TECHNOLOGY

Integration and Deployment

Phase-End Project

Objectives

To build an infrastructure to host software on an AWS EC2 instance for a clinic to have online data access for pets, their owners, and consultation fees

Prerequisites

- Spring Boot
- Jenkins
- Docker
- AWS

Problem Statement and Motivation

Problem Statement:

This assignment is designed to help you understand how to plan and develop the back end of a given problem, gain hands-on experience building the CI/CD Pipeline using Jenkins, and containerize the application on the AWS cloud platform.

Real-World Scenario:

Dr. Shawn runs a pet clinic. He needs to record the visits and other details associated with the pets and their owners visiting his clinic. He has software developed by Bella Solutions to manage it.

Bella Solutions aims to host the software solution for Dr. Shawn on an AWS EC2 instance to have online access from anywhere by building a CI CD Pipeline and containerizing the solution using Docker on AWS EC2.

Industry Relevance

Skills used in the project and their usage in the industry are given below:

Jenkins:

It is a popular CI/CD pipeline tool that helps automate and integrate multiple technologies and stages of software development.

Docker:

Apart from various use cases for Docker, it is mostly used for containing an entire application as a lightweight image, which can then be deployed on multiple servers.

AWS and EC2:

AWS is one of the most popular cloud platforms for managing different applications and projects of any scale. EC2 is one of the simplest ways to get an application deployed.

Task (Activities)

1. Import the Spring Boot project with the generated code in Eclipse
2. Configure the project with Dockerfile and Jenkinsfile
3. Build the project using the Maven package
4. Create and launch AWS EC2 instance
5. Configure EC2 instance with JDK 11, Docker, and Jenkins
6. Sync the given code to the Git repository
7. Create Jenkins pipeline on EC2 with Git and GitHub
8. Build the pipeline to dockerize the application

Project Reference

Task 1:

Spring Boot: Lesson 1

Task 2:

Jenkins: Lesson 3

Docker: Lesson 3

Task 3:

Spring Boot: Lesson 1

Tasks 4 and 5:

Jenkins: Lesson 3

Tasks 6 and 7:

Jenkins: Lesson 1

Task 8:

Docker: Lessons 2 and 3

Submission Process

You will have to submit the project in one week.

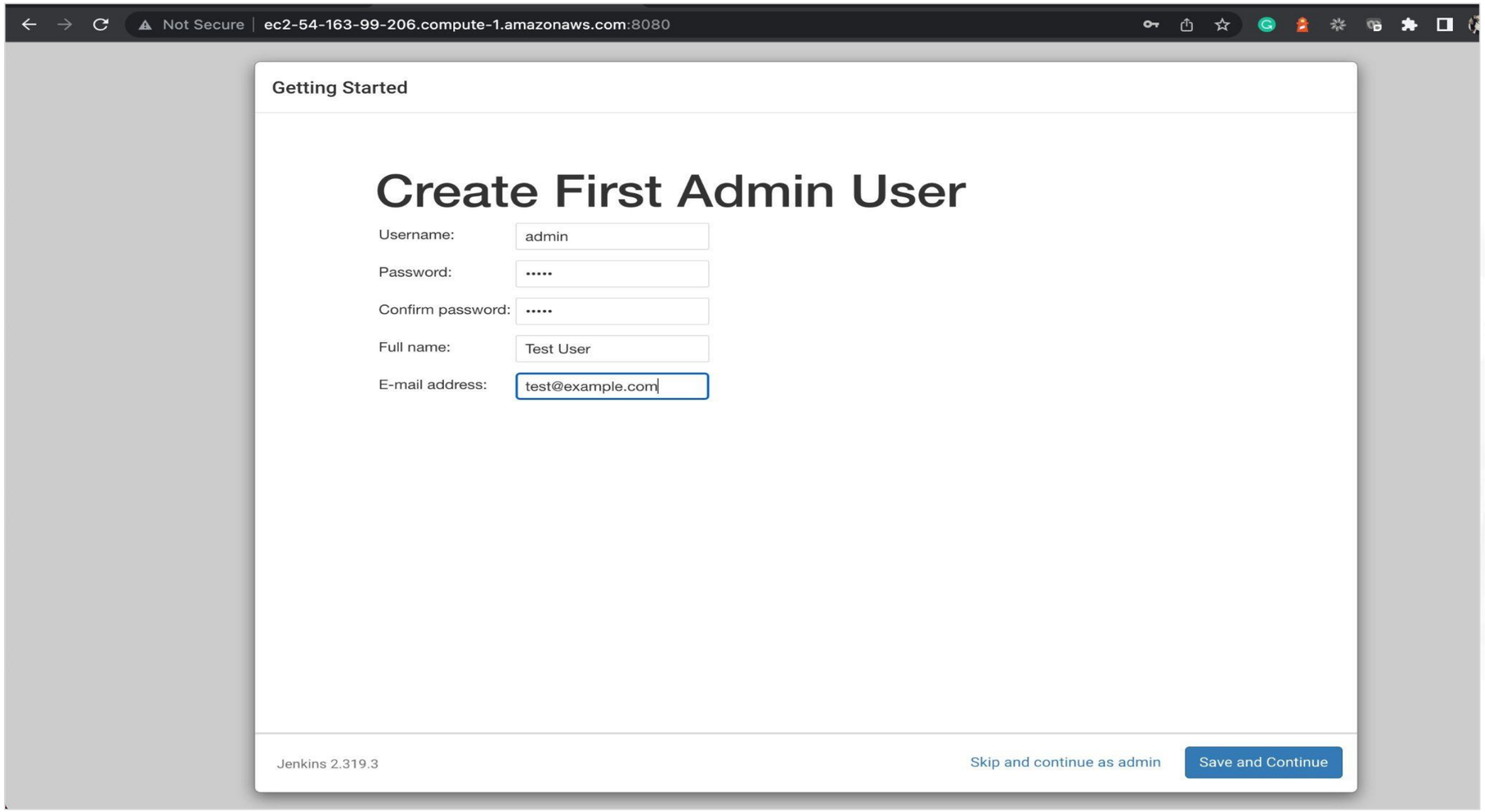
It is recommended to work in the integrated labs, as they have all the required tools available.

The project can be submitted from the assessment tab by clicking the **Submit** button.

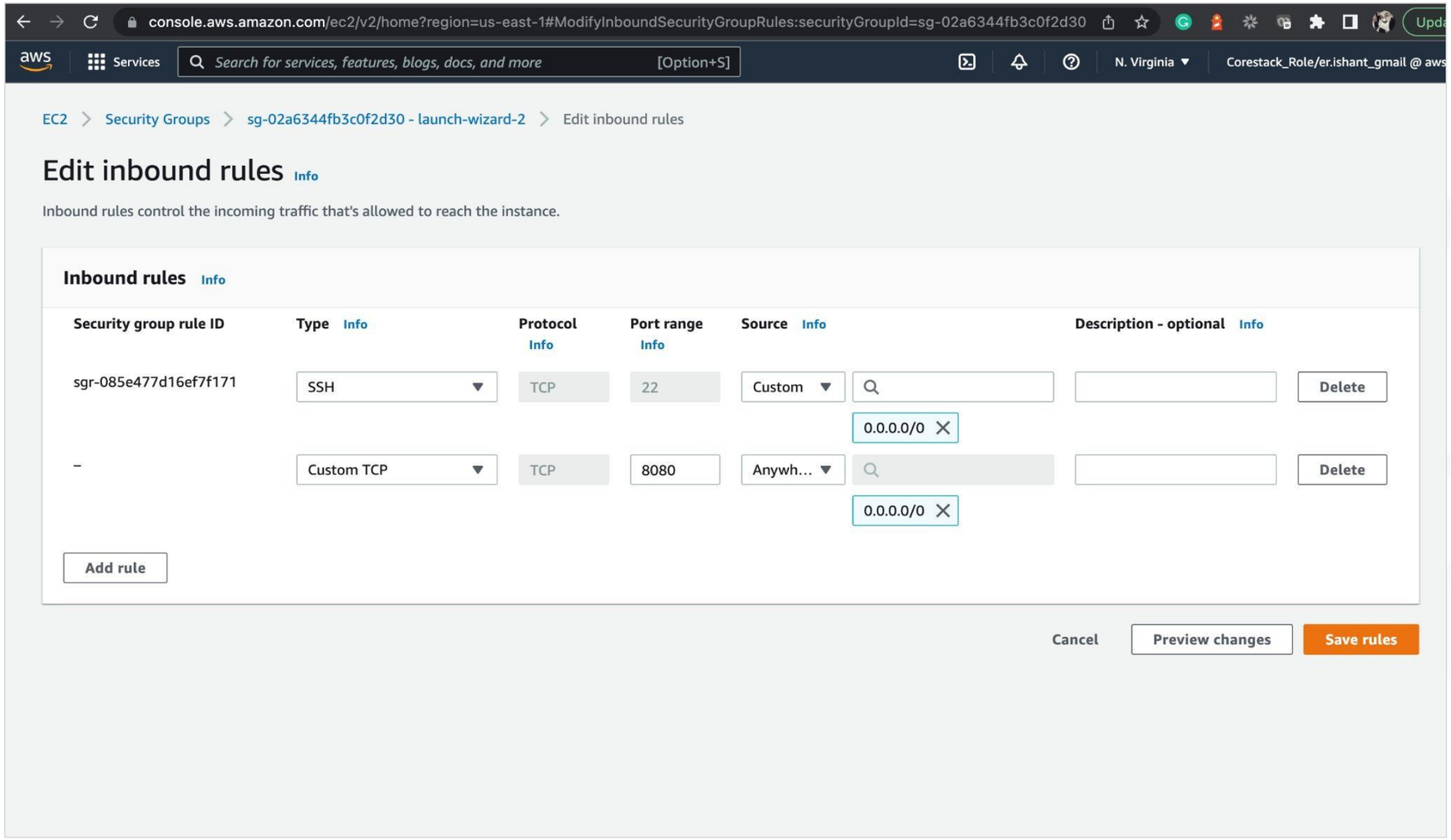
Provide the documents mentioned below:

- Source Code in zip
- Database scripts to replicate your database settings
- Screenshots of the outputs

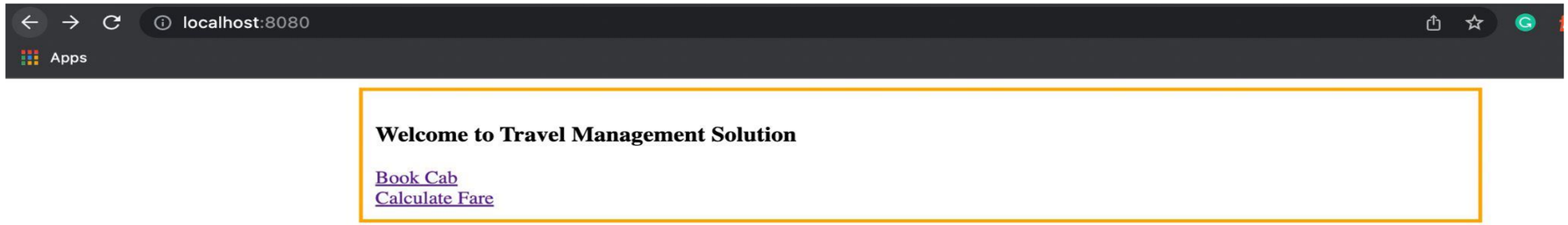
Reference Outputs

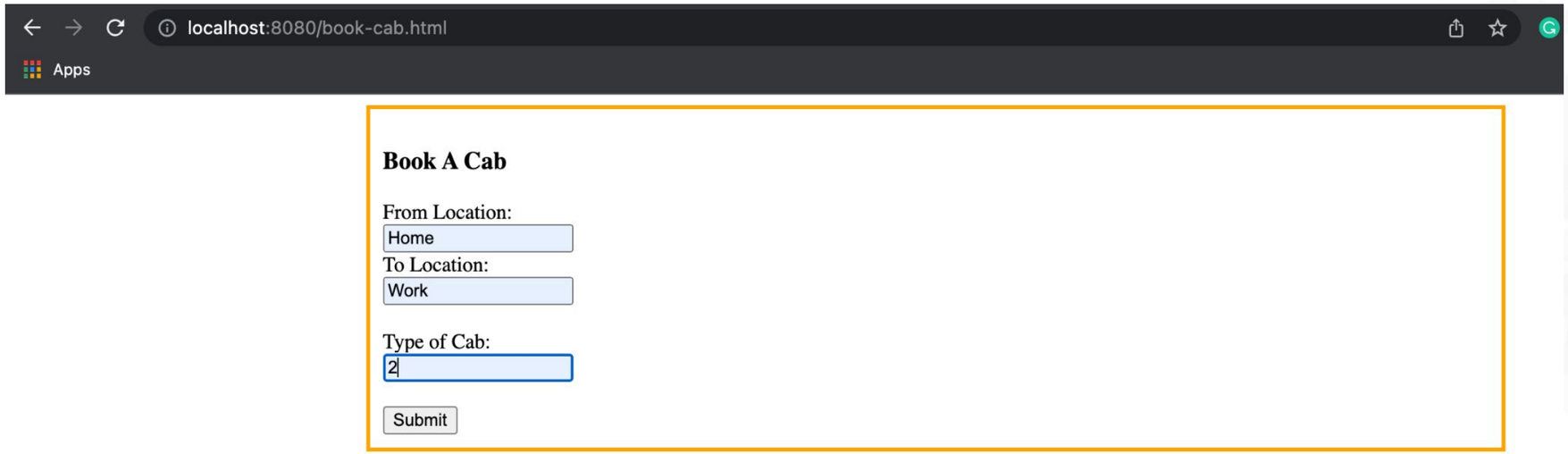


Reference Outputs



Reference Outputs





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Thank You

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