

Vaccination Center

Course-end Project 1

DESCRIPTION

Build an application to manage vaccination centers working on distributing vaccines to all citizens of India

1. Set up the Spring Boot Project:

- Create a new Spring Boot project with Maven or Gradle.
- Include the necessary dependencies for Spring Data JPA, Spring Web, and MySQL Connector.

2. Create the Database Schema:

- Design and create the database schema for citizens and vaccination centers using MySQL.

3. Implement the Entity Layer:

- Create ``Citizen`` and ``VaccinationCenter`` entity classes with appropriate annotations to map them to the database tables.

4. Implement the Repository Layer:

- Create ``CitizenRepository`` and ``VaccinationCenterRepository`` interfaces that extend ``JpaRepository``.
- Define additional custom queries if needed.

5. Implement the Controller Layer:

- Create a REST controller to handle API endpoints for different operations.
- Use ``@RestController``, ``@RequestMapping``, and ``@PathVariable`` annotations to map the endpoints.
- Inject the services using ``@Autowired``.

6. Implement Validation:

- Add validation for request payloads using Spring's validation annotations or custom validation logic.

7. Handle Business Logic

- Implement business logic to handle one-to-one mapping between citizens and vaccination centers.

8. Implement API Endpoints:

- Implement API endpoints for all the required operations, as mentioned in the problem statement.

9. Test the Application:

- Write unit tests and integration tests to ensure the application's functionality is working as expected.
- Test various edge cases and exception scenarios.

API endpoints for Citizens:

- To get all citizens: ``http://localhost:8889/api/citizens``
- To get a specific citizen by ID: ``http://localhost:8889/api/citizens/{id}``
- To create a new citizen: ``POST`` request to ``http://localhost:8889/api/citizens``
- To update a citizen by ID: ``PUT`` request to ``http://localhost:8889/api/citizens/{id}``
- To delete a citizen by ID: ``DELETE`` request to ``http://localhost:8889/api/citizens/{id}``.

API endpoints for VaccineCenter:

- To get all vaccination centres:
``http://localhost:8889/vaccinationcentre/api/vaccinationcentre``

- To get a specific vaccination centre by ID:

`http://localhost:8889/vaccinationcentre/api/vaccinationcentre/{id}`

- To delete a vaccination centre by ID:

`http://localhost:8889/vaccinationcentre/api/vaccinationcentre/{id}`

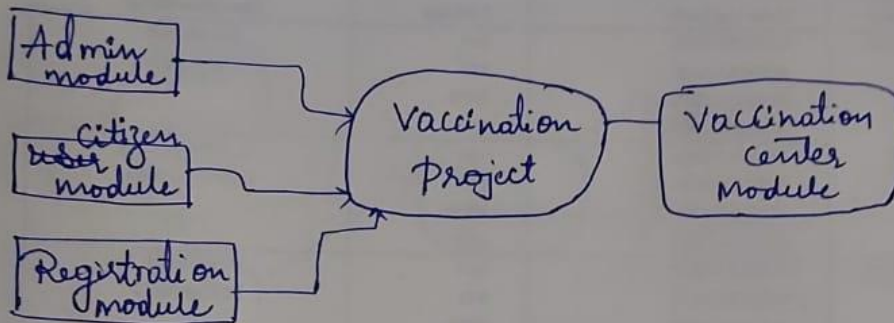
- To update a vaccination centre by ID:

`http://localhost:8889/vaccinationcentre/api/vaccinationcentre/{id}`

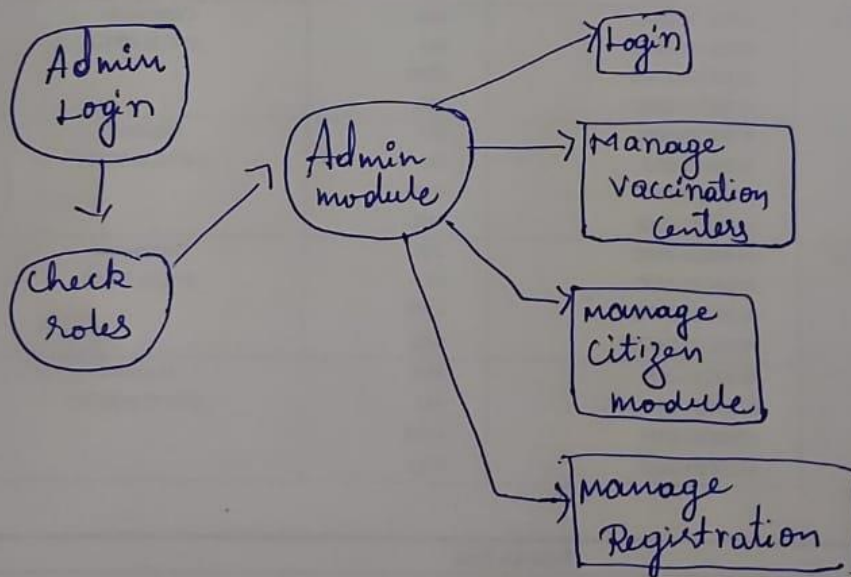
- To create a new vaccination centre:

`http://localhost:8889/vaccinationcentre/api/vaccinationcentre`

Project Flow diagram



Admin flow diagram



Citizen flow diagram

