```java
// Entity classes
@Entity
class UserCredentials {
    // UserCredentials entity fields
}
@Entity
class VaccinationCenters {
    // VaccinationCenters entity fields
}
@Entity
class Citizens {
    // Citizens entity fields
}


// Repository interfaces
@Repository
interface UserRepository extends JpaRepository<UserCredentials, Integer> {
    // UserRepository methods
}
```

```java
@Repository
interface VaccinationCentersRepository extends
JpaRepository<VaccinationCenters, Long> {

    List<String> findDistinctCenterNames();

    List<String> findDistinctCityNames();

    VaccinationCenters findByName(String name);

}
@Repository
interface CitizensRepository extends
JpaRepository<Citizens, Long> {

    List<Citizens> findByVaccinationCentersId(Long
vaccinationCentersId);

}


//Controllers
@Controller
class RegisterUserController {
    @Autowired
```

```java
    UserRepository userRepository;

    @GetMapping("/registerUser")
    public String registerForm() {
        // Register user form endpoint
    }
    @PostMapping("/registerUser")
    public String registerUser() {
        // Register user endpoint
    }
}
@Controller
class UserController {
    @Autowired
    UserRepository userRepository;
    @GetMapping("/")
    public String loginForm() {
        // Login form endpoint
    }
    @PostMapping("/login")
```

```java
    public String loginCheck() {
        // Login check endpoint
    }
}


@Controller
class VaccinationCentersController {
    @Autowired
    VaccinationCenterRepository
vaccinationCenterRepository;
    @GetMapping("/displayAllCenters")
    public String displayVaccinationCenters() {
        // Display all vaccination centers endpoint
    }
    @GetMapping("/AddVCform")
    public String addVaccinationCenterForm() {
        // Add vaccination center form endpoint
    }
    @PostMapping("/AddVC")
    public String addVaccinationCenter() {
```

```java
        // Add vaccination center endpoint
    }


    @GetMapping("/editcenter")
    public String editVaccinationCenterForm() {
        // Edit vaccination center form endpoint
    }
    @PostMapping("/editcenter")
    public String updateVaccinationCenter() {
        // Update vaccination center endpoint
    }
    @PostMapping("/deleteCenter")
    public String deleteVaccinationCenter() {
        // Delete vaccination center endpoint
    }
    @GetMapping("/viewVaccinationCenterInfo")
    public String viewVaccinationCenterInfo() {
        // View vaccination center information endpoint
    }
}
```

```java
@Controller
class CitizensController {
    @Autowired
    CitizenRepository citizenRepository;
    @Autowired
    VaccinationCenterRepository
vaccinationCenterRepository;

    @GetMapping("/displayCitizens")
    public String displayCitizens() {
        // Display all citizens endpoint
    }
    @GetMapping("/addCitizen")
    public String addCitizenForm() {
        // Add citizen form endpoint
    }
    @PostMapping("/addCitizen")
    public String addCitizenSubmit() {
        // Add citizen endpoint
    }
```

```java
@GetMapping("/editCitizenform")
public String editCitizenForm() {
    // Edit citizen form endpoint
}
@PostMapping("/updateCitizen")
public String updateCitizen() {
    // Update citizen endpoint
}
@GetMapping("/viewCitizenInfo")
public String viewCitizenInfo() {
    // View citizen information endpoint
}
@GetMapping("/deleteCitizen")
public String deleteCitizen() {
    // Delete citizen endpoint
}
}
@Controller
class LogoutController {
    @GetMapping("/logout")
```

```java
    public String logout() {
        // Logout endpoint
    }
}
```

SPRINT DETAILS OF VACCINATION CENTER

Sprint 1 (1 day):

1. **User Authentication**
- Implement login functionality with basic username and password validation.
- Handle authentication errors and display appropriate messages.
2. **Adding and Retrieving Citizens' Data**
- Design a form to collect citizen data (name, address, etc.).
- Implement the functionality to add citizen data to the MySQL database.
- Implement a feature to retrieve all citizens' data from the database.
3. **Updating and Deleting Citizen Data**
- Implement the functionality to update a citizen's data based on their ID.
- Implement the functionality to delete a citizen's data based on their ID.

Sprint 2 (1 day):

4. **Vaccination Centers**
- Design a form to add vaccination center information (name, address, etc.).
- Implement the functionality to add vaccination centers to the MySQL database.
- Implement a feature to retrieve all vaccination centers from the database.
5. **Mapping Citizens with Vaccination Centers**
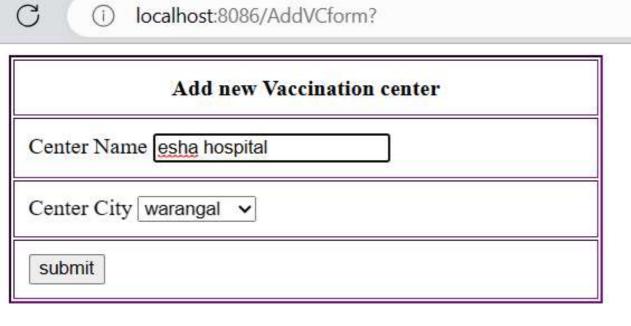- Implement the functionality to map citizens with specific vaccination centers.
- Design a form to input a citizen ID and a center ID for mapping.
6. **Updating and Deleting Vaccination Center Data**
- Implement the functionality to update a vaccination center's data based on its ID.
- Implement the functionality to delete a vaccination center's data based on its ID.

Login

Username:

sivanichowdaiah04@gmail.

Password:

•••••••••

Login

Registration

Admin Registration

Registration

Name: sivani

Email: sivanichowdaiah04@gmail.

Password: ••••••••••

Register

Add new Vaccination center

Center Name esha hospital

Center City warangal

submit

Add new Citizen

Citizen Name srikanthD

Center Name: care hospital ▾

Citizen City: Warangal ▾

Submit

| Citizens | Vaccination Centers | Log Out | Welcome, admin |

Centers

Add New Center

ID	NAME	CITY	Action
3	care hospital	Warangal	Edit View Delete
4	basha hospital	Hyderabad	Edit View Delete
5	angel hospital	Mulugu	Edit View Delete
6	jyotsna hospital	Pune	Edit View Delete

| Citizens | Vaccination Centers | Log Out | Welcome, admin |

Citizens

Add New Citizen						
ID	**Name**	**City**	**No. of Doses**	**Vaccination Status**	**Vaccination Center**	**Action**
3	srikanth	Warangal	2	Fully Vaccinated	care hospital	Edit View Delete
4	manisha	Warangal	0	Not Vaccinated	care hospital	Edit View Delete
5	nandisha	Warangal	2	Fully Vaccinated	care hospital	Edit View Delete
6	praveen	Warangal	1	Not Vaccinated	care hospital	Edit View Delete

Edit Citizen

Citizen Name: srikanth

Citizen City: Warangal

No. of Doses: 2

Vaccination Center: care hospital

Update Citizen

Citizen Information

srikanth	
ID:	3
City:	Warangal
Number of Vaccines:	2
Vaccination status:	Fully Vaccinated
Allocated Vaccination Center:	care hospital

Citizens	Vaccination Centers	Log Out	Welcome, admin

Citizens

Add New Citizen						
ID	**Name**	**City**	**No. of Doses**	**Vaccination Status**	**Vaccination Center**	**Action**
4	manisha	Warangal	0	Not Vaccinated	care hospital	Edit View Delete
5	nandisha	Warangal	2	Fully Vaccinated	care hospital	Edit View Delete
6	praveen	Warangal	1	Not Vaccinated	care hospital	Edit View Delete

Edit Citizen

Citizen Name: manisha

Citizen City: Warangal ⌄

No. of Doses: None ⌄

Vaccination Center: care hospital ⌄

Update Citizen

Citizen Information

manisha	
ID:	4
City:	Warangal
Number of Vaccines:	0
Vaccination status:	Not Vaccinated
Allocated Vaccination Center:	care hospital

localhost:8086/displayCitizens

| Citizens | Vaccination Centers | Log Out | Welcome, admin |

Citizens

Add New Citizen

ID	Name	City	No. of Doses	Vaccination Status	Vaccination Center	Action
5	nandisha	Warangal	2	Fully Vaccinated	care hospital	Edit View Delete
6	praveen	Warangal	1	Not Vaccinated	care hospital	Edit View Delete

Logged Out Successfully

Thank you for using our website.

Come back anytime!

If you have any questions, please contact our support.
Cell: 9063605717

pom.xml:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
      <modelVersion>4.0.0</modelVersion>
      <parent>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-parent</artifactId>
            <version>3.1.0</version>
            <relativePath /> <!-- lookup parent from repository -->
      </parent>
      <groupId>com.centers</groupId>
      <artifactId>vaccinationCenters</artifactId>
      <version>0.0.1-SNAPSHOT</version>
      <name>vaccinationCenters</name>
      <description>Demo project for Spring Boot</description>
      <properties>
            <java.version>20</java.version>
      </properties>
      <dependencies>
            <dependency>
                  <groupId>org.springframework.boot</groupId>
                  <artifactId>spring-boot-starter-data-jpa</artifactId>
            </dependency>
            <dependency>
                  <groupId>org.springframework.boot</groupId>
                  <artifactId>spring-boot-starter-web</artifactId>
            </dependency>

            <dependency>
                  <groupId>com.microsoft.sqlserver</groupId>
                  <artifactId>mssql-jdbc</artifactId>
                  <scope>runtime</scope>
            </dependency>
            <dependency>
                  <groupId>com.mysql</groupId>
                  <artifactId>mysql-connector-j</artifactId>
                  <scope>runtime</scope>
            </dependency>
            <!-- JSP support -->
            <dependency>
                  <groupId>
                        org.apache.tomcat.embed</groupId>
                  <artifactId>tomcat-embed-jasper</artifactId>
                  <scope>
                        provided</scope>
            </dependency>

            <dependency>
                  <groupId>org.springframework.boot</groupId>
                  <artifactId>spring-boot-starter-test</artifactId>
                  <scope>test</scope>
            </dependency>
      </dependencies>

      <build>
            <plugins>
                  <plugin>
                        <groupId>org.springframework.boot</groupId>
                        <artifactId>spring-boot-maven-plugin</artifactId>
```

```
                    </plugin>
                </plugins>
        </build>

</project>

application.properties:


server.port=8086


#locate jsp files
spring.mvc.view.prefix=/WEB-INF/views/
spring.mvc.view.suffix=.jsp

#Database
spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
spring.datasource.url=jdbc:mysql://localhost:3306/vaccinactiondb
spring.datasource.username=root
spring.datasource.password=Sivani123@
spring.jpa.show-sql=true
spring.jpa.hibernate.ddl-auto=update
spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQL8Dialect


usercredentials:

package com.vaccination.entities;

import jakarta.persistence.Entity;
import jakarta.persistence.GeneratedValue;
import jakarta.persistence.GenerationType;
import jakarta.persistence.Id;

@Entity
public class UserCredentials {

        @Id
        @GeneratedValue(strategy = GenerationType.IDENTITY)
        private long id;
        private String name;
        private String email;
        private String password;

        public long getId() {
                return id;
        }
        public String getName() {
                return name;
        }
        public void setName(String name) {
                this.name = name;
        }
        public String getEmail() {
                return email;
        }
        public void setEmail(String email) {
                this.email = email;
        }
        public String getPassword() {
                return password;
        }
        public void setPassword(String password) {
```

```java
            this.password = password;
        }


    }



vaccinationcenters:


package com.vaccination.entities;

import java.util.List;

import jakarta.persistence.CascadeType;
import jakarta.persistence.Entity;
import jakarta.persistence.GeneratedValue;
import jakarta.persistence.GenerationType;
import jakarta.persistence.Id;
import jakarta.persistence.OneToMany;

@Entity
public class VaccinationCenters {

        @Id
        @GeneratedValue(strategy = GenerationType.IDENTITY)
        private Long id;
        private String name;
        private String city;

        @OneToMany(mappedBy = "vaccinationCenters", cascade = CascadeType.ALL,
orphanRemoval = true)
        private List<Citizens> citizens;

        public List<Citizens> getCitizens() {
                return citizens;
        }

        public void setCitizens(List<Citizens> citizens) {
                this.citizens = citizens;
        }

        public Long getId() {
                return id;
        }

        public String getName() {
                return name;
        }

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

        public String getCity() {
                return city;
        }

        public void setCity(String city) {
                this.city = city;
        }

}
```

citizens:


```java
package com.vaccination.entities;

import jakarta.persistence.Column;
import jakarta.persistence.Entity;
import jakarta.persistence.GeneratedValue;
import jakarta.persistence.GenerationType;
import jakarta.persistence.Id;
import jakarta.persistence.JoinColumn;
import jakarta.persistence.ManyToOne;

@Entity
public class Citizens {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    private Long id;
    @Column(name = "c_name")
    private String cName;
    @Column(name = "no_of_doses")
    private int noOfDoses=0;
    @Column(name = "vaccination_status")
    private String vaccinationStatus;

    @ManyToOne
    @JoinColumn(name = "vaccination_centers_id")
    private VaccinationCenters vaccinationCenters;

    public Long getId() {
        return id;
    }

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


    public String getcName() {
        return cName;
    }

    public void setcName(String cName) {
        this.cName = cName;
    }

    public int getNoOfDoses() {
        return noOfDoses;
    }

    public void setNoOfDoses(int noOfDoses) {
        this.noOfDoses = noOfDoses;
    }

    public String getVaccinationStatus() {
        return vaccinationStatus;
    }

    public void setVaccinationStatus(String vaccinationStatus) {
        this.vaccinationStatus = vaccinationStatus;
    }
```

```java
    public VaccinationCenters getVaccinationCenters() {
        return vaccinationCenters;
    }

    public void setVaccinationCenters(VaccinationCenters vaccinationCenters) {
        this.vaccinationCenters = vaccinationCenters;
    }


}
```

userrespository:

```java
package com.vaccination.repositories;

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

import com.vaccination.entities.UserCredentials;


@Repository
public interface UserRepository extends JpaRepository<UserCredentials, Integer>{

}
```

VaccinationCentersRepo:

```java
package com.vaccination.repositories;

import java.util.List;

import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.data.jpa.repository.Query;
import org.springframework.stereotype.Repository;

import com.vaccination.entities.VaccinationCenters;

@Repository
public interface VaccinationCentersRepo extends
JpaRepository<VaccinationCenters, Long> {

    @Query("SELECT DISTINCT vc.name FROM VaccinationCenters vc")
    List<String> findDistinctCenterNames();

    @Query("SELECT DISTINCT vc.city FROM VaccinationCenters vc")
    List<String> findDistinctCityNames();

    VaccinationCenters findByName(String name);

}
```

CitizensRepository:

```java
package com.vaccination.repositories;

import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.stereotype.Repository;
```

```java
import com.vaccination.entities.Citizens;
import java.util.List;


@Repository
public interface CitizensRepository extends JpaRepository<Citizens, Long>{
    List<Citizens> findByVaccinationCentersId(Long vaccinationCentersId);
}
```

RegisterUser:

```java
package com.vaccination.controllers;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestParam;

import com.vaccination.entities.UserCredentials;
import com.vaccination.repositories.UserRepository;

@Controller
public class RegisterUser {

    @Autowired
    UserRepository userRepository;

    @GetMapping("/registerUser")
    public String registerForm() {
        return "registration";
    }
    @PostMapping("/registerUser")
    public String registerUser(@RequestParam("name") String
name,@RequestParam("email") String email,
                @RequestParam("password") String password) {

        UserCredentials user = new UserCredentials();
        user.setName(name);
        user.setEmail(email);
        user.setPassword(password);

        userRepository.save(user);
        return "index";

    }

}
```

UserController:

```java
package com.vaccination.controllers;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestParam;
import org.springframework.web.bind.annotation.ResponseBody;
```

```java
import com.vaccination.entities.UserCredentials;
import com.vaccination.repositories.UserRepository;

@Controller
public class UserController {

    @Autowired
    UserRepository userRepository;

    @GetMapping("/")
    public String loginform() {
        return "index";
    }

    @PostMapping("/login")
    public String loginCheck(@RequestParam("email") String email,
@RequestParam("password") String password) {
        boolean userFound = false;
        if(email.isBlank()||email.isEmpty()||password.isBlank()||
password.isEmpty()) {
            return "index";
        }else {
            List<UserCredentials> users = userRepository.findAll();
            for(UserCredentials user: users) {
                if(email.contentEquals(user.getEmail()) &&
password.contentEquals(user.getPassword())) {
                    userFound = true;
                    return "redirect:/displayAllCenters";
                }
            }
        }if(!userFound)return "registration";
        return "in testing";
    }
}
```

VaccinationCentersController:

```java
package com.vaccination.controllers;

import java.util.List;
import java.util.Optional;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.ModelAttribute;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestParam;

import com.vaccination.entities.Citizens;
import com.vaccination.entities.VaccinationCenters;
import com.vaccination.repositories.CitizensRepository;
import com.vaccination.repositories.VaccinationCentersRepo;

@Controller
public class VaccinationCentersController {

    @Autowired
    VaccinationCentersRepo vcRepository;
```

```java
@Autowired
CitizensRepository citizensReposotory;

@GetMapping("displayAllCenters")
public String displayVC(Model model) {

        List<VaccinationCenters> vcs = vcRepository.findAll();
        model.addAttribute("vcs", vcs);
        return "vaccinationcenter";
}

@GetMapping("AddVCform")
public String addVCform() {
        return "addVaccinationCenterForm";
}

@PostMapping("AddVC")
public String addVC(@RequestParam("centerCity") String centerCity,
@RequestParam("centerName") String centerName) {
        VaccinationCenters vc = new VaccinationCenters();
        vc.setName(centerName);
        vc.setCity(centerCity);
        vcRepository.save(vc);
        return "redirect:/displayAllCenters";
}

@GetMapping("editcenter")
public String editVCform(@RequestParam("id") Long id, Model model) {

        Optional<VaccinationCenters> vaccinationCenter =
vcRepository.findById(id);
        VaccinationCenters vaccinationcenter = vaccinationCenter.get();
        model.addAttribute("vc", vaccinationcenter);
        return "editvaccinationcenter"; // go to edit-product.jsp
}

@PostMapping("/editcenter")
public String updateVaccinationCenter(@ModelAttribute("vc")
VaccinationCenters updatedCenter, @RequestParam("id") Long id) {
        Optional<VaccinationCenters> optionalCenter =
vcRepository.findById(id);
        if (optionalCenter.isPresent()) {
            VaccinationCenters existingCenter = optionalCenter.get();
            existingCenter.setName(updatedCenter.getName());
            existingCenter.setCity(updatedCenter.getCity());
            vcRepository.save(existingCenter);
        }
        return "redirect:/displayAllCenters";
}

@PostMapping("/deleteCenter")
public String deleteVaccinationCenter(@RequestParam("id") Long id) {
        vcRepository.deleteById(id);
        return "redirect:/displayAllCenters";
}
@GetMapping("/viewVaccinationCenterInfo")
public String viewVCInfo(@RequestParam("id") Long id, Model model) {
        Optional<VaccinationCenters> vaccinationCenter =
vcRepository.findById(id);
        VaccinationCenters vaccinationcenter = vaccinationCenter.get();
        List<Citizens> citizensList =
citizensReposotory.findByVaccinationCentersId(id);
        model.addAttribute("vaccinationcenter", vaccinationcenter);
        model.addAttribute("citizensList", citizensList);
```

```java
            return "viewVaccinationCenter";

    }
}


CitizensController:

package com.vaccination.controllers;

import java.util.List;
import java.util.Optional;
import java.util.stream.Collectors;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.ModelAttribute;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestParam;

import com.vaccination.entities.Citizens;
import com.vaccination.entities.VaccinationCenters;
import com.vaccination.repositories.CitizensRepository;
import com.vaccination.repositories.VaccinationCentersRepo;

@Controller
public class CitizensController {

    @Autowired
    CitizensRepository citizensRepository;
    @Autowired
    VaccinationCentersRepo vcRepo;

    @GetMapping("/displayCitizens")
    public String displayCitizens(Model model) {

        List<Citizens> citizensList = citizensRepository.findAll();
        model.addAttribute("citizens", citizensList);
        return "citizens";
    }

    @GetMapping("/addCitizen")
    public String addCitizenForm(Model model) {
        List<String> centerNames = vcRepo.findDistinctCenterNames();
        List<String> cityNames = vcRepo.findDistinctCityNames();
        model.addAttribute("centerNames", centerNames);
        model.addAttribute("cityNames", cityNames);
        model.addAttribute("citizen", new Citizens());
        return "addCitizenForm";
    }

    @PostMapping("/addCitizen")
    public String addCitizenSubmit(@ModelAttribute("citizen") Citizens
citizen,
                @RequestParam("vaccinationCenters.name") String centerName) {
        // Retrieve the VaccinationCenters object based on the centerName
        VaccinationCenters vaccinationCenter =
vcRepo.findByName(centerName);

        // Set the VaccinationCenters object for the citizen
        citizen.setVaccinationCenters(vaccinationCenter);
```

```java
            // setting vaccination status
            if (citizen.getNoOfDoses() == 2) {
                citizen.setVaccinationStatus("Fully Vaccinated");
            } else {
                citizen.setVaccinationStatus("Not Vaccinated");
            }
            // Handle the form submission and save the citizen
            citizensRepository.save(citizen);

            return "redirect:/displayCitizens";
    }

    @GetMapping("/editCitizenform")
    public String editCitizen(@RequestParam("id") Long id, Model model) {
            Optional<Citizens> citizenRepo = citizensRepository.findById(id);
            Citizens citizen = citizenRepo.get();
            model.addAttribute("citizen", citizen);

            List<String> cityNames = vcRepo.findDistinctCityNames();
            model.addAttribute("citynames", cityNames);
            List<String> centerNames = vcRepo.findDistinctCenterNames();
            model.addAttribute("centerNames", centerNames);

            return "editCitizen";
    }

    @PostMapping("/updateCitizen")
    public String updateCitizen(@ModelAttribute("citizen") Citizens
updatedCitizen, @RequestParam("id") Long citizenId,
                @RequestParam("vaccinationCentersId") Long
vaccinationCentersId) {
            // Retrieve the existing citizen using the citizenId
            Optional<Citizens> existingCitizenOptional =
citizensRepository.findById(citizenId);
            Citizens existingCitizen = existingCitizenOptional.orElseThrow();

            // Retrieve the VaccinationCenters entity using the
vaccinationCentersId
            Optional<VaccinationCenters> vaccinationCenterOptional =
vcRepo.findById(vaccinationCentersId);
            VaccinationCenters vaccinationCenter =
vaccinationCenterOptional.orElseThrow();

            // Update the existing citizen with the new values
            existingCitizen.setcName(updatedCitizen.getcName());
            existingCitizen.setNoOfDoses(updatedCitizen.getNoOfDoses());


existingCitizen.getVaccinationCenters().setName(updatedCitizen.getVaccinationCen
ters().getName());


existingCitizen.getVaccinationCenters().setCity(updatedCitizen.getVaccinationCen
ters().getCity());
            // setting vaccination status
            if (existingCitizen.getNoOfDoses() == 2) {
                existingCitizen.setVaccinationStatus("Fully Vaccinated");
            } else {
                existingCitizen.setVaccinationStatus("Not Vaccinated");
            }
            // Set the updated VaccinationCenters entity
            existingCitizen.setVaccinationCenters(vaccinationCenter);

            // Save the updated citizen
```

```java
            citizensRepository.save(existingCitizen);

            return "redirect:/displayCitizens";
        }

    @GetMapping("/viewCitizenInfo")
    public String viewCitizenInfo(@RequestParam("id") Long id, Model model) {
            Optional<Citizens> citizenOpt = citizensRepository.findById(id);
            Citizens citizen = citizenOpt.get();
            model.addAttribute("citizen", citizen);
            return "viewCitizen";

        }

    @GetMapping("/deleteCitizen")
    public String deleteCitizen(@RequestParam("id") Long id) {
            citizensRepository.deleteById(id);
            return "redirect:/displayCitizens";
        }

}
```

LogoutController:

```java
package com.vaccination.controllers;

import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.GetMapping;

@Controller
public class LogoutController {

    @GetMapping("/logout")
    public String logout() {
            return "logout";
        }

}
```

VaccinationCentersApplication:

```java
package com.vaccination;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class VaccinationCentersApplication {

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

}
```

index.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
```

```html
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>

<style>
body {
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
}

.loginContainer {
      text-align: left;
      border: 2px solid #800080;
      padding: 10px;
}

.loginContainer form {
      display: flex;
      flex-direction: column;
      align-items: flex-start;
}

.loginContainer input {
      margin: 8px;
}
</style>
</head>
<body>
      <div class="loginContainer">
            <form action="login" method="post">
                  <h2>Login</h2>
                  Username: <input type="email" id="email" name="email">
                  Password: <input type="password" id="password"
name="password">
                  <input type="submit" value="Login">
            </form>
            <form action="registerUser">
                  <input type="submit" value="Registration">
            </form>
      </div>
</body>
</html>
```

registraction.jsp:

```jsp
<%@ page language="java" contentType="text/html; charset=UTF-8"
      pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>

<style>
table tr td {
      padding: 10px;
      text-align: center;
```

```
		}
		#table1Width{
			width:40%;
		}
		.customBorder{
			border: 2px inset #800080;
		}
		.buttons{
			display:flex;
			justify-content:space-between;
		}
		.buttons input{
			margin:5px;
		}
		</style>

		</head>
		<body>
			<table border="1" class="customBorder" id="table1Width">
				<tr>
					<td><a href="displayCitizens">Citizens</a></td>
					<td><a href="displayAllCenters">Vaccination Centers</a></td>
					<td><a href="logout">Log Out</a></td>
					<td>Welcome, admin</td>
				</tr>
			</table>
			<h3>Citizens</h3>
			<table border="1" class="customBorder">
				<tr>
					<td>
						<form action="addCitizen" method="get">
							<input type="submit" value="Add New Citizen">
						</form>
					</td>
				</tr>
				<tr>
					<th>ID</th>
					<th>Name</th>
					<th>City</th>
					<th>No. of Doses</th>
					<th>Vaccination Status</th>
					<th>Vaccination Center</th>
					<th>Action</th>
				</tr>
				<c:forEach var="citizen" items="${citizens}">
					<tr>
						<td>${citizen.id}</td>
						<td>${citizen.cName}</td>
						<td>${citizen.vaccinationCenters.city}</td>
						<td>${citizen.noOfDoses}</td>
						<td>${citizen.vaccinationStatus}</td>
						<td>${citizen.vaccinationCenters.name}</td>
						<td class="buttons">
							<form action="editCitizenform" method="get">
								<input type="hidden" name="id" value="$
{citizen.id}"> <input
									type="submit" value="Edit">
							</form>
							<form action="viewCitizenInfo" method="get">
								<input type="hidden" name="id" value="$
{citizen.id}"> <input
									type="submit" value="View">
							</form>
							<form action="deleteCitizen" method="get">
```

```
                                        <input type="hidden" name="id" value="$
{citizen.id}"> <input
                                        type="submit" value="Delete">
                            </form>
                    </td>
            </tr>
        </c:forEach>
    </table>
</body>
</html>
```

vaccinactioncenter.jsp:

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>

<style>
table tr td {
    padding: 10px;
    text-align: center;
}
.buttons{
    display:flex;
    align-content: space-around;
}
.buttons input{
    margin:5px;
}
.customBorder{
    border: 2px outset #800080;
}
#table1width{
width:39.4%;
}
</style>

</head>
<body>
    <table border="1" class="customBorder" id="table1width">
        <tr>
            <td><a href="displayCitizens">Citizens</a></td>
            <td><a href="displayAllCenters">Vaccination Centers</a></td>
            <td><a href="logout">Log Out</a></td>
            <td>Welcome, admin</td>
        </tr>
    </table>
    <h2>Centers</h2>
    <table border="1" class="customBorder">
        <tr>
            <td>
                <form action="AddVCform" method="get">
                    <input type="submit" value="Add New Center">
                </form>
            </td>
        </tr>
```

```html
            <tr>
                <th>ID</th>
                <th>NAME</th>
                <th>CITY</th>
                <th>Action</th>
            </tr>
            <c:forEach var="vc" items="${vcs}">
                <tr>
                        <td>${vc.id}</td>
                        <td>${vc.name}</td>
                        <td>${vc.city}</td>
                        <td class="buttons">
                            <form action="editcenter" method="get">
                                <input type="hidden" name="id" value="$
{vc.id}"> <input

                                    type="submit" value="Edit">
                            </form>
                            <form action="viewVaccinationCenterInfo">
                                <input type="hidden" name="id" value="$
{vc.id}">

                                <input type="submit" value="View">
                            </form>
                            <form action="deleteCenter" method="post">
                                <input type="hidden" name="id" value="$
{vc.id}"> <input

                                    type="submit" value="Delete">
                            </form>

                        </td>
                </tr>
            </c:forEach>
        </table>
</body>
</html>



addvaccinactioncenterform.jsp:


<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<style>
table{
    width:30%;
}
table th, td{
    padding: 10px;
}
.customBorder{
    border: 2px inset #800080;
}
</style>
</head>
<body>
    <form action="AddVC" method="post">
    <table border="1" class="customBorder">
        <tr>
            <th>Add new Vaccination center</th>
```

```
                </tr>
                <tr>
                        <td>Center Name <input type="text" name="centerName"></td>
                </tr>
                <tr>
                        <td>Center City <select name="centerCity">
                        <option value="Warangal">warangal</option>
                        <option value="Hyderabad">Hyderabad</option>
                        <option value="Mulugu">Mulugu</option>
                        <option value="Mumbai">Mumbai</option>
                        <option value="Pune">Pune</option>
                        <option value="Bengaluru">Bengaluru</option>
                        </select>
                        </td>
                </tr>
                <tr><td><input type="submit" value="submit"></td></tr>
        </table>
        </form>
</body>
</html>


editvaccinactioncenter:


<%@ page language="java" contentType="text/html; charset=UTF-8"
        pageEncoding="UTF-8"%>
<%@ taglib prefix="form" uri="http://www.springframework.org/tags/form"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Edit Vaccination Center</title>
<style>
table{
        width:40%;
}
th, td {
        padding: 20px;
}
td h3{
        margin:0px;
        padding:0px;
}
.customBorder{
        border: 2px outset #800080;
}
</style>
</head>
<body>

        <form:form action="editcenter" method="post" modelAttribute="vc">
                <table border="1" class="customBorder">
                        <tr>
                                <td><h3>Center Information</h3></td>
                        </tr>
                        <tr>
                                <th>Edit ${vc.name}</th>
                        </tr>
                        <tr>
                                <td><form:label path="name">Center Name:  </form:label>
<form:input
                                        path="name" /></td>
```

```
                               </tr>
                               <tr>
                                      <td><form:label path="city">Center City:</form:label>
<select
                                             name="city">
                                             <option value="Warangal" label="Warangal"
                                                    ${vc.city == 'Warangal' ? 'selected' :
''}></option>
                                             <option value="Hyderabad" label="Hyderabad"
                                                    ${vc.city == 'Hyderabad' ?
'selected' : ''}></option>
                                             <option value="Mulugu" label="Mulugu"
                                                    ${vc.city == 'Mulugu' ? 'selected' :
''}></option>
                                             <option value="Mumbai" label="Mumbai"
                                                    ${vc.city == 'Mumbai' ? 'selected' :
''}></option>
                                             <option value="Pune" label="pune"
                                                    ${vc.city == 'Pune' ? 'selected' :
''}></option>
                                             <option value="Bengaluru" label="Bengaluru"
                                                    ${vc.city == 'Bengaluru' ?
'selected' : ''}></option>
                                      </select></td>
                               </tr>
                               <tr>
                                      <td><input type="submit" value="Update"></td>
                               </tr>
                        </table>
                        <input type="hidden" name="id" value="${vc.id}" />
               </form:form>
</body>
</html>




viewvaccinactioncenter.jsp:


<%@ page language="java" contentType="text/html; charset=UTF-8"
      pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>View VaccinationCenterInfo</title>
<style>
table tr td {
      padding: 10px;
      text-align: center;
}
.customBorder{
      border: 2px outset #800080;
}
.container{
      border: 1px ridge #800080;
      padding:10px;
      width:34%;
}
#table2Width{
      width:40%;
}
</style>
```

```html
</head>
<body>
      <div class="container">
      <table border="1" class="customBorder">
            <tr>
                  <td><a href="displayCitizens">Citizens</a></td>
                  <td><a href="displayAllCenters">Vaccination Centers</a></td>
                  <td><a href="logout">Log Out</a></td>
                  <td>Welcome, admin</td>
            </tr>
      </table>
      <h3>Center Information</h3>
      <table border="1" class="customBorder" id="table2Width">
            <tr>
                  <th colspan="2">Name</th>
            </tr>
            <tr>
                  <td colspan="2">${vaccinationcenter.name}</td>
            </tr>
            <tr>
                  <td>ID:</td>
                  <td>${vaccinationcenter.id}</td>
            </tr>
            <tr>
                  <td>City:</td>
                  <td>${vaccinationcenter.city}</td>
            </tr>
      </table>
      <hr />
      <h3>All Citizes Of this Center</h3>
      <table border="1" class="customBorder">
            <tr>
                  <th>ID</th>
                  <th>Name</th>
                  <th>Action</th>
            </tr>
            <c:forEach var="cl" items="${citizensList}">
                  <tr>
                        <td>${cl.id}</td>
                        <td>${cl.cName}</td>
                        <td><a href="viewCitizenInfo?id=${cl.id}">View</a></td>
                  </tr>
            </c:forEach>
      </table>
      </div>
</body>
</html>




citizens.jsp:

<%@ page language="java" contentType="text/html; charset=UTF-8"
      pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>

<style>
table tr td {
```

```
      padding: 10px;
      text-align: center;
}
#table1Width{
      width:40%;
}
.customBorder{
      border: 2px inset #800080;
}
.buttons{
      display:flex;
      justify-content:space-between;
}
.buttons input{
      margin:5px;
}
</style>

</head>
<body>
      <table border="1" class="customBorder" id="table1Width">
            <tr>
                  <td><a href="displayCitizens">Citizens</a></td>
                  <td><a href="displayAllCenters">Vaccination Centers</a></td>
                  <td><a href="logout">Log Out</a></td>
                  <td>Welcome, admin</td>
            </tr>
      </table>
      <h3>Citizens</h3>
      <table border="1" class="customBorder">
            <tr>
                  <td>
                        <form action="addCitizen" method="get">
                              <input type="submit" value="Add New Citizen">
                        </form>
                  </td>
            </tr>
            <tr>
                  <th>ID</th>
                  <th>Name</th>
                  <th>City</th>
                  <th>No. of Doses</th>
                  <th>Vaccination Status</th>
                  <th>Vaccination Center</th>
                  <th>Action</th>
            </tr>
            <c:forEach var="citizen" items="${citizens}">
                  <tr>
                        <td>${citizen.id}</td>
                        <td>${citizen.cName}</td>
                        <td>${citizen.vaccinationCenters.city}</td>
                        <td>${citizen.noOfDoses}</td>
                        <td>${citizen.vaccinationStatus}</td>
                        <td>${citizen.vaccinationCenters.name}</td>
                        <td class="buttons">
                              <form action="editCitizenform" method="get">
                                    <input type="hidden" name="id" value="$
{citizen.id}"> <input

                                          type="submit" value="Edit">
                              </form>
                              <form action="viewCitizenInfo" method="get">
                                    <input type="hidden" name="id" value="$
{citizen.id}"> <input

                                          type="submit" value="View">
```

```
					</form>
					<form action="deleteCitizen" method="get">
						<input type="hidden" name="id" value="$
{citizen.id}"> <input
							type="submit" value="Delete">
					</form>
				</td>
			</tr>
		</c:forEach>
	</table>
</body>
</html>




addcitizenformfrom.jsp:


<%@ page language="java" contentType="text/html; charset=UTF-8"
	pageEncoding="UTF-8"%>
<%@ taglib prefix="form" uri="http://www.springframework.org/tags/form"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<style type="text/css">
table th, td {
	padding: 8px;
}

table {
	width: 30%;
}

.customBorder {
	border: 2px inset #800080;
}
</style>
</head>
<body>
	<form:form action="/addCitizen" method="post" modelAttribute="citizen">
		<table border="1" class="customBorder">
			<tr>
				<th>Add new Citizen</th>
			</tr>
			<tr>
				<td>Citizen Name <form:input path="cName" /></td>
			</tr>
			<tr>
				<td><form:label path="vaccinationCenters.name">Center
Name:</form:label>
					<form:select path="vaccinationCenters.name">
						<form:options items="${centerNames}" />
					</form:select></td>
			</tr>
			<tr>
				<td><form:label path="vaccinationCenters.city">Citizen
City:</form:label>
					<form:select path="vaccinationCenters.city">
						<form:options items="${cityNames}" />
					</form:select></td>
			</tr>
			<tr>
				<td><input type="submit" value="Submit"></td>
```

```
                      </tr>
               </table>
       </form:form>
</body>
</html>


editcitizen.jsp:


<%@ page language="java" contentType="text/html; charset=UTF-8"
       pageEncoding="UTF-8"%>
<%@ taglib prefix="form" uri="http://www.springframework.org/tags/form"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<style type="text/css">
table th, td {
       padding: 10px;
}
table{
       width:30%;
}
.customBorder{
       border: 2px inset #800080;
}
</style>
</head>
<body>

       <form:form modelAttribute="citizen" method="POST"
              action="updateCitizen?id=${citizen.id}">
              <input type="hidden" name="vaccinationCentersId" value="$
{citizen.vaccinationCenters.id}">
              <table border="1" class="customBorder">
                     <tr>
                            <th><h2>Edit Citizen</h2></th>
                     </tr>
                     <tr>
                            <td>Citizen Name: <form:input path="cName" /></td>
                     </tr>
                     <tr>
                            <td>Citizen City: <form:select
path="vaccinationCenters.city">
                                          <form:options items="${citynames}" />
                                   </form:select></td>
                     </tr>
                     <tr>
                            <td>No. of Doses: <form:select path="noOfDoses">
                                          <form:option value="0">None</form:option>
                                          <form:option value="1">1</form:option>
                                          <form:option value="2">2</form:option>
                                   </form:select></td>
                     </tr>
                     <tr>
                            <td>Vaccination Center: <form:select
                                          path="vaccinationCenters.name">
                                          <form:options items="${centerNames}" />
                                   </form:select></td>
                     </tr>
                     <tr>
                            <td colspan="1"><input type="submit" value="Update
```

```
Citizen" /></td>
                </tr>
            </table>
        </form:form>
</body>
</html>


viewcitizen.jsp:


<%@ page language="java" contentType="text/html; charset=UTF-8"
        pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
<style>
table{
        width:30%;
}
table th, td{
        padding:10px;
        text-align:center;
}
.customBorder{
        border: 2px inset #800080;
}
</style>
</head>
<body>
        <h2>Citizen Information</h2>
        <table border="1" class="customBorder">
            <tr>
                <th colspan="2">${citizen.cName}</th>
            </tr>
            <tr>
                <td>ID: </td><td>${citizen.id}</td>
            </tr>
            <tr>
                <td>City: </td><td>${citizen.vaccinationCenters.city}</td>
            </tr>
            <tr>
                <td>Number of Vaccines: </td><td>${citizen.noOfDoses}</td>
            </tr>
            <tr>
                <td>Vaccination status: </td><td>$
{citizen.vaccinationStatus}</td>
            </tr>
            <tr>
                <td>Allocated Vaccination Center: </td><td><a
href="viewVaccinationCenterInfo?id=${citizen.vaccinationCenters.id}">$
{citizen.vaccinationCenters.name}</a></td>
            </tr>
        </table>
</body>
</html>


logout.jsp:

<!DOCTYPE html>
<html>
```

```html
<head>
<title>Logged Out Successfully</title>
<style>
body {
        font-family: Arial, sans-serif;
        background-color: #f5f5f5;
        display: flex;
        justify-content: center;
        align-items: center;
        height: 100vh;
}

.container {
        max-width: 400px;
        padding: 20px;
        background-color: #fff;
        border: 2px inset #800080;
        border-radius: 4px;
        box-shadow: 0 2px 5px rgba(0, 0, 0, 0.1);
        text-align: center;
        transition: box-shadow 0.3s ease;
}

.container:hover {
        box-shadow: 0 8px 20px rgba(0, 0, 0, 0.3);
}

h1 {
        color: #333;
        margin-bottom: 20px;
}

p {
        color: #666;
        margin-bottom: 10px;
}
</style>
</head>
<body>
        <div class="container">
                <h1>Logged Out Successfully</h1>
                <p>Thank you for using our website.</p>
                <p>Come back anytime!</p>
                <p>If you have any questions, please contact our support. Cell:
                        9059638065</p>
        </div>
</body>
</html>
```