VacQ Software Requirements

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Background

- The COVID-19 pandemic has been difficult to handle so far. The strategy of the Government COVID Center (GCC) is to get the vaccine to the citizens. To be fully vaccinated, a citizen will need 2-3 shots of vaccine.
- The Government therefore initiates a project to develop a web-based application system, called VacQ, to allow the citizens to book vaccination services to their preferred hospitals. To ensure that as many people as possible have access to such services, the system needs to be on the web platform.

Functional Requirements

1. The system shall allow a user to register by specifying the name, email, and password.
2. After registration, the user becomes a registered user, and the system shall allow the user to log in to use the system by specifying the email and password. The system shall allow a registered user to log out.
3. After login, the system shall allow the registered user to book up to 3 vaccine shots by specifying the appointment date and the preferred hospitals. The hospital list is also provided to the user.
4. The system shall allow the registered user to view their vaccination bookings.
5. The system shall allow the registered user to edit their vaccination bookings.
6. The system shall allow the registered user to delete their vaccination bookings.
7. The system shall allow the admin to view any vaccination bookings.
8. The system shall allow the admin to edit any vaccination bookings.
9. The system shall allow the admin to delete any vaccination bookings.

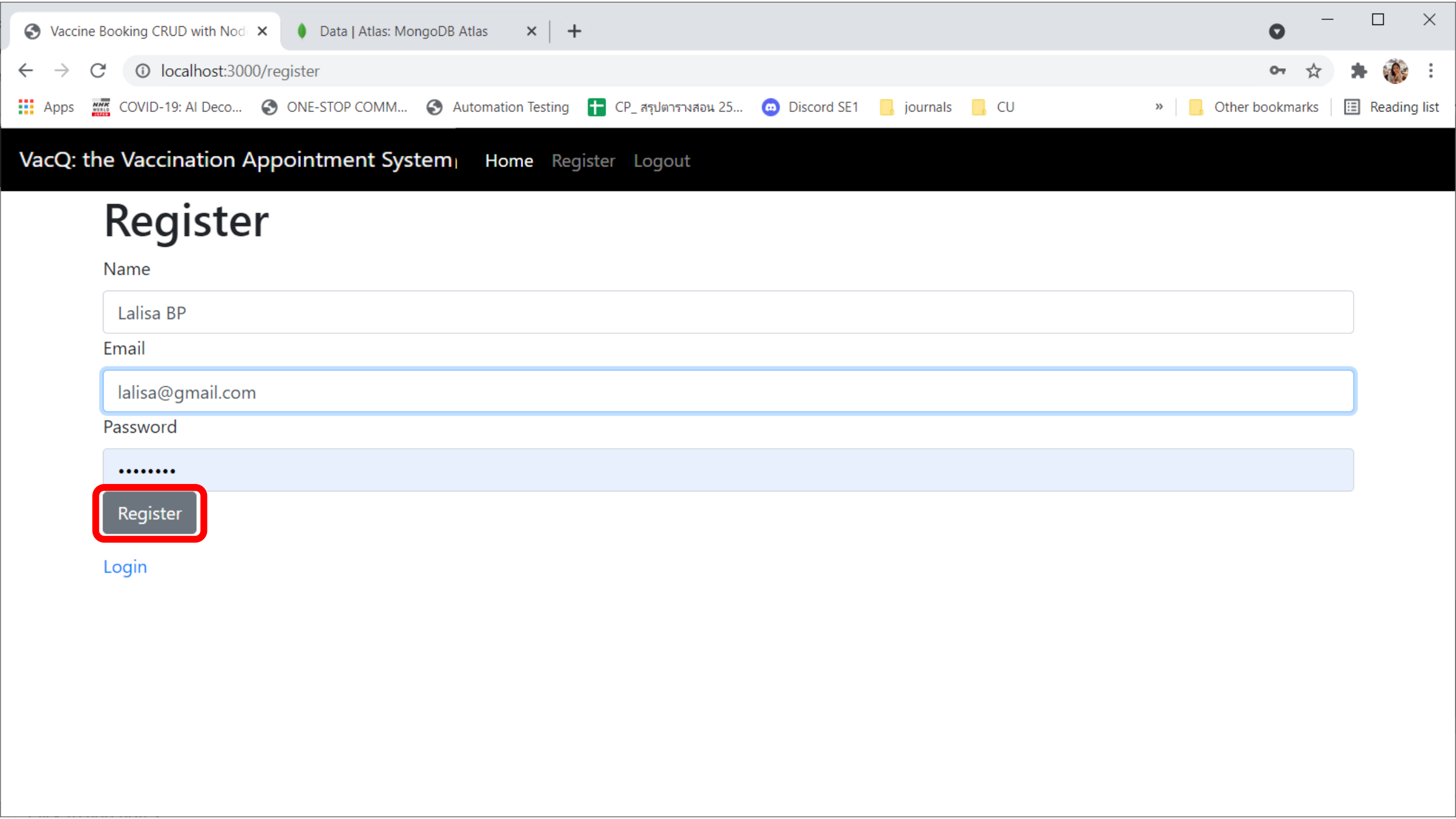
Non-Functional Requirements

- Reliability:
  - The system should have more than 99.95% uptime.
- Security:
  - The system shall authenticate users using username-password.
  - The system shall be able to keep user’s transactions confidential.
- Performance:
  - The system shall response to a request in 3 seconds.
- Usability:
  - The system shall use the provided user interface as is.

Constraints

The system shall be a web-based application.
The frontend part of the application, including the user interface, is provided in form of Node.js and Handlebars files.
The development team shall develop the backend system as REST APIs.
The database system can be either MongoDB Atlas or MySQL.
The hospital list is provided as an excel file.

The User Interface


Vaccine Booking CRUD with Nod
Data | Atlas: MongoDB Atlas
localhost:3000/register
Apps
COVID-19: AI Deco...
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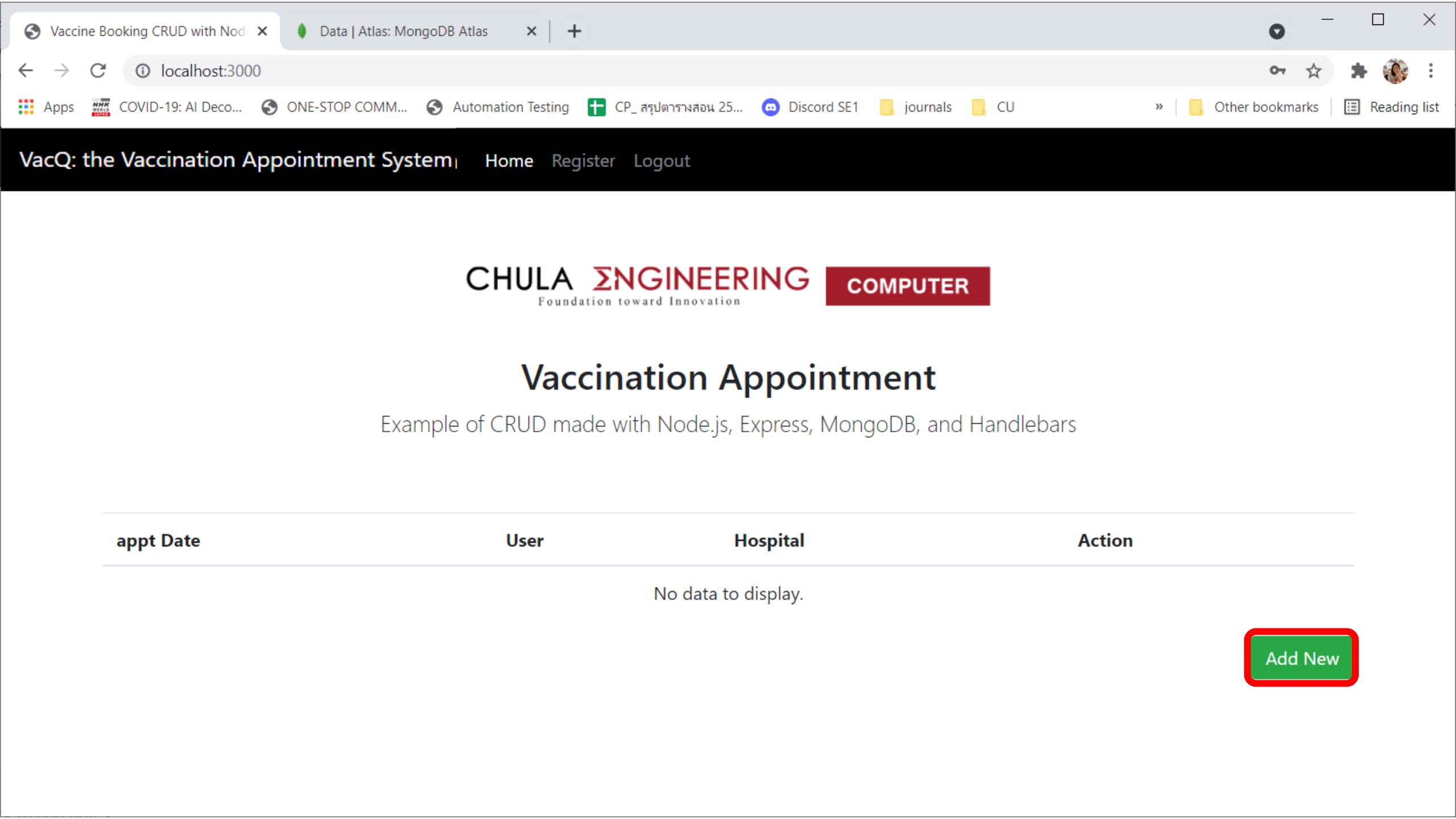
VacQ: the Vaccination Appointment System
Home
Register
Logout
Register
Name
Lalisa BP
Email
lalisa@gmail.com
Password
Register
Login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COMPUTER
Vaccination Appointment
Example of CRUD made with Node.js, Express, MongoDB, and Handlebars
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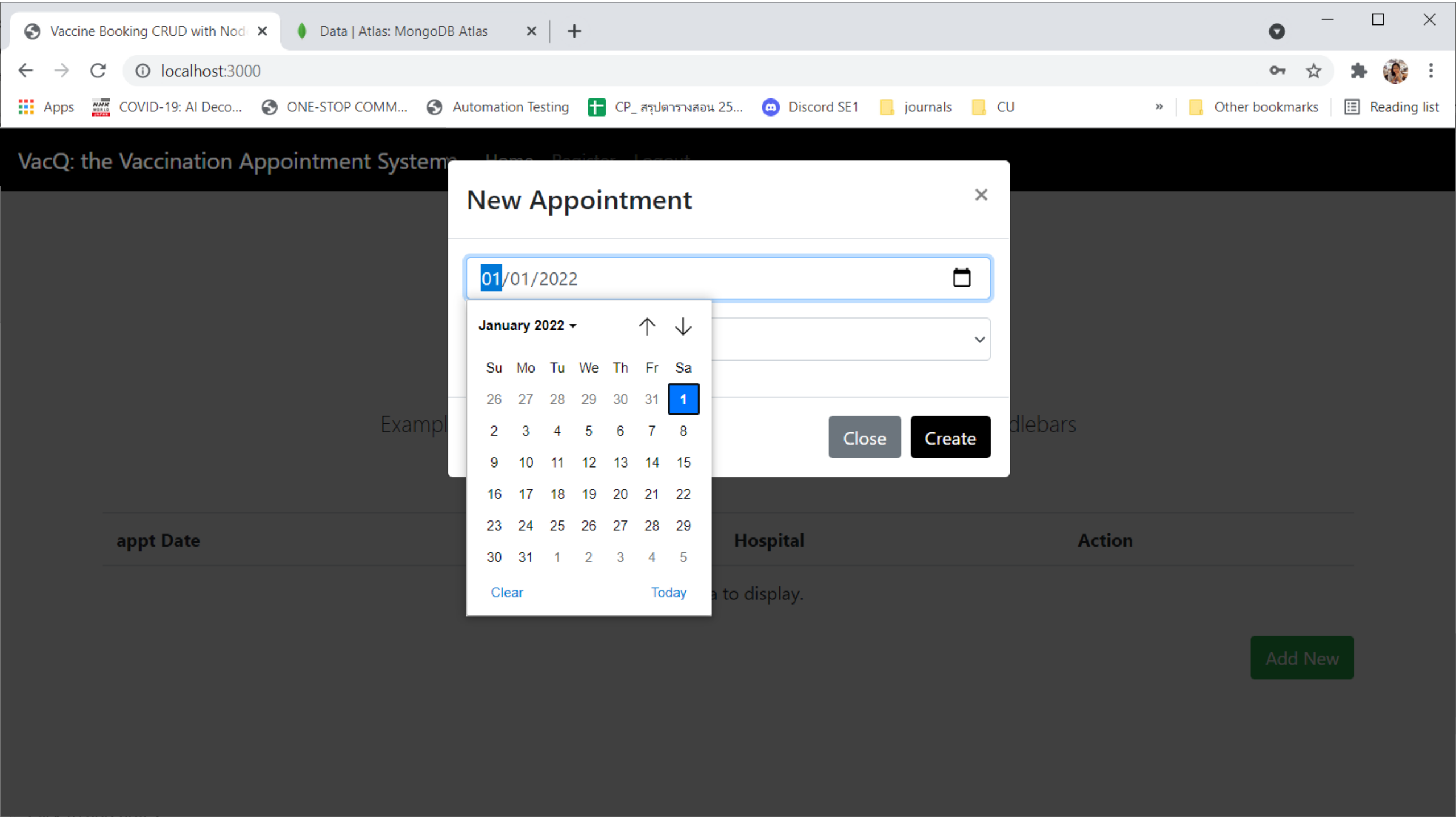
User
Hospital
Action
No data to display.
Add New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New Appointment
01/01/2022
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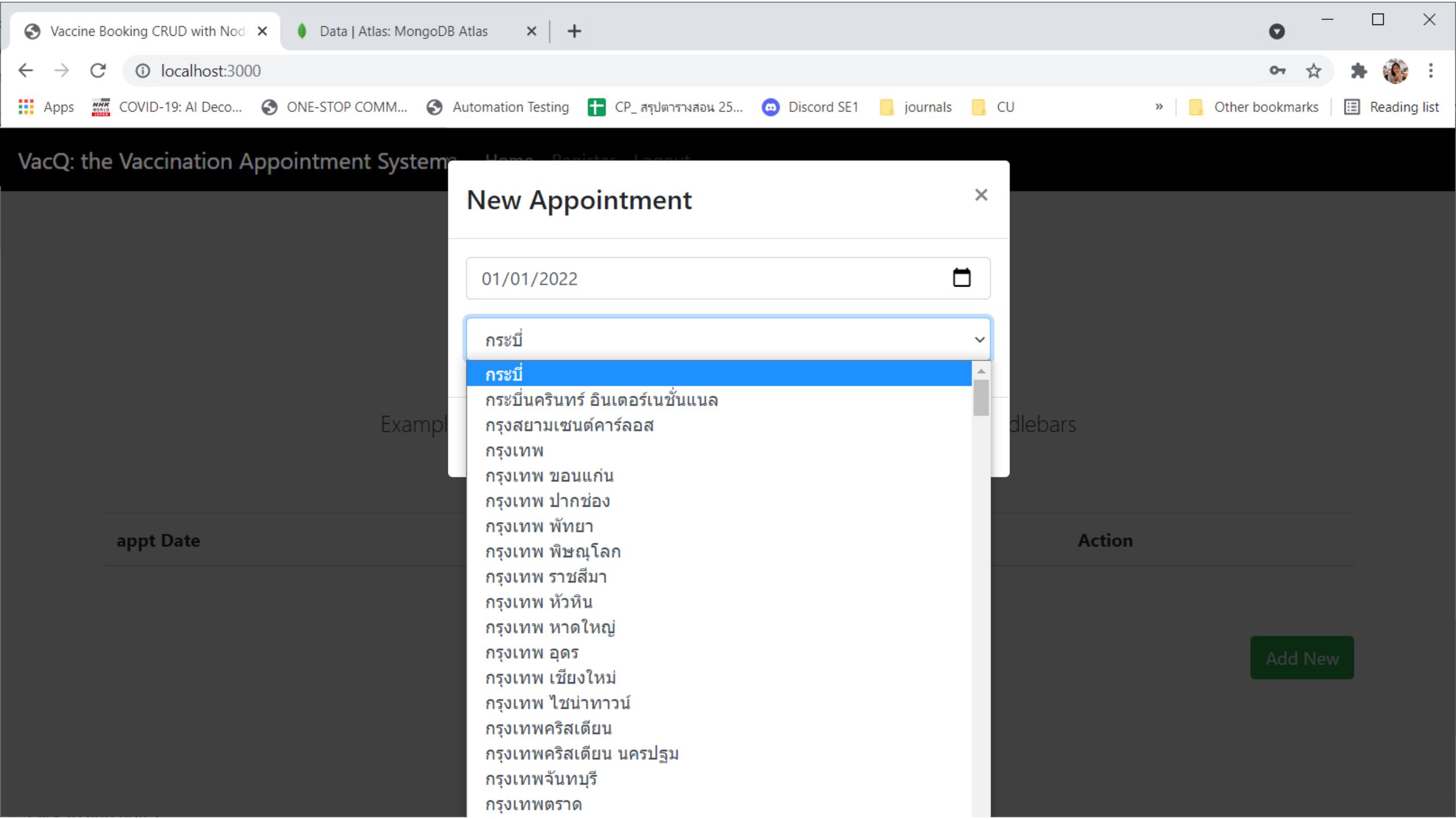
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Logout
New Appointment
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กรุงเทพ ปากช่อง
กรุงเทพ พัทยา
กรุงเทพ พิษณุโลก
กรุงเทพ ราชสีมา
กรุงเทพ หัวหิน
กรุงเทพ หาดใหญ่
กรุงเทพ อุดร
กรุงเทพ เชียงใหม่
กรุงเทพ ไชน่าทาวน์
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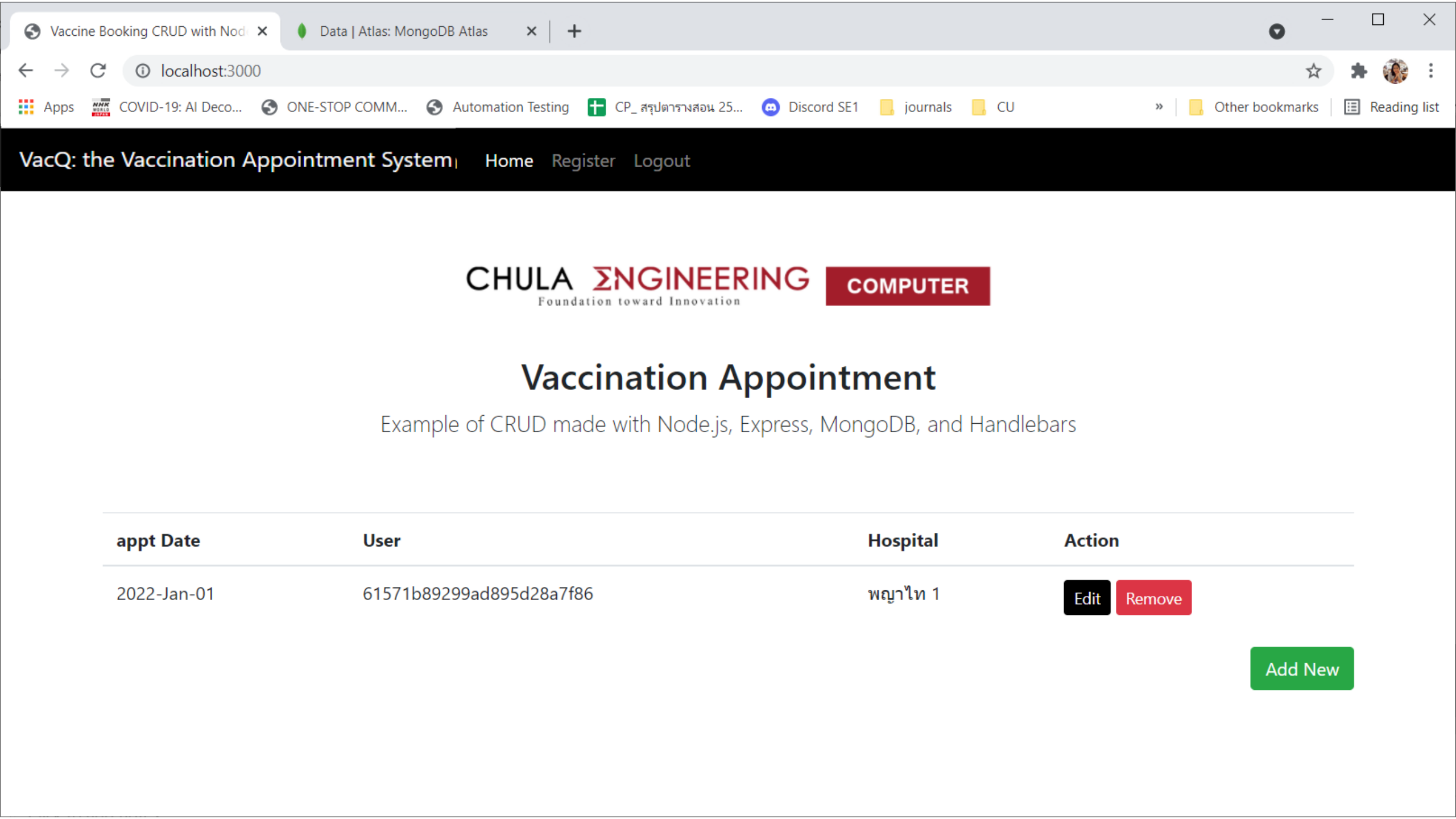
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Example of CRUD made with Node.js, Express, MongoDB, and Handlebars
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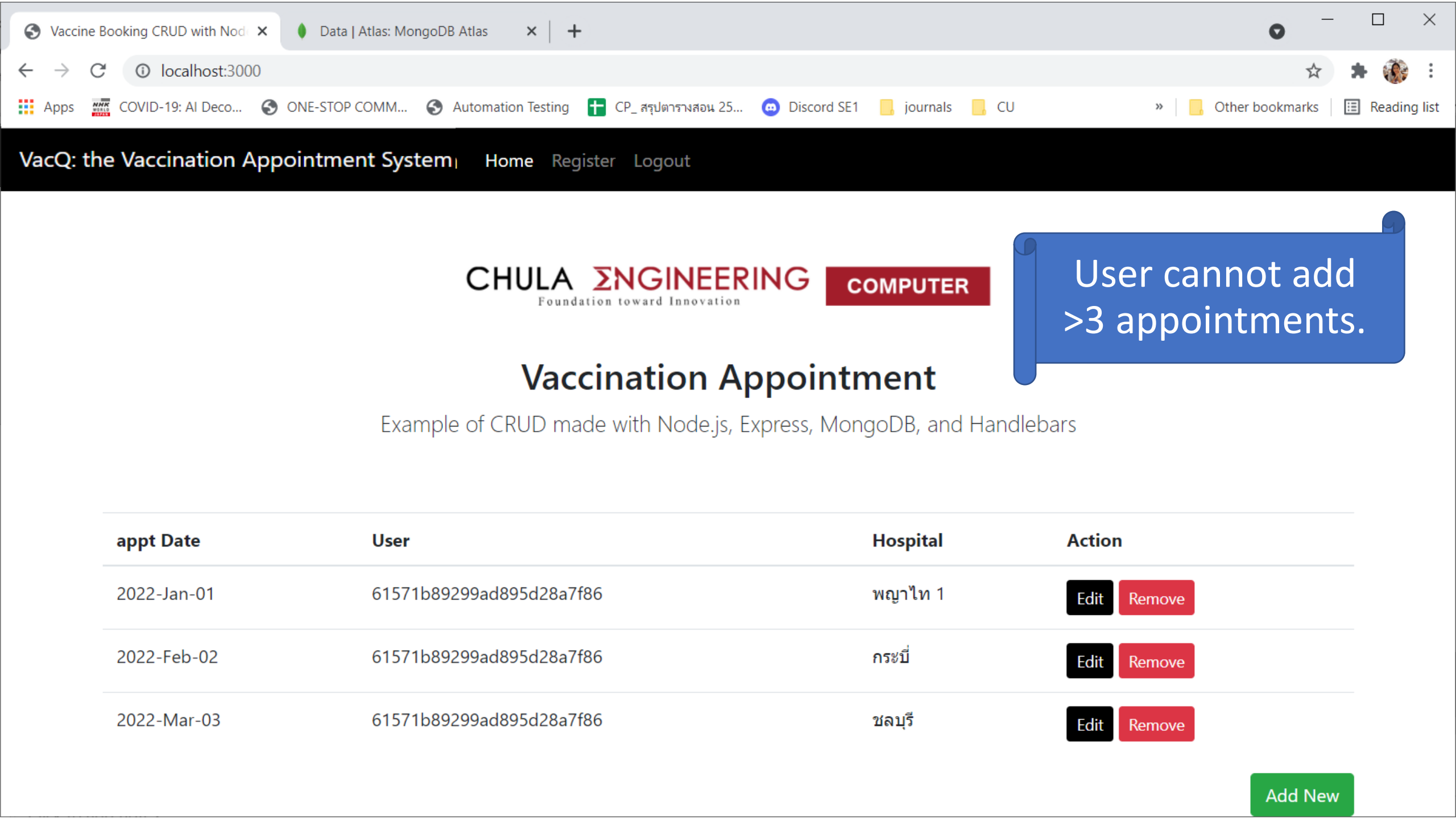
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User cannot add >3 appointments.
Vaccination Appointment
Example of CRUD made with Node.js, Express, MongoDB, and Handlebars
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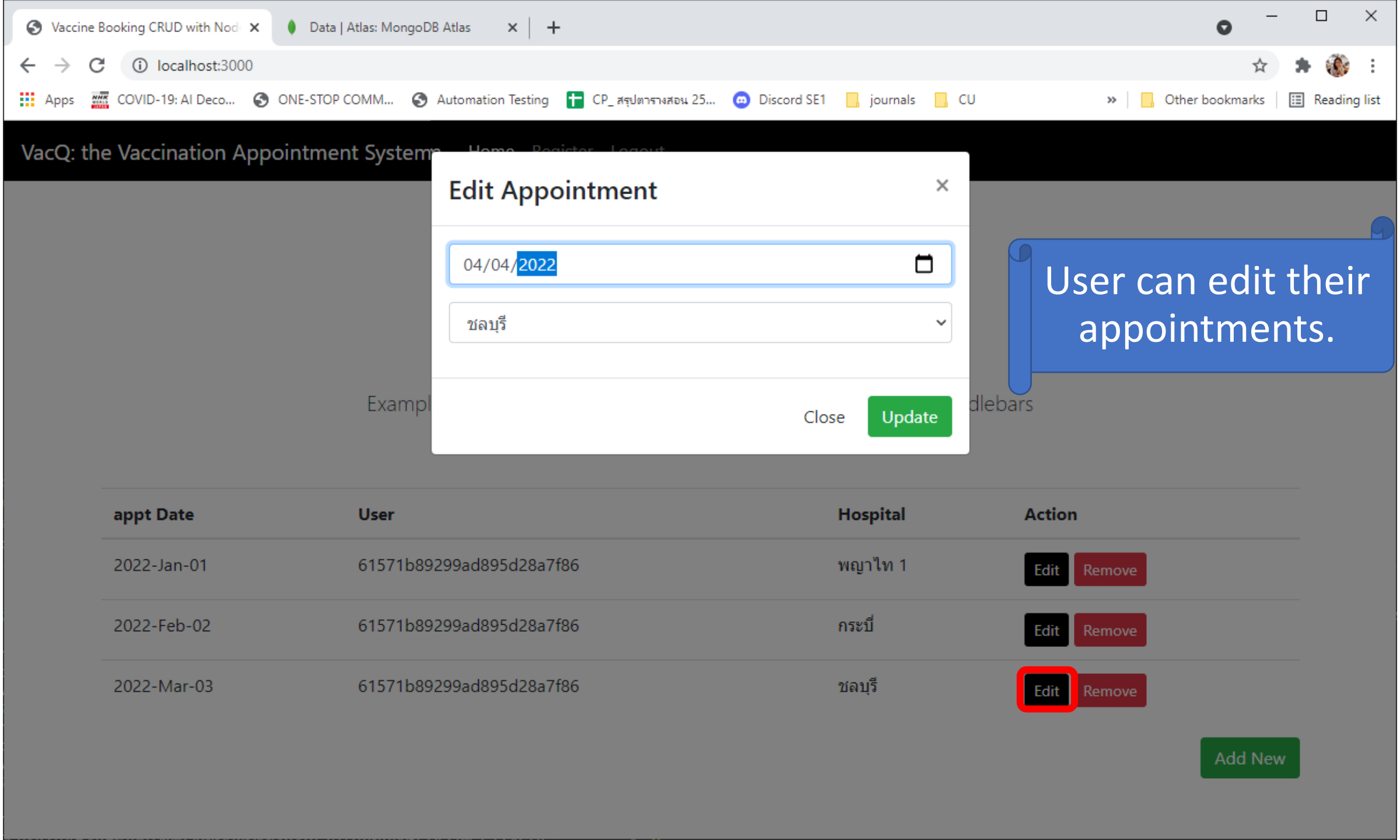
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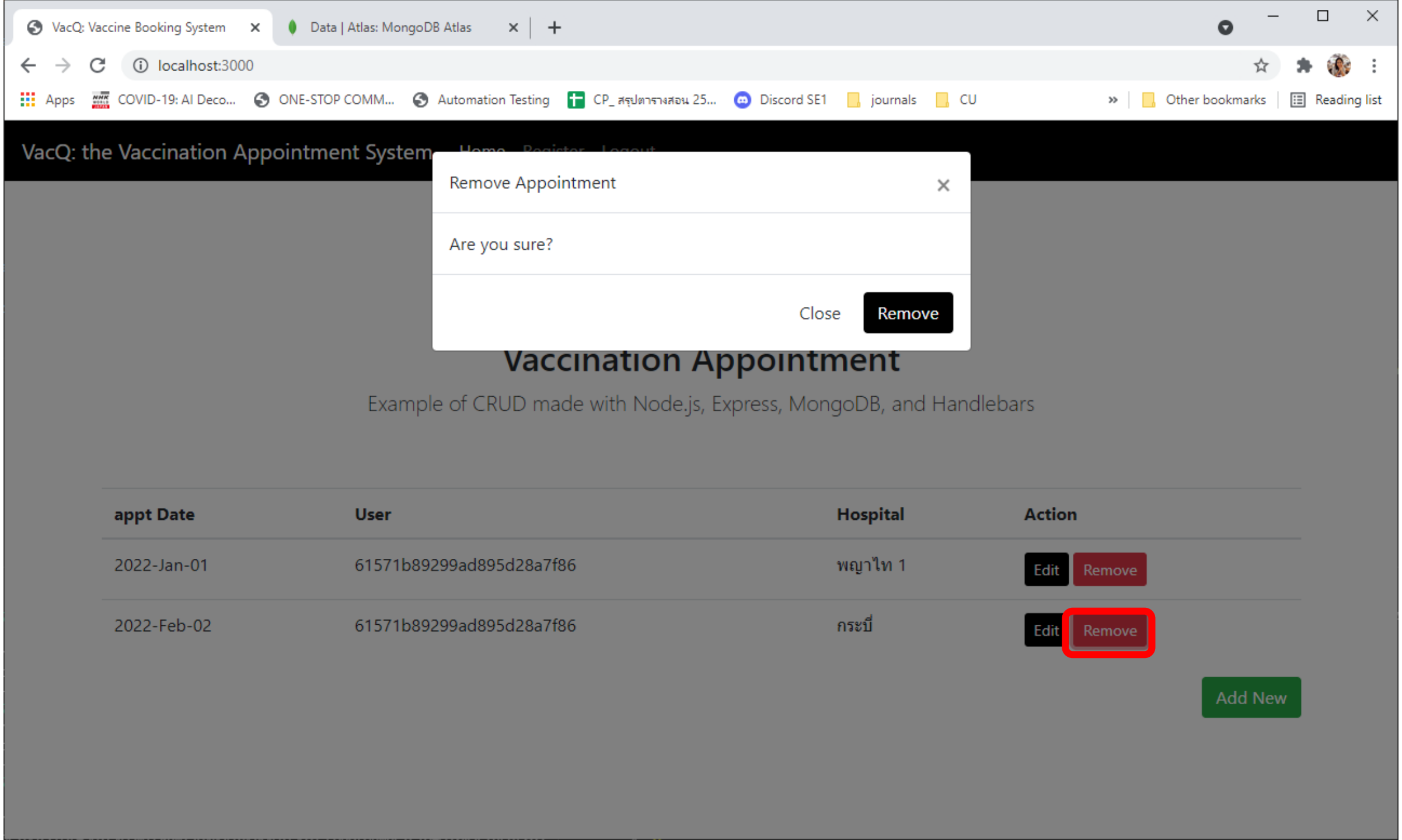
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Remove Appointment
Are you sure?
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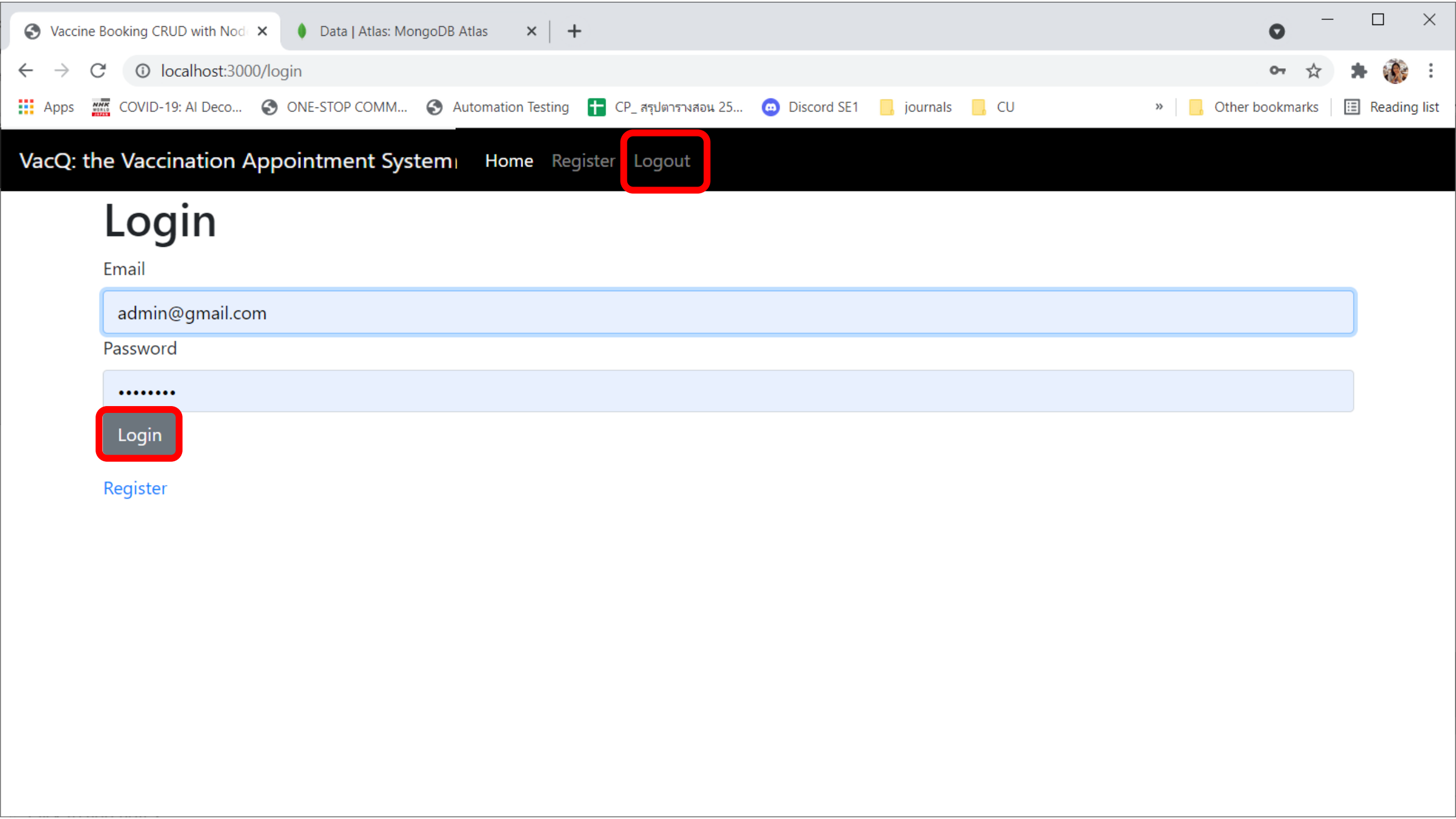
Add New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Home
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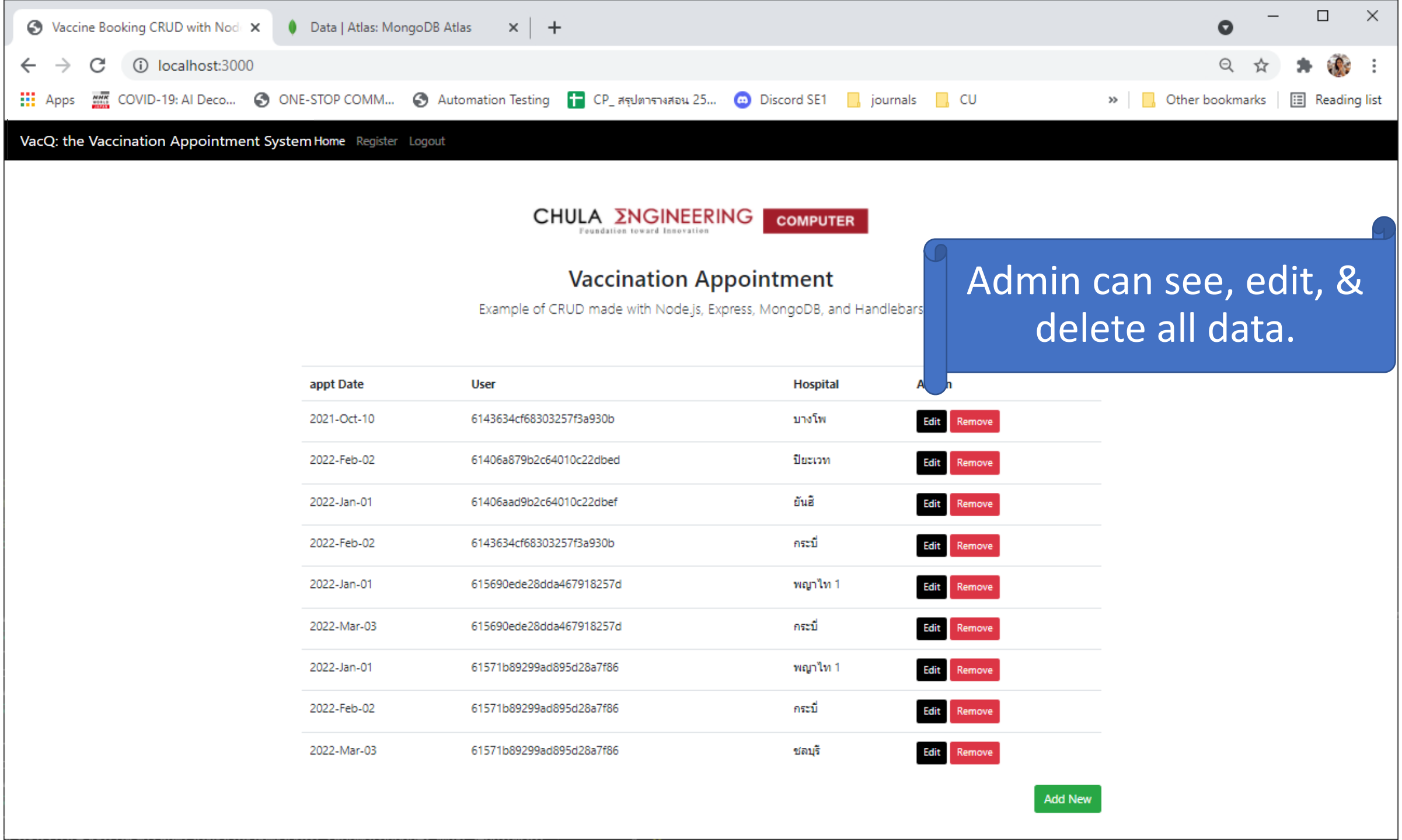
Logout
Login
Email
admin@gmail.com
Password
Login
Register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Example of CRUD made with Node.js, Express, MongoDB, and Handlebars
Admin can see, edit, & delete all data.
appt Date
User
Hospital
2021-Oct-10
6143634cf68303257f3a930b
บางโพ
2022-Feb-02
61406a879b2c64010c22dbed
ปิยะเวท
2022-Jan-01
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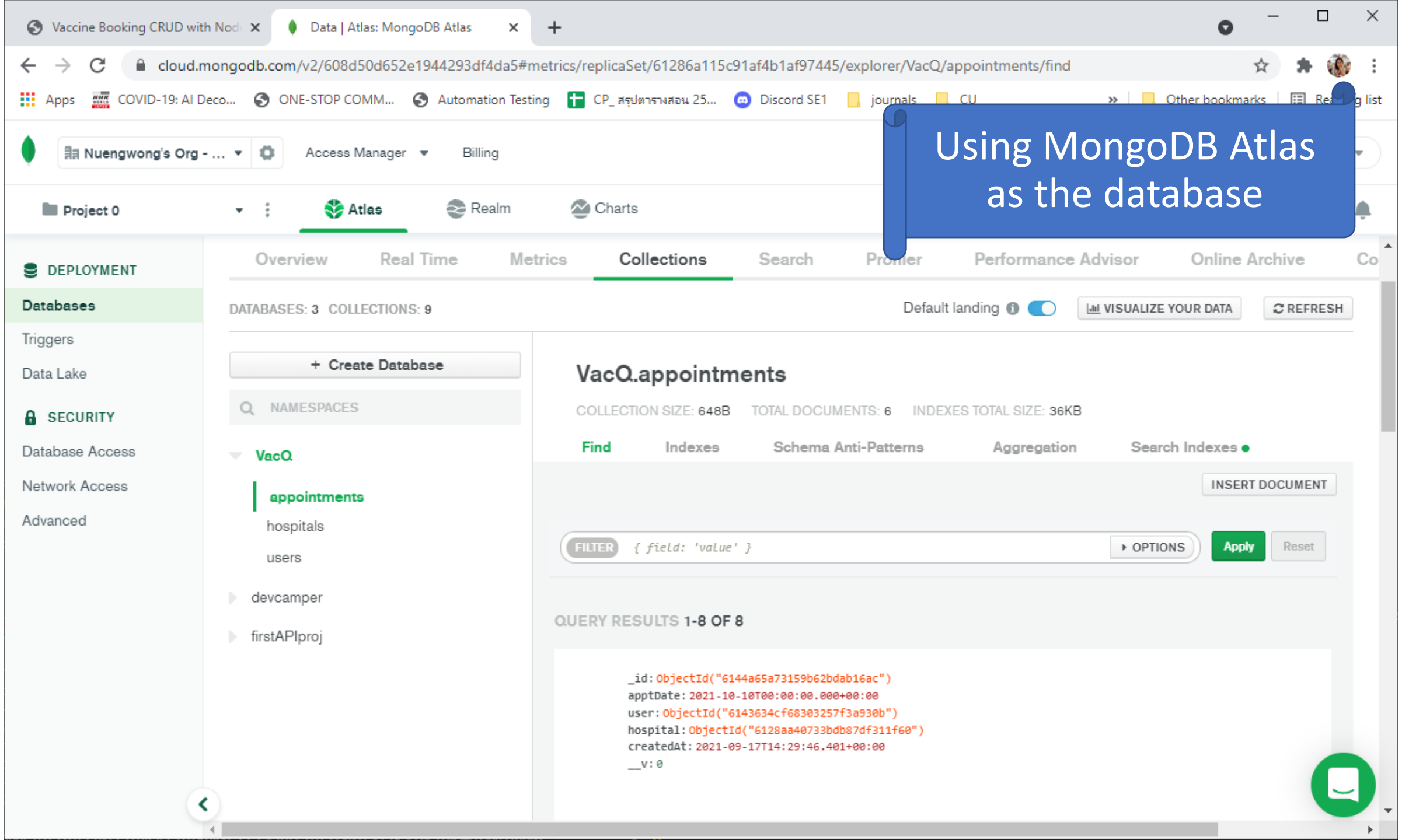
Vaccine Booking CRUD with Nod
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Access Manager
Billing
Project 0
Atlas
Realm
Charts
Using MongoDB Atlas as the database
DEPLOYMENT
Databases
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Data Lake
SECURITY
Database Access
Network Access
Advanced
Overview
Real Time
Metrics
Collections
Search
Profiler
Performance Advisor
Online Archive
DATABASES: 3 COLLECTIONS: 9
Default landing
VISUALIZE YOUR DATA
REFRESH
+ Create Database
NAMESPACES
VacQ
appointments
hospitals
users
devcamper
firstAPIproj
VacQ.appointments
COLLECTION SIZE: 648B TOTAL DOCUMENTS: 6 INDEXES TOTAL SIZE: 36KB
Find
Indexes
Schema Anti-Patterns
Aggregation
Search Indexes
INSERT DOCUMENT
FILTER { field: 'value' }
OPTIONS
Apply
Reset
QUERY RESULTS 1-8 OF 8
_id: ObjectId("6144a65a73159b62bdab16ac")
apptDate: 2021-10-10T00:00:00.000+00:00
user: ObjectId("6143634cf68303257f3a930b")
hospital: ObjectId("6128aa40733bdb87df311f60")
createdAt: 2021-09-17T14:29:46.401+00:00
__v: 0

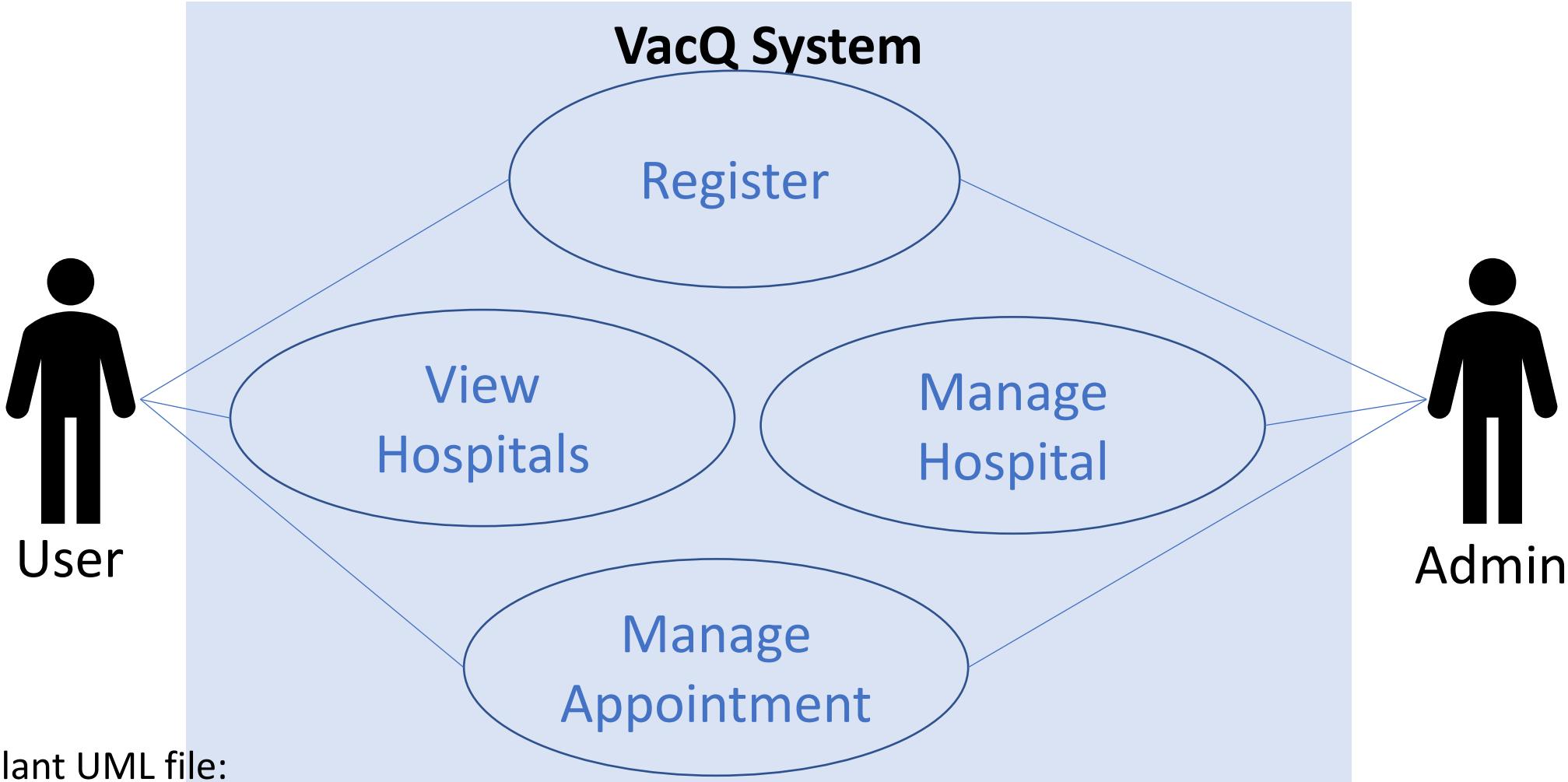
Let’s analyze our system!

- What are the Data(Resources) needed in the system?
- How many user levels?
- Which users can process which data? (Access Rights)

Access Rights

User Level	Operation	Data
User	CR__	Own User
	_R__	Hospital
	CRUD	Own Appointment
Admin	CR__	All Users
	CRUD	All Hospitals
	CRUD	All Appointments
Non-Registered	____	User/Hospital/Appointment

UML Use Case Diagram



Link to plant UML file:
https://drive.google.com/file/d/1sbPDuR_VHUdiD8A7M_y7R-CKoijVhlAD/view?usp=sharing

Let’s start our development!