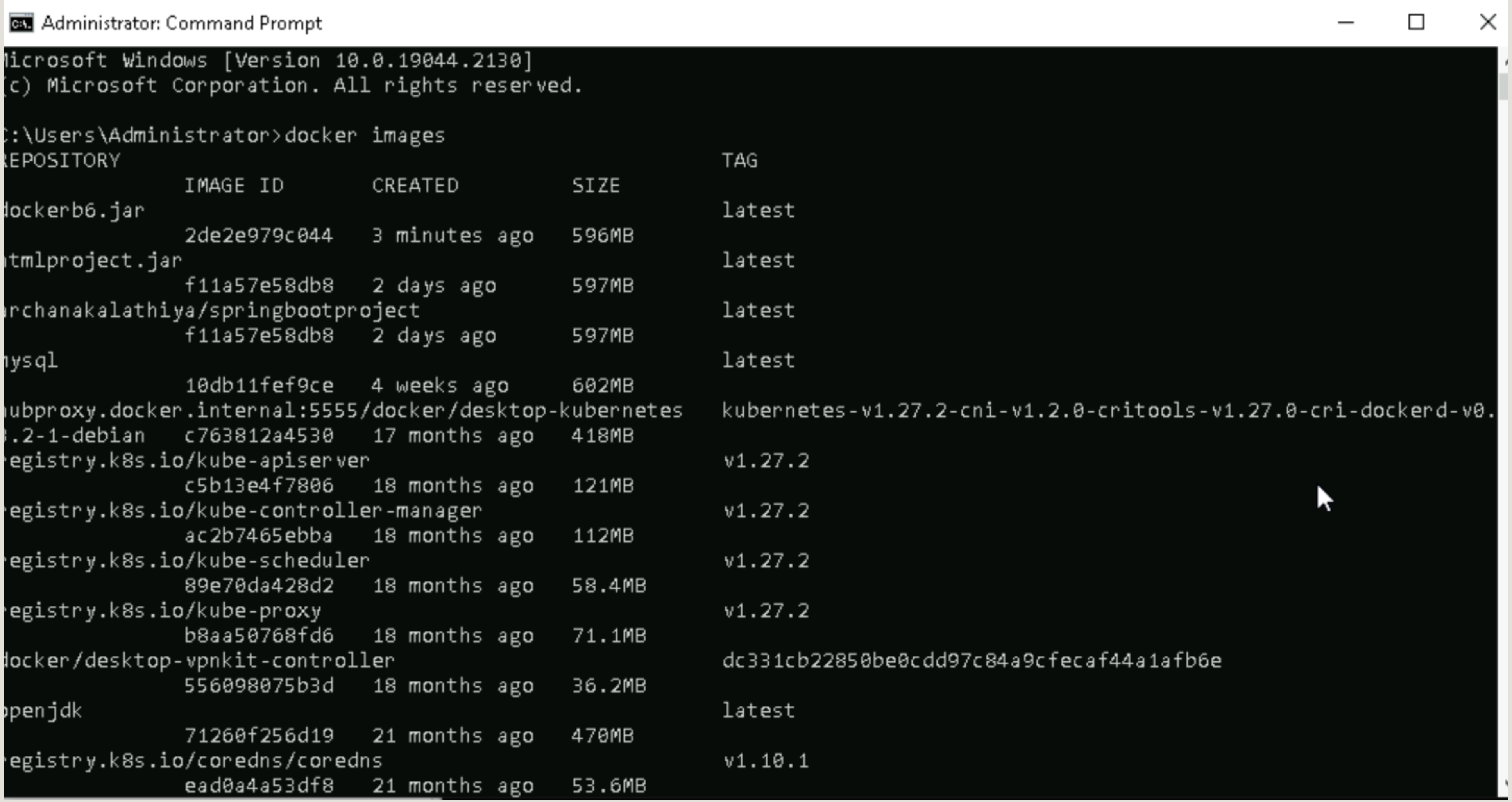
```
<terminated> C:\Program Files\Java\jdk-23\bin\javaw.exe (15-Nov-2024, 7:36:24 pm) [pid: 2460]
[INFO] --- spring-boot:3.3.5:repackage (repackage) @ portfolio ---
[INFO] Replacing main artifact C:\Users\Administrator\Downloads\portfolio\portfolio\target\Dockerb6.jar with repackaged archive, addir
[INFO] The original artifact has been renamed to C:\Users\Administrator\Downloads\portfolio\portfolio\target\Dockerb6.jar.original
[INFO]
[INFO] --- install:3.1.3:install (default-install) @ portfolio ---
[INFO] Installing C:\Users\Administrator\Downloads\portfolio\portfolio\pom.xml to C:\Users\Administrator\.m2\repository\com\demo\portf
[INFO] Installing C:\Users\Administrator\Downloads\portfolio\portfolio\target\Dockerb6.jar to C:\Users\Administrator\.m2\repository\cc
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  9.895 s
[INFO] Finished at: 2024-11-15T19:36:36+05:30
[INFO] ------------------------------------------------------------------------
```



```
 => [auth] library/openjdk:pull token for registry-1.docker.io
                                                        0.6s
 => => transferring context: 20.78MB
s
 => exporting to image                                                                                                   0.2
s
 => => exporting layers                                                                                                  0.2
s
 => => writing image sha256:2de2e979c044274a5a7cf3c26e3cdf2b1f642398d1c24bde466ee3b009e99aca                              0.0
s
 => => naming to docker.io/library/dockerb6.jar                                                                          0.0
s


  View summary of image vulnerabilities and recommendations → docker scout quickview
```

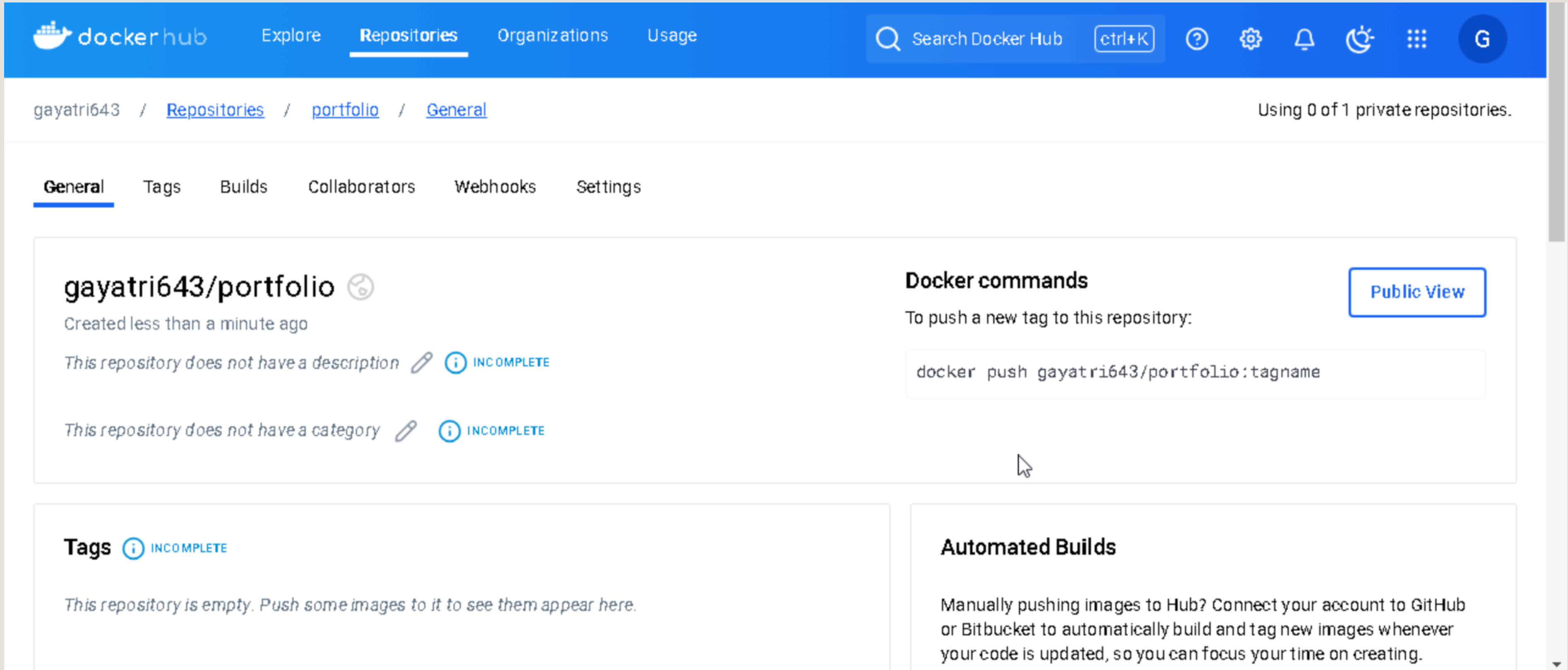
Portfolio Web App

Step 3: Pushed to Docker Hub



```
icrosoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

:\Users\Administrator>docker images
EPOSITORY                                                 TAG
              IMAGE ID       CREATED          SIZE
ockerb6.jar                                               latest
              2de2e979c044   3 minutes ago    596MB
tmlproject.jar                                            latest
              f11a57e58db8   2 days ago       597MB
rchanakalathiya/springbootproject                         latest
              f11a57e58db8   2 days ago       597MB
ysql                                                      latest
              10db11fef9ce   4 weeks ago      602MB
ubproxy.docker.internal:5555/docker/desktop-kubernetes   kubernetes-v1.27.2-cni-v1.2.0-critools-v1.27.0-cri-dockerd-v0.
.2-1-debian   c763812a4530   17 months ago    418MB
egistry.k8s.io/kube-apiserver                             v1.27.2
              c5b13e4f7806   18 months ago    121MB
egistry.k8s.io/kube-controller-manager                    v1.27.2
              ac2b7465ebba   18 months ago    112MB
egistry.k8s.io/kube-scheduler                             v1.27.2
              89e70da428d2   18 months ago    58.4MB
egistry.k8s.io/kube-proxy                                 v1.27.2
              b8aa50768fd6   18 months ago    71.1MB
ocker/desktop-vpnkit-controller                           dc331cb22850be0cdd97c84a9cfecaf44a1afb6e
              556098075b3d   18 months ago    36.2MB
penjdk                                                    latest
              71260f256d19   21 months ago    470MB
egistry.k8s.io/coredns/coredns                            v1.10.1
              ead0a4a53df8   21 months ago    53.6MB
```

Created a Docker Hub repository to store and manage Docker images.



gayatri643 / Repositories / portfolio / General

Using 0 of 1 private repositories.

gayatri643/portfolio

Created less than a minute ago

This repository does not have a description INCOMPLETE

This repository does not have a category INCOMPLETE

Docker commands

To push a new tag to this repository:

```
docker push gayatri643/portfolio:tagname
```

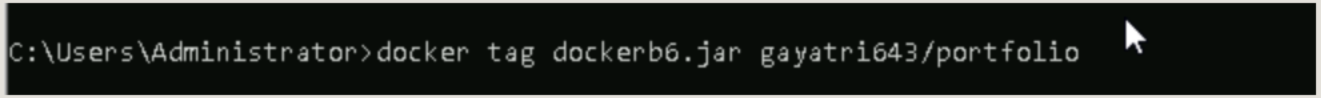
Tags INCOMPLETE

This repository is empty. Push some images to it to see them appear here.

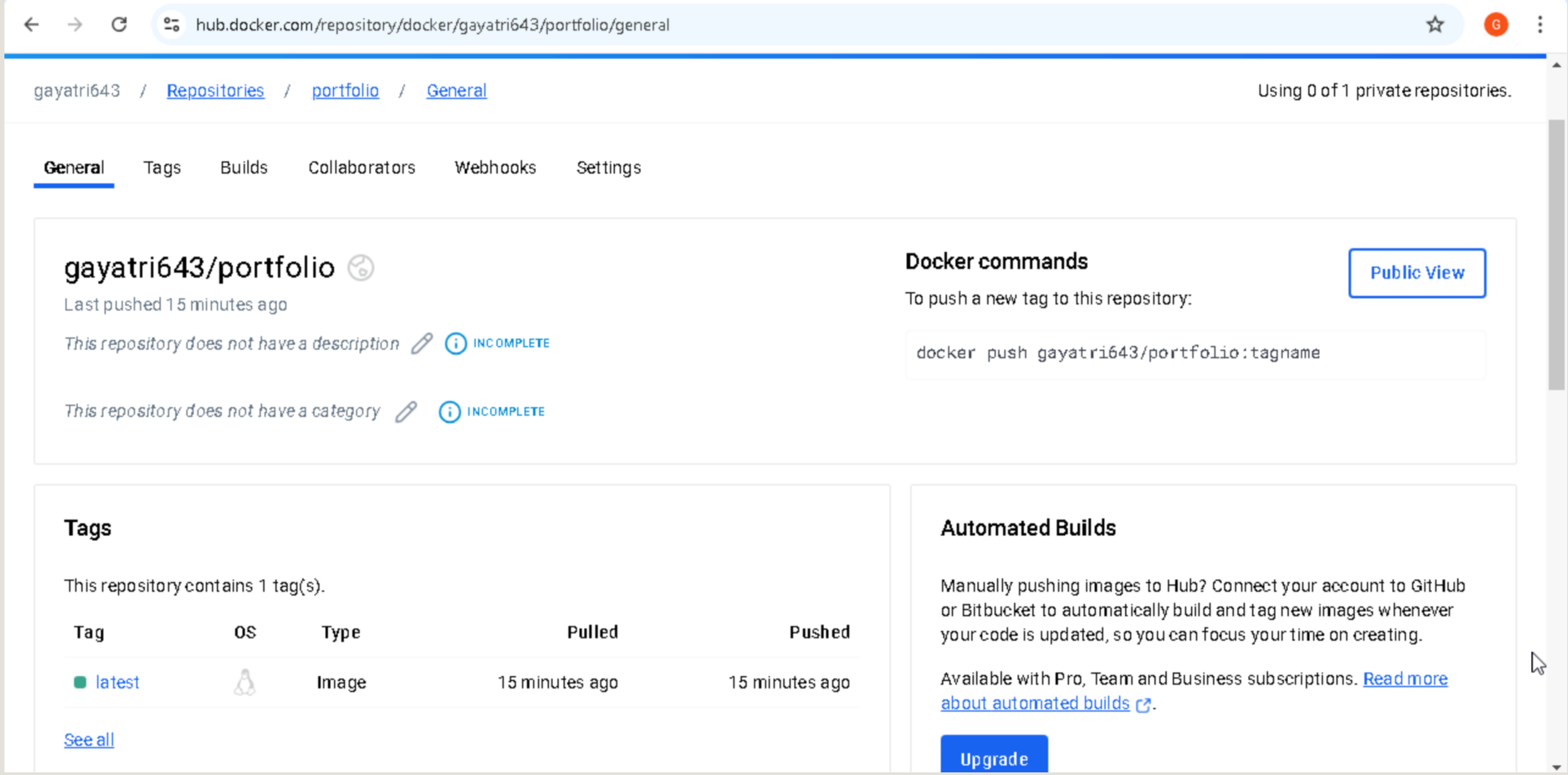
Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Tagged and pushed the Docker image to Docker Hub



```
C:\Users\Administrator>docker tag dockerb6.jar gayatri643/portfolio
```



hub.docker.com/repository/docker/gayatri643/portfolio/general

gayatri643 / Repositories / portfolio / General

Using 0 of 1 private repositories.

General
Tags
Builds
Collaborators
Webhooks
Settings

gayatri643/portfolio

Last pushed 15 minutes ago

This repository does not have a description INCOMPLETE

This repository does not have a category INCOMPLETE

Docker commands

To push a new tag to this repository:

```
docker push gayatri643/portfolio:tagname
```

Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
🟩 latest		Image	15 minutes ago	15 minutes ago

See all

Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. Read more about automated builds.

CONCLUSION

In conclusion, this project demonstrates my ability to build a full-stack web application using **Spring Boot** for the backend and **HTML/CSS** for the frontend, while integrating modern software development practices such as **CI/CD** with **Jenkins** and **containerization** with **Docker**. The use of **GitHub** for version control ensures efficient collaboration and code management. Overall, this project showcases not only my technical skills in web development and DevOps but also my ability to automate deployment and ensure scalability and portability of applications.

THANK YOU

Gayatri Patil