

NEU Study- Meeting Room Reservation System

README

Ying Tuo, Xi Shen, Yuqin Luo, Huixin Huang

Khoury College of Computer Sciences

Northeastern University, San Jose, CA 95138

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Overview

NEU Study - Meeting Room Reservation System is a system designed for Northeastern University students to reserve meeting rooms. When students want to go to the library to study or discuss with their classmates in a meeting room, students often need to go to several rooms to find an available one. This system provides a meeting room reservation function, which allows students to easily find available rooms and make reservations so that they do not need to waste their valuable time finding rooms. We used microservice structure, consensus algorithm (Raft), message queue, digital signatures (MD5) and other techniques to develop it as a distributed management system. This reservation system has great performance in highly available, reliable, resilient, easy to use, and efficient.

Configurations Settings

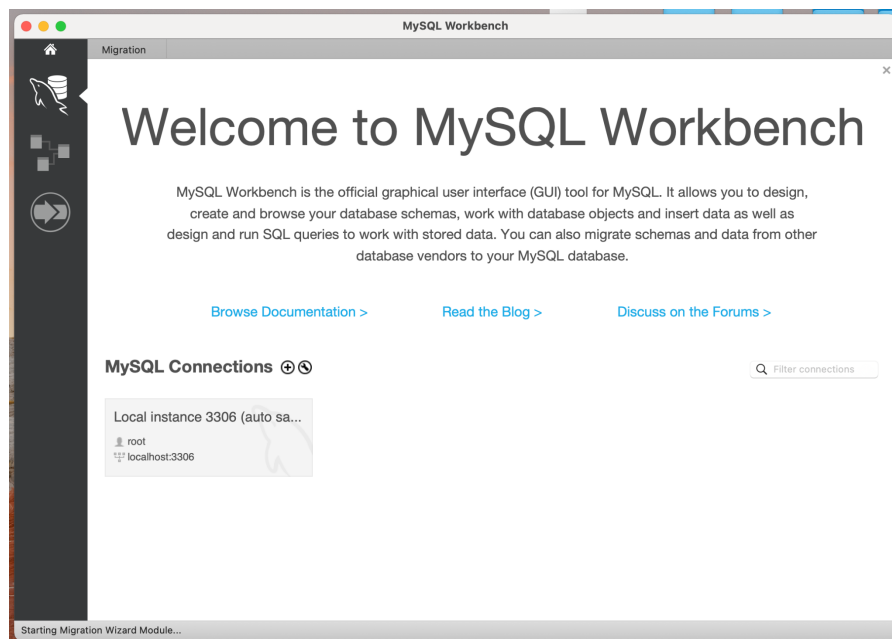
1. MySQL

Our MySQL database is running on localhost:3306, with the username root and no password.

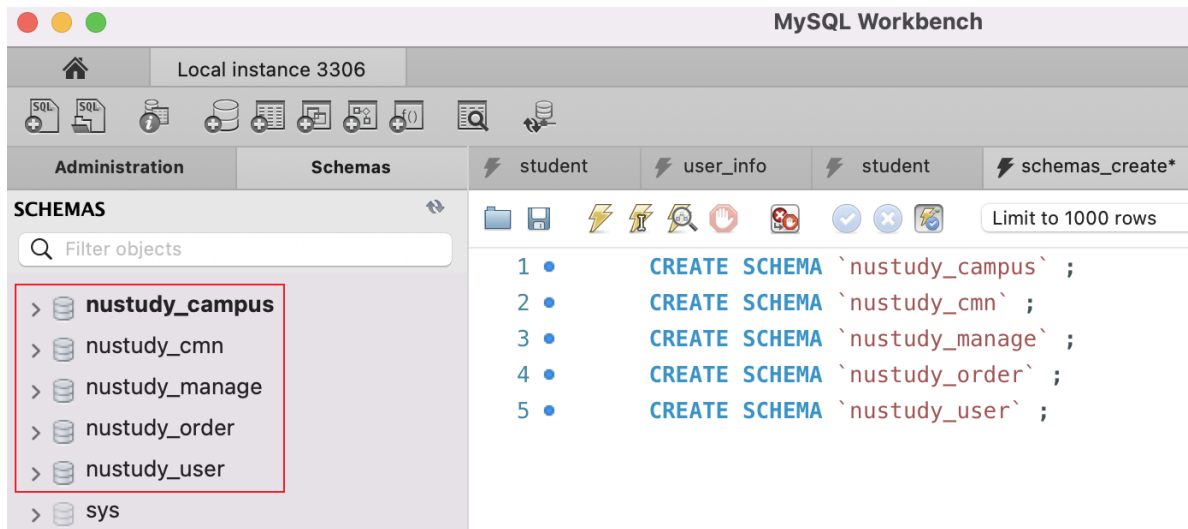
download MySQL and MySQLWORKBENCH.

Run MySQL at default port 3306.

Create a local instance with address: localhost:3306. Set username as root, and password [empty].



Open `prePropuateData/mysql_preData/schemas_create.sql` file in the package, run the following MySQL codes to Create MySQL database schemas, and we can get five schemas.



Create all tables (under `prePropuateData/mysql_preData` folder)

Run [nustudy_campus.sql](#) in schema nustudy_campus

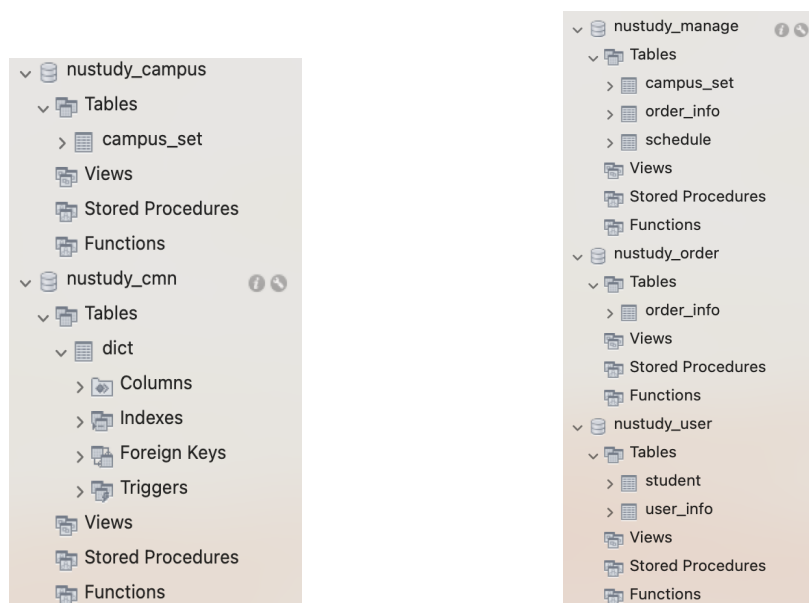
Run [nustudy_cmnm.sql](#) in schema nustudy_cmnm

Run [nustudy_manage.sql](#) in schema nustudy_manage

Run [nustudy_order.sql](#) in schema nustudy_order

Run [nustudy_user.sql](#) in schema nustudy_user

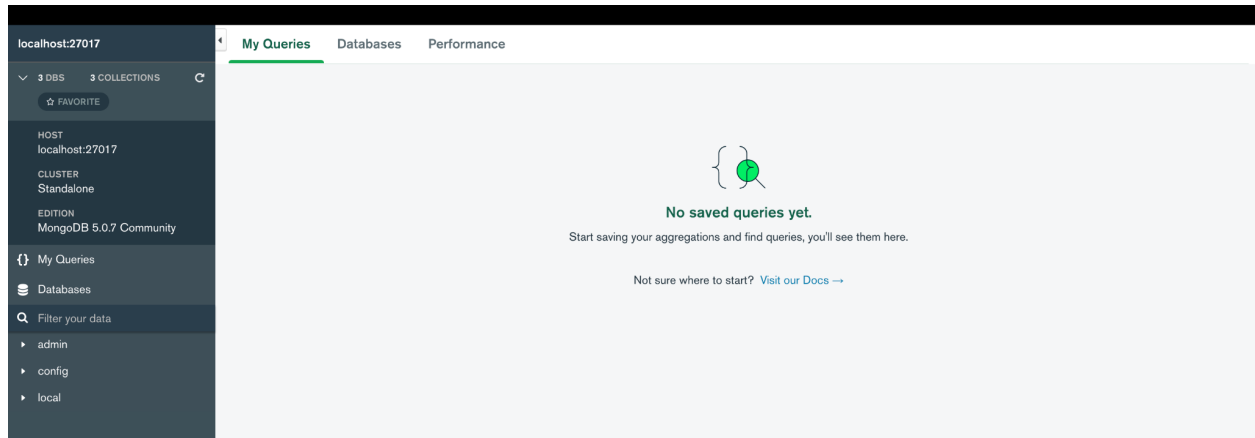
After running all sql in our mysql_preData file, the DB should be like:



For now, we have set our MySQL database.

2. MongoDB

Download MongoDB and run it on default port 27017.



3. Nacos

Download Nacos(<https://nacos.io/en-us/docs/quick-start.html>), and start it and end it in the bin directory

Start Nacos: `sh startup.sh -m standalone`

End Nacos: `sh shutdown.sh`

```
xs@chinasahis-MacBook-Pro ~/Projects/cs6650-final-project/nacos/bin$ sh startup.sh -m standalone
/opt/homebrew/Cellar/openjdk/17.0.2/libexec/openjdk.jdk/Contents/Home/bin/java -Xms512m -Xmx512m -Xmn256m -Dnacos.standalone=true -
cp ./Users/xs/Projects/cs6650-final-project/nacos/plugins/cmdb/*.jar:/Users/xs/Projects/cs6650-final-project/nacos/plugins/mysql/*.
jar -Xlog:gc*:file=/Users/xs/Projects/cs6650-final-project/nacos/logs/nacos_gc.log:time,tags:filecount=10,filesize=102400 -Dnacos.ho
me=/Users/xs/Projects/cs6650-final-project/nacos -Dloader.path=/Users/xs/Projects/cs6650-final-project/nacos/plugins/health -jar /Us
ers/xs/Projects/cs6650-final-project/nacos/target/nacos-server.jar --spring.config.location=classpath:/,classpath:/config/,file:./,
file:./config/,file:/Users/xs/Projects/cs6650-final-project/nacos/conf/ --logging.config=/Users/xs/Projects/cs6650-final-project/nac
os/conf/nacos-logback.xml --server.max-http-header-size=524288
nacos is starting with standalone
nacos is starting, you can check the /Users/xs/Projects/cs6650-final-project/nacos/logs/start.out
```

```
xs@chinasahis-MacBook-Pro ~/Projects/cs6650-final-project/nacos/bin$ sh shutdown.sh
The nacosServer(40530) is running...
Send shutdown request to nacosServer(40530) OK
xs@chinasahis-MacBook-Pro ~/Projects/cs6650-final-project/nacos/bin$
```

4. RabbitMQ

Firstly, you should make sure the RabbitMQ has been installed in your machine:

<https://rabbitmq.com/download.html>

Please also make sure you have also installed erlang and socat as the dependencies of RabbitMQ

RabbitMQ will run on default port 5672, and its management port is 15672.

Run RabbitMQ: `brew services start rabbitmq`

Then go to localhost:15672, and log in with username `guest`, and password `guest`.



Username: *

Password: *

Message queue is used for updating the available number of schedules.

RabbitMQ 3.9.15 Erlang 24.3.3

Refreshed 2022-05-03 13:45:52 Refresh every 5 seconds Virtual host All Cluster rabbit@chinasahis-MacBook-Pro User guest Log out

Overview Connections Channels Exchanges Queues Admin

Queues

▼ All queues (6)

Pagination

Page 1 of 1 - Filter: ☐ Regex ?

Displaying 6 items , page size up to: 100

Overview				Messages				Message rates				
Name	Type	Features	State	Ready	Unacked	Total	incoming	deliver / get	ack			
queue.order	classic	D	idle	0	0	0	0.00/s	0.00/s	0.00/s			
springCloudBus.anonymous.13NLpVWSSjemM2ahnAZ1cA	classic	AD Excl ML	idle	0	0	0						
springCloudBus.anonymous.MJy-TPIZTi-8Lvs-L-AKWg	classic	AD Excl ML	idle	0	0	0						
springCloudBus.anonymous.RcamjDRITBqpiL8RFmn1_A	classic	AD Excl ML	idle	0	0	0						
springCloudBus.anonymous.kxVrRAjZS3GP4VfSKD7jhg	classic	AD Excl ML	idle	0	0	0						
work_queues	classic	D	idle	0	0	0						

Run and Test

1. Run back-end firstly, we provide two ways to run our code:

1. Run each jar package separately

You can run jar files in the folder jars one by one.

```
java -jar service_gateway-0.0.1-SNAPSHOT.jar
java -jar campus_manage-0.0.1-SNAPSHOT.jar
java -jar service_campus-0.0.1-SNAPSHOT.jar
java -jar service_cmn-0.0.1-SNAPSHOT.jar
java -jar service_order-0.0.1-SNAPSHOT.jar
java -jar service_user-0.0.1-SNAPSHOT.jar
```

Hint: when running the jar files failed with noticing the port is already in use, please use `lsof -i :port ->` to get the PID.

And run `kill -15 PID`

to kill the process running on the port.

2. Or you can run the `run.sh` to start all jars together at jars directory by script.

```
jars > sh run.sh
ct/jars$ sh run.sh
```

If you want to exit, you can command+C, and **kill** all ports.

```
>lsof -i : 8201 -> get its PID1
> kill -15 PID1
>lsof -i : 8202 -> get its PID2
```

```
> kill -15 PID2

>lsof -i : 8203 -> get its PID3

> kill -15 PID3

>lsof -i : 8206 -> get its PID6

> kill -15 PID6

>lsof -i : 80 -> get its PID0

> kill -15 PID0

>lsof -i : 9998 -> get its PID8

> kill -15 PID8
```

```
xs@chinasahis-MacBook-Pro ~/Projects/cs6650-final-project/jars$ lsof -i:8202
COMMAND  PID USER  FD  TYPE             DEVICE SIZE/OFF NODE NAME
java     83695  xs    13u  IPv6 0x6566929662853fc3      0t0  TCP *:8202 (LISTEN)
xs@chinasahis-MacBook-Pro ~/Projects/cs6650-final-project/jars$ kill -15 83695
```

2. Run front-end

1. Run NEU Study Central Server Management website

/finalproject/nustudy_frontend/ nustudy_central_management_site/

At its directory, run: `npm run dev`

```
corteydeMacBook-Pro:nustudy_central_management_site cortey$ npm run dev
```

Then in browser run localhost:9528



2. Run NEU Study Room Reservation System

At the directory nustudy-site, run: `npm run dev`

/finalproject/nustudy_frontend/ nustudy_student_site/

```
corteydeMacBook-Pro:nustudy_student_site cortey$ npm run dev
```

Then in browser run localhost:3000

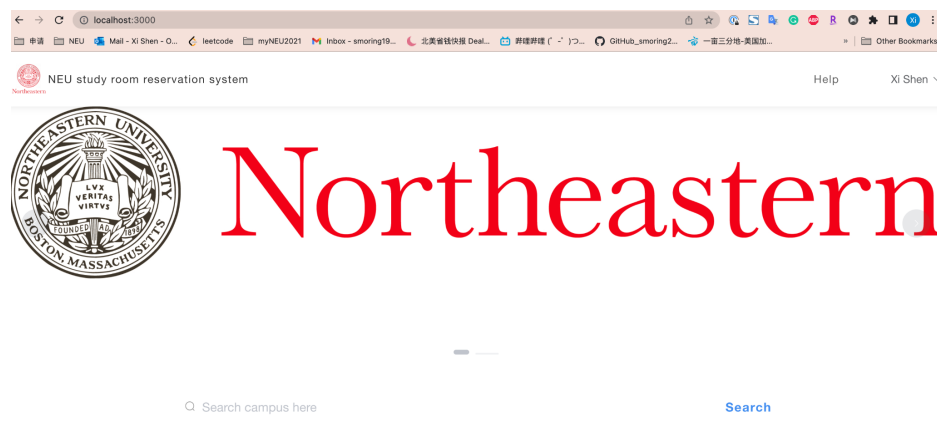
You can use any email of below as the username and **any** password to login.

tuo.y@northeastern.edu

shen.x@northeastern.edu

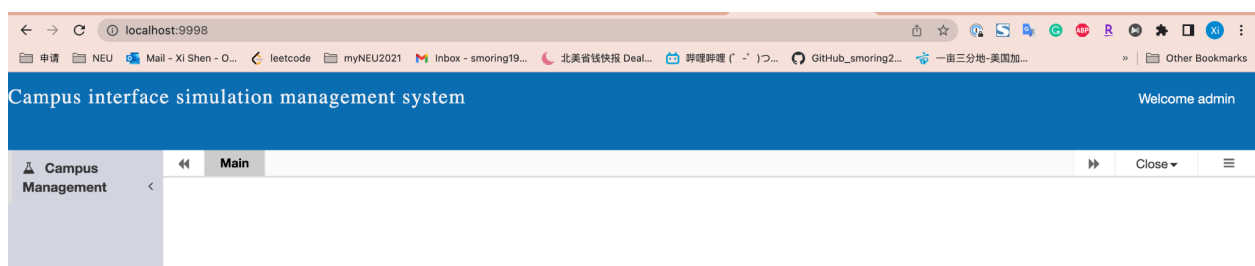
huang.huix@northeastern.edu

luo.yuqin@northeastern.edu



Run NEU-Silicon Valley Campus

After running the campus_manage of the back-end, Then in browser run localhost:9998

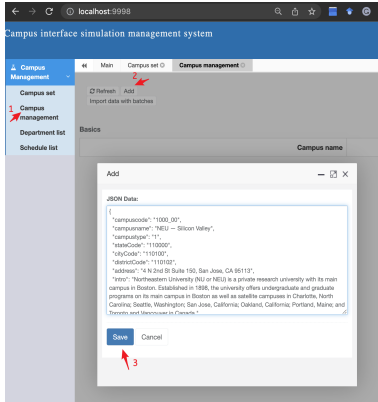
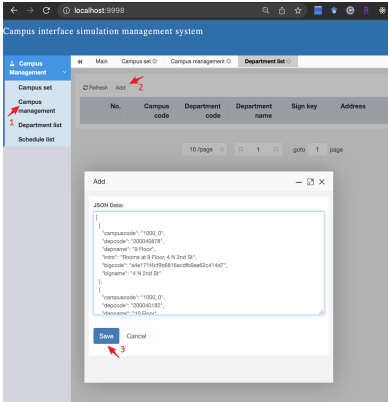
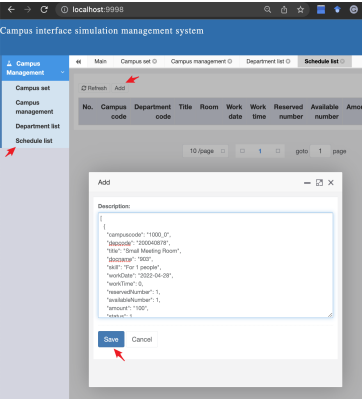


For now, this whole project has run successfully.

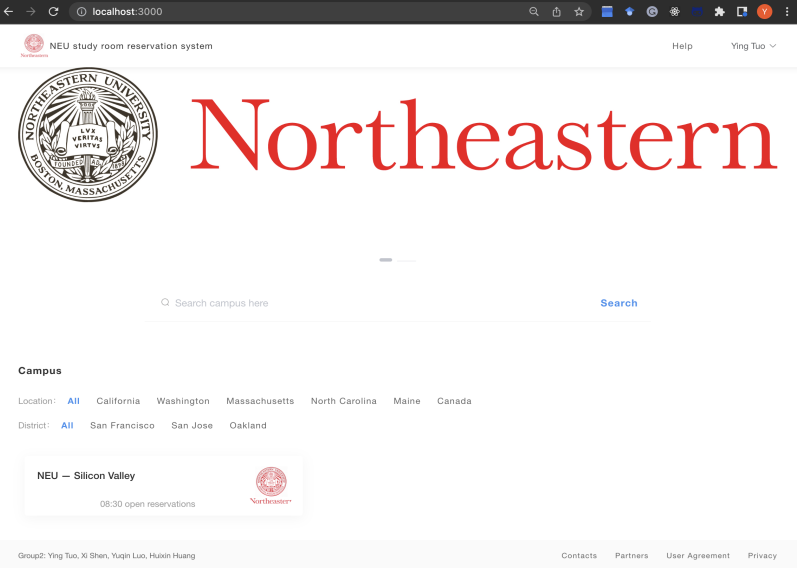
3. Start To Test

Push dummy data to the MongoDB database

<http://localhost:9998/> Campus management:

Campus	Department	Schedule
		

And the data will show on the reservation system.


Start to book


Choose room

← → ↻

localhost:3000/campus/1000_00

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 NEU study room reservation system

Help Ying Tuo ▾

■ Start

NEU — Silicon Valley West Coast, US

Campus Intro



Reservation Rules

Booking cycle: 100days Begin: 08:30 End: 11:30

Cancel: By 15:30 the day before visitor

Booking rules:

- On the same calendar day, the same campus, the same room, and the same student, you can book a maximum of 1 number source
- If you need to cancel the reserved study room, please cancel the reservation through the website at least before 18:00 on the previous working day.

Rules

Building And Floor

4 N 2nd St

WeWork Building

4 N 2nd St

9 Floor

10 Floor

WeWork Building

9 Floor

9 Floor

Group: Ying Tuo, Xi Shen, Yujin Luo, Huixin Huang


Contacts Partners User Agreement Privacy

Book

← → ↻

localhost:3000/campus/schedule?campuscode=1000_00&depcode=200040878

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 NEU study room reservation system

Help Ying Tuo ▾

■ Start

NEU — Silicon Valley 4 N 2nd St

Campus Intro

9 Floor

2022-05

Rules

2022-05-01 Sun	2022-05-02 Mon	2022-05-03 Tue	2022-05-04 Wed	2022-05-05 Thu	2022-05-06 Fri	2022-05-07 Sat
Available	Available	Available	Available	Available	Available	Not open

< 1 2 >

8:00 AM - 11:50 AM

Small Meeting Room 903

For 1 people

Book

Large Meeting Room 901

1 MONITORS; FOR 10 PEOPLE

Book

12:00 PM - 17:59 PM

Small Meeting Room 912

FOR 6 PEOPLE

Book

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Submit & Review

← → ↻

localhost:3000/order/show?orderId=125

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 NEU study room reservation system

Help Ying Tuo ▾

Details

Reservation Information

Name: Ying Tuo

Date: 2022-05-01 8:00AM - 11:59 AM

Campus: NEU — Silicon Valley

Floor: 9 Floor

Room: Small Meeting Room

Order No. 16514259354956


Group2: Ying Tuo, Xi Shen, Yujin Luo, Huixin Huang

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← → ↻

localhost:3000/campus/schedule?campuscode=1000_00&depcode=200040878

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 NEU study room reservation system

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Start

NEU — Silicon Valley 4 N 2nd St

9 Floor

Campus Intro

Rules

2022-05-01 Sun Available

2022-05-02 Mon Available

2022-05-03 Tue Available

2022-05-04 Wed Available

2022-05-05 Thu Available

2022-05-06 Fri Available

2022-05-07 Sat Not open

< 1 2 >

8:00 AM - 11:50 AM

Small Meeting Room 903

For 1 people

Reserved

Large Meeting Room 901

1 MONITORS; FOR 10 PEOPLE

Book

12:00 PM - 17:59 PM

Small Meeting Room 912

FOR 6 PEOPLE

Book

Group2: Ying Tuo, Xi Shen, Yujin Luo, Huixin Huang

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