Phase 5: CI CD Deployment For Spring Boot Application

Developer Details:

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Date created: 01/12/2022 Program

Name: **CI CD Deployment Spring Boot**

GitHub Repository:

https://github.com/rajashekarparunandi

/Phase-5-Project-

Program Background :

As the project is in the final stage, management has asked you to automate the integration and deployment of the web application. You are required to set up an environment where the application will be hosted and accessed by users. The source code is supposed to be fetched from a GitHub repository.

Program Features:

- A search form in the home page to allow entry of the ID and Name of the Student
- Based on the details entered, it will show available list of students.
- Once a person selects an item to purchase, they will be redirected to the list of available items.
- In the next page, they are shown the complete list of details in the database in XML and JSON format.

- There will be an admin to manage the Database. And can be able to delete and create the entries using the H2 Database which is in-Memory Database.

The admin will be able to change his password if he wants, he should be able to:

- Manage the entries including categorizing them

Tools used for development :

1. Eclipse IDE
2. H2 Database
3. Apache Tom-Cat 10 server
4. Spring Boot
5. Amazon Web Services (AWS)
6. HTML
7. Apache Maven
8. Putty and EC2 Virtual Machine
9. GitHub

Sprint Table:

SPRINT	WORK DONE	TIME PERIOD	RESULT
1	Spring Boot Application coding	01/12/2022 to 03/12/2022	Done ✓
2	Designed HTML pages	04/12/2022 to 05/12/2022	Done ✓
3	Deploying on AWS - EC2	06/12/2022 to 07/12/22	Done ✓
4	Creating CI CD pipeline	08/12/22 to 10/12/22	Done ✓

Source codes

1.SpringBootDataJPARestApplication.java

```
package com.boot.demo;

import org.springframework.boot.SpringApplication;
import
org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.web.bind.annotation.RestController;

@SpringBootApplication
@RestController
public class SpringBootDataJpaRestApplication {

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

}
```

2.Home Controller.java

```java
package com.boot.demo;

import java.util.List;

import java.util.Optional;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.DeleteMapping;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.PutMapping;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestParam;
import org.springframework.web.bind.annotation.ResponseBody;
import org.springframework.web.servlet.ModelAndView;

@Controller
public class HomeController {

    @Autowired
    StudentRepo repo;

    @RequestMapping("/")
    public String home() {
        return "home";
    }

    @RequestMapping("/addStudent")
    public String addStudent(Student student) {
        repo.save(student);
        return "home";
    }
```

```java
    @RequestMapping("/getData")
    public ModelAndView getData(@RequestParam int id) {
        ModelAndView mv = new ModelAndView("showData");
        Student student = repo.findById(id).orElse(new
Student());
        mv.addObject(student);
        return mv;
    }

    @RequestMapping("/students")
    @ResponseBody
    public String students() {
        return repo.findAll().toString();
    }

    @RequestMapping("/students/{id}")
    @ResponseBody
    public String studentsByID(@PathVariable("id") int id) {
        return repo.findById(id).toString();
    }

    @RequestMapping("/studentsList")
    @ResponseBody
    public List<Student> studentsList() {
        return repo.findAll();
    }

    @RequestMapping("/studentsIDList/{id}")
    @ResponseBody
    public Optional<Student>
studentsByIDList(@PathVariable("id") int id) {
        return repo.findById(id);
    }
```

```
    @PostMapping("/students")
    public Student studentsInsert(@RequestBody Student student)
{
        repo.save(student);
        return student;
    }

    @DeleteMapping("/students/{id}")
    public Student studentsDelete(@PathVariable("id") int id) {
        @SuppressWarnings("deprecation")
        Student student=repo.getOne(id);
        repo.delete(student);
        return student;
    }

    @PutMapping(path="/students", consumes =
{"application/json"})
    public Student studentsUpdate(@RequestBody Student student)
{
        repo.save(student);
        return student;
    }
}
```

3. Student.java

```java
package com.boot.demo;

import javax.persistence.Entity;
import javax.persistence.Id;

@Entity
public class Student {

    @Id
    private int id;
    private String name;

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    @Override
    public String toString() {
        return "Student [id=" + id + ", name=" + name + "]";
    }
```

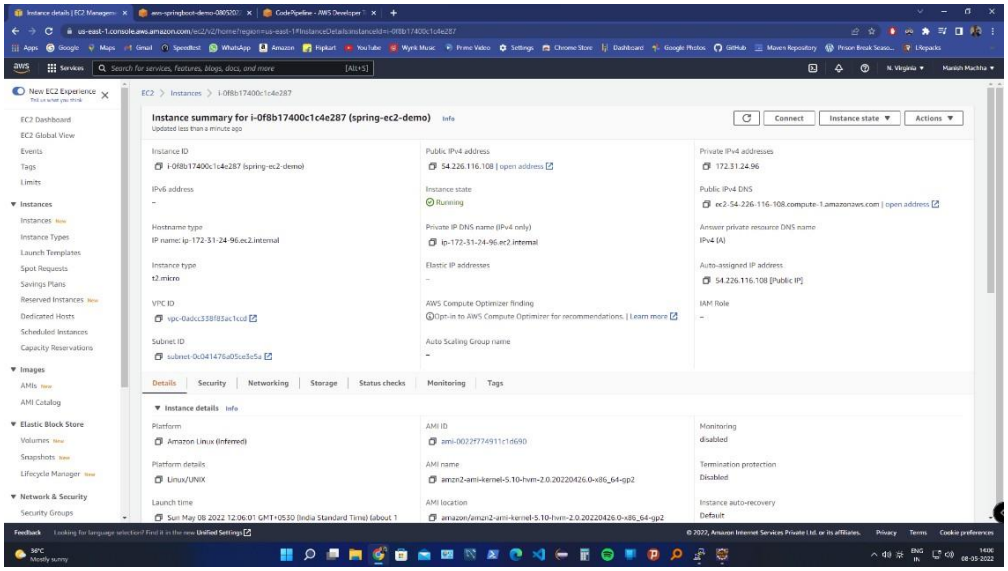
```
}
```

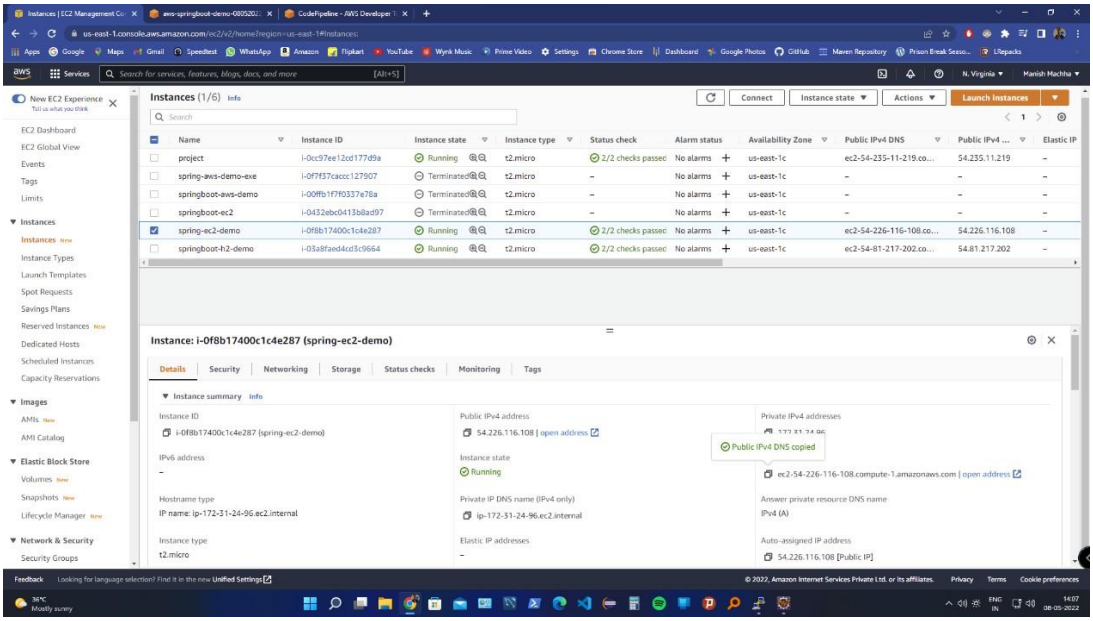
4. StudentRepo.java

```
package com.boot.demo;

import org.springframework.data.jpa.repository.JpaRepository;

public interface StudentRepo extends JpaRepository<Student,
Integer>{

}
```

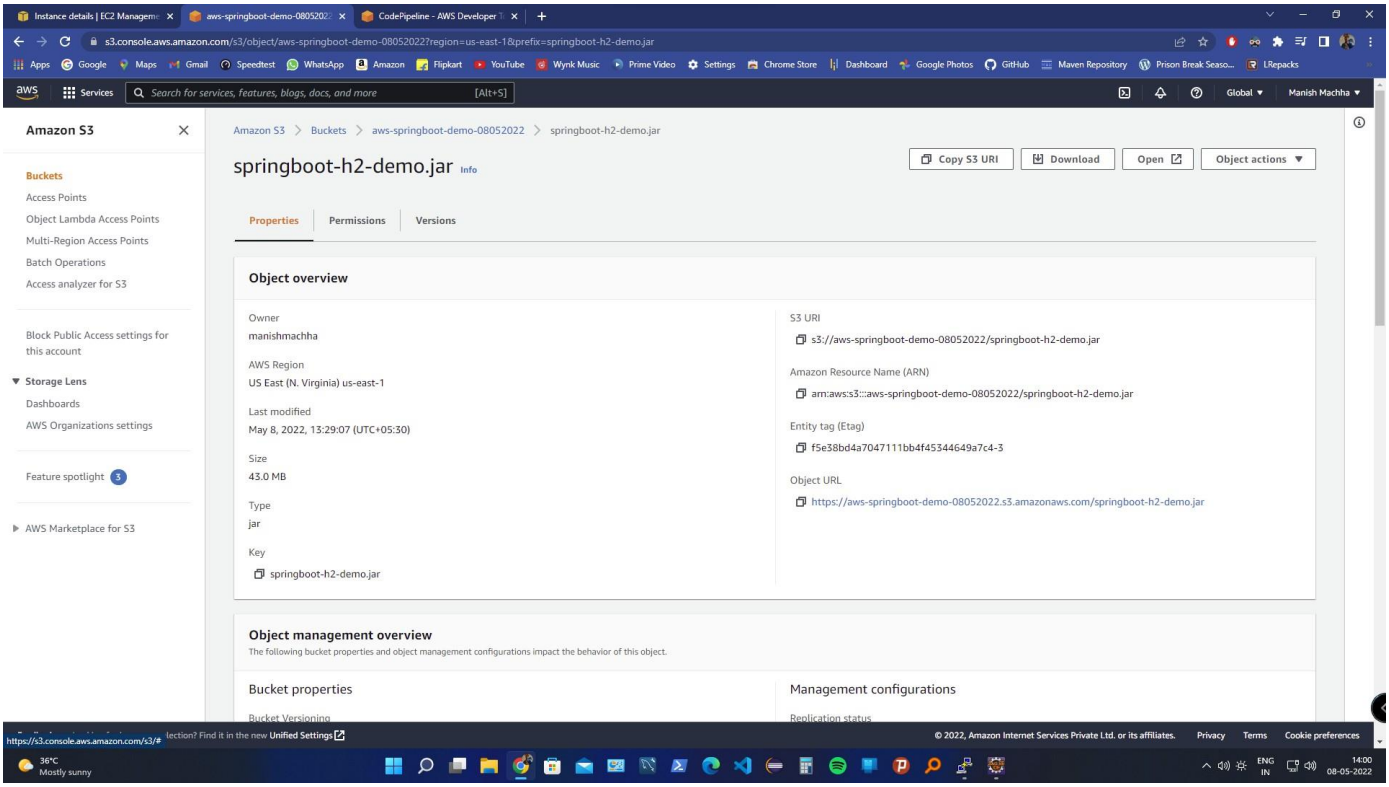
SCREENSHOTS

1. EC2 Instance





2. S3 Bucket


Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
Access analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets > aws-springboot-demo-08052022 > springboot-h2-demo.jar
springboot-h2-demo.jar Info
Copy S3 URI
Download
Open
Object actions
Properties
Permissions
Versions
Object overview
Owner
manishmachha
AWS Region
US East (N. Virginia) us-east-1
Last modified
May 8, 2022, 13:29:07 (UTC+05:30)
Size
43.0 MB
Type
jar
Key
springboot-h2-demo.jar
S3 URI
s3://aws-springboot-demo-08052022/springboot-h2-demo.jar
Amazon Resource Name (ARN)
arn:aws:s3:::aws-springboot-demo-08052022/springboot-h2-demo.jar
Entity tag (Etag)
f5e38bd4a7047111bb4f45344649a7c4-3
Object URL
https://aws-springboot-demo-08052022.s3.amazonaws.com/springboot-h2-demo.jar
Object management overview
The following bucket properties and object management configurations impact the behavior of this object.
Bucket properties
Management configurations
Replication status
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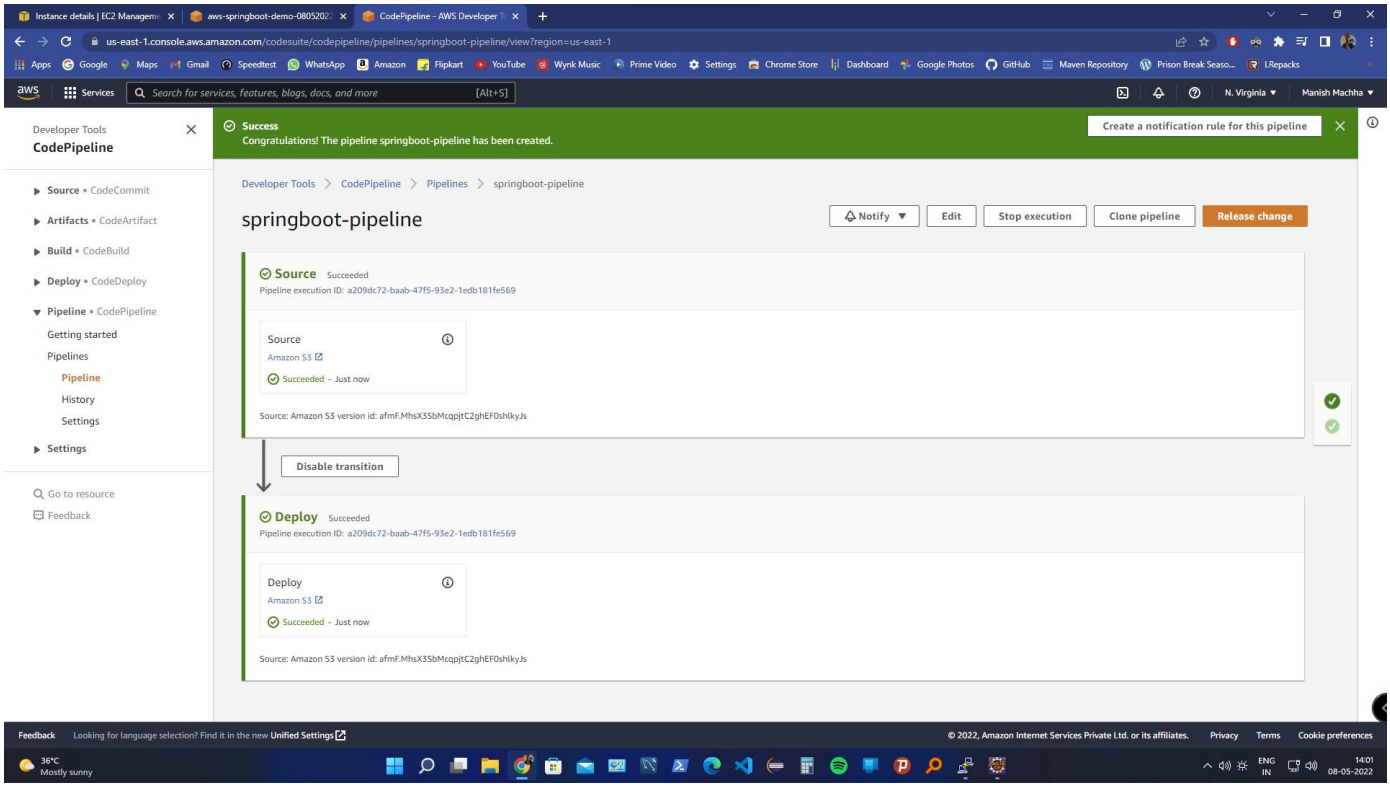
3. CI CD pipeline



4. Application Pages