**ASSIGNMENT**

**Problem Description:**

Create a standalone full-stack spring-boot web application with following requirements.

**Application Description:**

You are to implement an application to manage the government's

Covid-19 vaccination program, conforming to the basic feature

description provided below (you may provide more features):

**Feature Description:**

Your application should:

* Serve two kinds of user: Admin and Non-Admin
* Register ADMIN users
  + Admin users require a name, age, Aadhaar number and a password to register
  + No two admins can have same aadhaar number
  + They need to provide a unique code (known to only administrators, which will be hardcoded in the application server) to be able to register as administrators
* Allow ADMIN users to login into their registered accounts
  + Admin users can obtain a list of all registered non admin users, with their respective vaccination status and details
  + Admin users can change a non-admin user’s status from “WAITING” to “READY” by allotting to them a vaccination centre.
  + Admin users can allot centres to non-admin users from a list of available vaccination centres (a centre is available is it has been allocated to less than 50 non-admin users)
  + Admin users change a user status to VACCINATED (assuming medical staff is also an admin)
  + Admin users can register a centre on the web application
    - Each centre has [Unique Alphanumeric License Number given by Administrator, Name and Address and pin code]
* Register non-admin users for the vaccination program using their (Full Name, Age, Gender, Aadhar Number and Password)
  + Non admin users have a status associated with them, which can take values “WAITING”, “READY” and “VACCINATED”
  + If a user is WAITING then the centre allotted to them should be NULL
  + If a user is in READY state then the centre should be indicated in the user data
  + If they are vaccinated then status should be set to VACCINATED and the user should have the details of the centre in which he was vaccinated
* Allow non admin users to login into their registered accounts
  + If it is not their turn then they should be shown “WAITING” status
  + If it is their turn then they should be shown “READY” status with the address of Covid centre allotted to them (50 users can be vaccinated in a centre at a time)
  + If they have been vaccinated then the status should be “VACCINATED” with the information of the centre in which they were vaccinated

**Backend Requirements:**

* Application Requirements
  + Application should follow MVC architecture
  + Application should be built using Java, Maven and Spring-boot
  + Your application should be properly structured
  + Application should use JPA for handling database.
  + Data Access Objects and Models should be used in the application
* Database Requirements:
  + PostgreSQL or MySQL should be used for handling the database
  + Database should have 3 tables with following schema definitions:
    - Admin(aadhaar number, name, age, password)
    - user(aadhaar number, name, age, gender, password, status, centre(FK))
    - vaccination\_centres(license\_number, Name, Address and Pin code)
    - centre attribute of user is a foreign key to vaccination\_centres (user has ownership of the OneToOne relation with vaccination\_centres) [Your backend code should have this mapping]

**Frontend requirements**

* Your application should use Thymeleaf template engine to display data by creating templates
* You are expected to create a basic frontend with minimal elements for using the functionality of the application.
* You may style the frontend if you wish to.