

ENGSE203 - LAB3

Step 1

จาก LAB4 ของวิชา ENGSE202 ตามรูป

LAB4 - Back-end Server (Ubuntu) ✓

At Backend server ของตัวเอง (Server name: backendxxx)

Step 1 — Install New Ubuntu Server

A. server ใหม่ให้ตั้งชื่อ
backendxxx
xxx = รหัส 3 ตัวท้าย (ไม่ว่าจะมีดี)
เช่น 66543210010-5 นายณัฐกร บุศราภุล
จะได้เป็น backend010
และ user/password เหมือนกับเครื่องแรก

B. server เดิมให้ตั้งชื่อ
webserverxxx
xxx = รหัส 3 ตัวท้าย (ไม่ว่าจะมีดี)
เช่น 66543210010-5 นายณัฐกร บุศราภุล
จะได้เป็น webserver010

backend2-xxxxx

backend1-xxxxx

กรณีที่ต้องการเปลี่ยนชื่อ host ของเครื่อง
<https://www.cyberciti.biz/faq/ubuntu-change-hostname-command/>

คำสั่งเปลี่ยน hostname

sudo nano /etc/hostname

sudo nano /etc/hosts

sudo reboot

BACKEND1

```
Last login: Wed Jan 10 07:23:47 2024 from 10.211.55.2
devuser@backend1-66543210030:~$
```

BACKEND2

```
Last login: Wed Jan 10 07:23:51 2024 from 10.211.55.2  
backend030@backend2-66543210030:~$
```

ทำการเพิ่ม User

```
devuser@backend1-66543210030:~$ sudo -i  
root@backend1-66543210030:~# adduser supalerk  
root@backend1-66543210030:~# usermod -aG sudo  
supalerk  
root@backend1-66543210030:~# ufw allow OpenSSH  
root@backend1-66543210030:~# ufw enable  
root@backend1-66543210030:~# ufw status  
root@backend1-66543210030:~# ufw status
```

```

devuser@backend1-66543210030:~$ sudo -i
[sudo] password for devuser:
root@backend1-66543210030:~# adduser supalerk
Adding user `supalerk' ...
Adding new group `supalerk' (1002) ...
Adding new user `supalerk' (1002) with group `supalerk' ...
Creating home directory `/home/supalerk' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for supalerk
Enter the new value, or press ENTER for the default
    Full Name []: supalerk aryuyuen
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
root@backend1-66543210030:~# usermod -aG sudo supalerk
root@backend1-66543210030:~# ufw allow OpenSSH
Skipping adding existing rule
Skipping adding existing rule (v6)
root@backend1-66543210030:~# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
root@backend1-66543210030:~# ufw status
Status: active

To                         Action      From
--                         -----      ---
OpenSSH                      ALLOW       Anywhere
Apache                       ALLOW       Anywhere
Nginx Full                   ALLOW       Anywhere
3333                        ALLOW       Anywhere
3000                        ALLOW       Anywhere
3001                        ALLOW       Anywhere
3002                        ALLOW       Anywhere
3004                        ALLOW       Anywhere
3003                        ALLOW       Anywhere
OpenSSH (v6)                 ALLOW       Anywhere (v6)
Apache (v6)                  ALLOW       Anywhere (v6)
Nginx Full (v6)              ALLOW       Anywhere (v6)
3333 (v6)                   ALLOW       Anywhere (v6)
3000 (v6)                   ALLOW       Anywhere (v6)
3001 (v6)                   ALLOW       Anywhere (v6)
3002 (v6)                   ALLOW       Anywhere (v6)
3004 (v6)                   ALLOW       Anywhere (v6)
3003 (v6)                   ALLOW       Anywhere (v6)

```

devuser@backend1-66543210030:~\$ sudo apt update &&
sudo apt upgrade

Step 2

STEP2 ติดตั้งที่ backend1 และ backend2 (ถ้ามีแล้วให้ข้ามไป)

ติดตั้ง Apache และ Nginx

ทำการเช็คว่าได้ทำการติดตั้งแล้ว

BACKEND1

```
devuser@backend1-66543210030:~$ sudo ufw status
```

To	Action	From
--	-----	-----
OpenSSH	ALLOW	Anywhere
Apache	ALLOW	Anywhere
Nginx Full	ALLOW	Anywhere
3333	ALLOW	Anywhere
3000	ALLOW	Anywhere
3001	ALLOW	Anywhere
3002	ALLOW	Anywhere
3004	ALLOW	Anywhere
3003	ALLOW	Anywhere
OpenSSH (v6)	ALLOW	Anywhere (v6)
Apache (v6)	ALLOW	Anywhere (v6)
Nginx Full (v6)	ALLOW	Anywhere (v6)
3333 (v6)	ALLOW	Anywhere (v6)
3000 (v6)	ALLOW	Anywhere (v6)
3001 (v6)	ALLOW	Anywhere (v6)
3002 (v6)	ALLOW	Anywhere (v6)
3004 (v6)	ALLOW	Anywhere (v6)
3003 (v6)	ALLOW	Anywhere (v6)

BACKEND2

```
backend030@backend2-66543210030:~$ sudo ufw app list
Available applications:
  Apache
  Apache Full
  Apache Secure
  Nginx Full
  Nginx HTTP
  Nginx HTTPS
  OpenSSH
backend030@backend2-66543210030:~$ sudo ufw allow 'Apache'
Rule added
Rule added (v6)
backend030@backend2-66543210030:~$ sudo ufw status
Status: active

To                         Action      From
--                         --         --
OpenSSH                     ALLOW      Anywhere
Nginx Full                  ALLOW      Anywhere
4000                        ALLOW      Anywhere
Apache                       ALLOW      Anywhere
OpenSSH (v6)                 ALLOW      Anywhere (v6)
Nginx Full (v6)              ALLOW      Anywhere (v6)
4000 (v6)                   ALLOW      Anywhere (v6)
Apache (v6)                  ALLOW      Anywhere (v6)
```

Step 3

STEP3 ติดตั้งที่ backend1 และ backend2 (ถ้ามีแล้วให้ข้ามไป)
ติดตั้ง NodeJS Version
<https://deb.nodesource.com/>

ทำการเช็คว่าติดตั้งหรือไม่ถ้าไม่ได้ติดตั้งให้ทำการลิ้งนี้

<https://deb.nodesource.com/>

BACKEND1

backend030@backend1-66543210030:~\$ node -v

```
devuser@backend1-66543210030:~$ node -v
v20.11.0
devuser@backend1-66543210030:~$
```

BACKEND2

backend030@backend2-66543210030:~\$ node -v

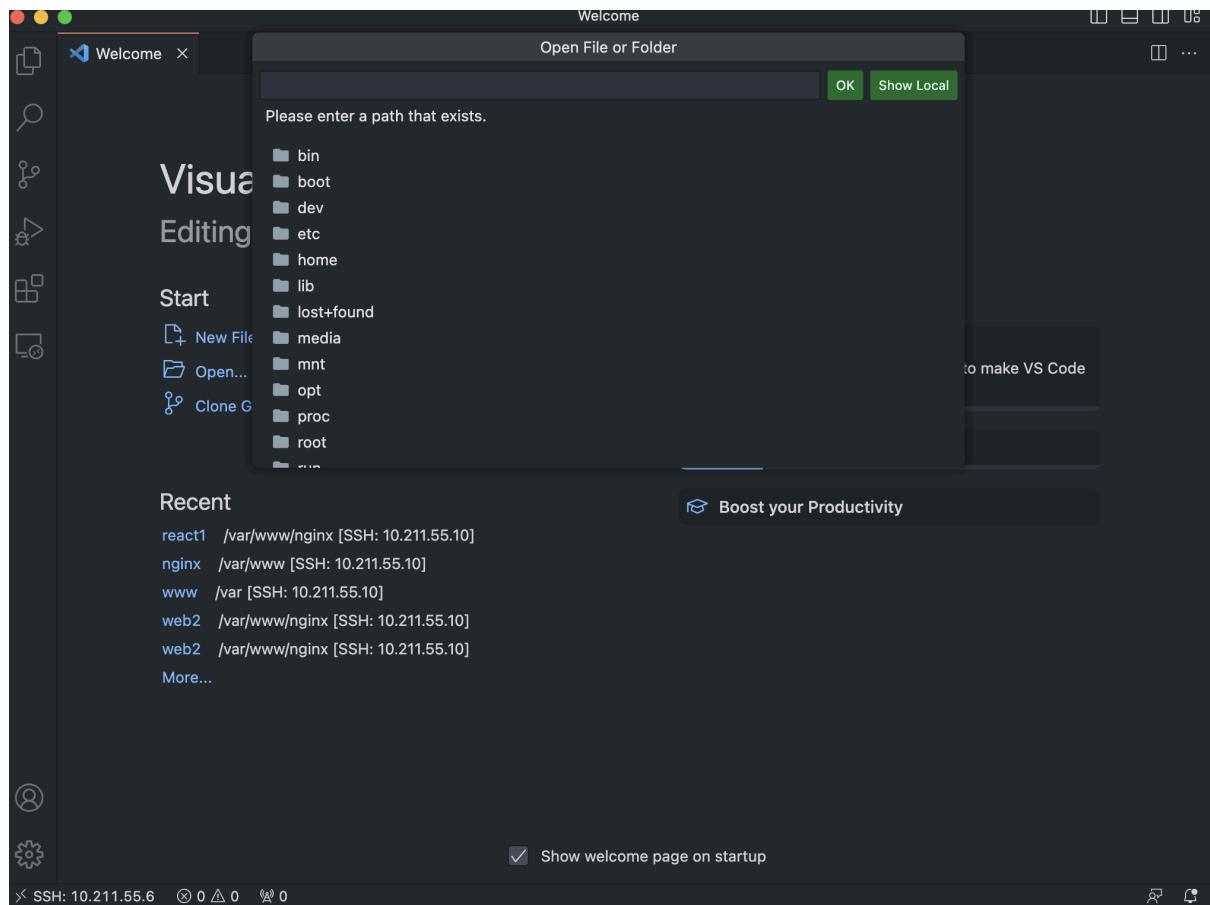
```
backend030@backend2-66543210030:~$ node -v
v20.11.0
```

Step 4

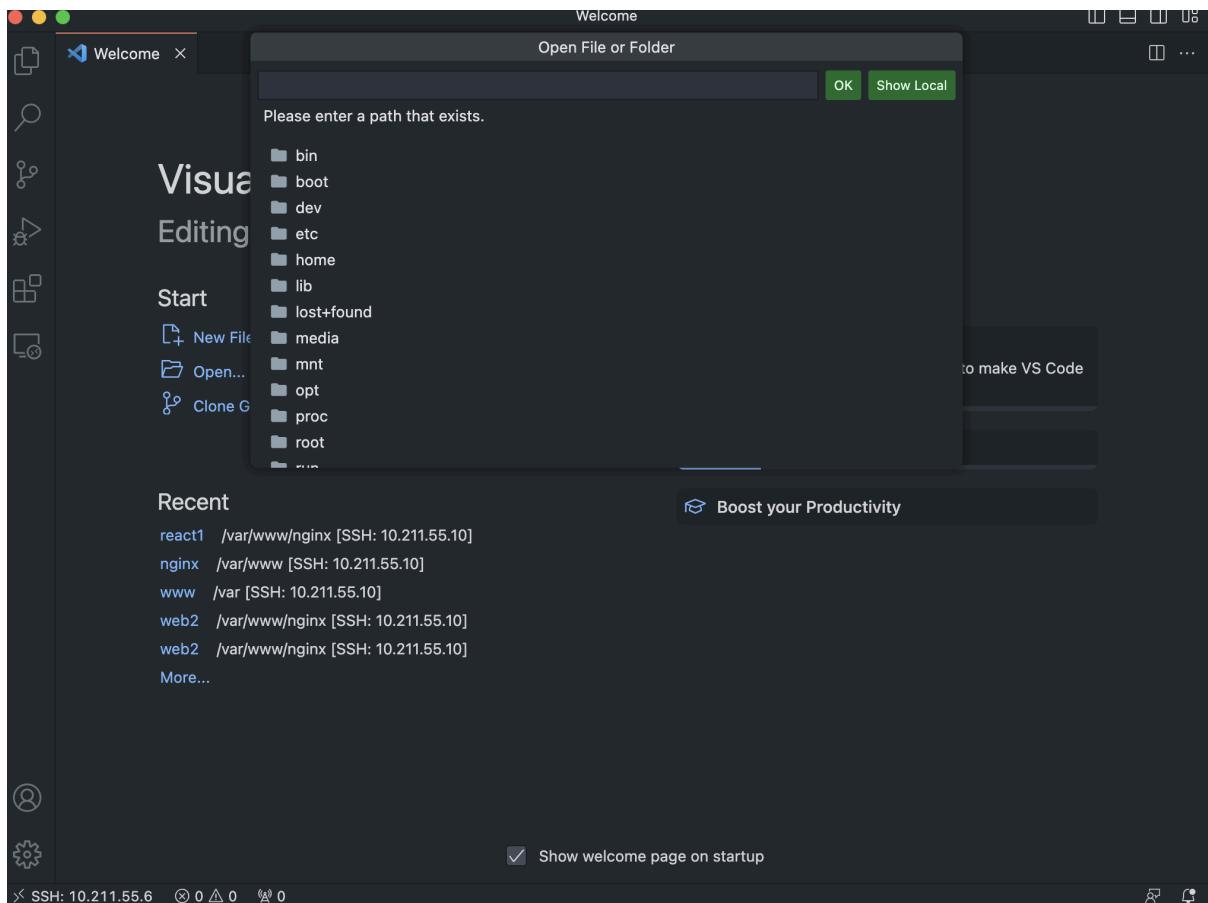
STEP4

Connect VS Code ทาง SSH มาที่ Server ทั้ง 2 ตัวนี้ (**backend1** และ **backend2**)

BACKEND1



BACKEND2

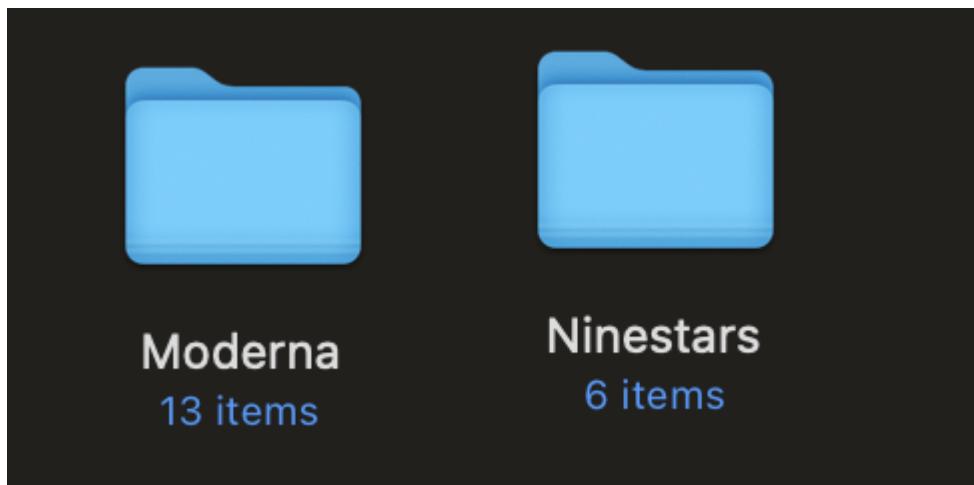


Step 5

STEP5 (ถ้ามีแล้วให้ข้ามไป)

Download web template จากที่นี่ มาที่เครื่องตัวเอง ตาม ใจชอบ
เพื่อที่จะใช้ในการทำงานมานคนละ 2 template

<https://bootstrapmade.com/free-website-templates/>



Step 6

STEP6 ติดตั้งที่ backend1

6.1 ติดตั้ง web template (template ที่1) ที่ได้มาจาก step5 ทำงานบน Apache ที่
/var/www/apache/web1
และทำงานที่ port 80 โดยเข้าถึงจากเครื่องภายนอกที่ url
web1.backend1.com

6.2 ติดตั้ง web template (template ที่2) ที่ได้มาจาก step5 ทำงานบน Nginx ที่
/var/www/nginx/web2
และทำงานที่ port 81 โดยเข้าถึงจากเครื่องภายนอกที่ url
web2.backend1.com:81

6.1

```
devuser@backend1-66543210030:~$ cd /etc/apache2/sites-available/
devuser@backend1-66543210030:/etc/apache2/sites-available$ ls
000-default.conf default-ssl.conf lab2.conf web1.conf your_domain.conf your_lab2.conf
devuser@backend1-66543210030:/etc/apache2/sites-available$ sudo nano 000-default.conf
devuser@backend1-66543210030:/etc/apache2/sites-available$
```

ใช้ a2ensite เพื่อเปิดใช้งานโฉสต์แลมีอนใหม่:

sudo a2ensite web1

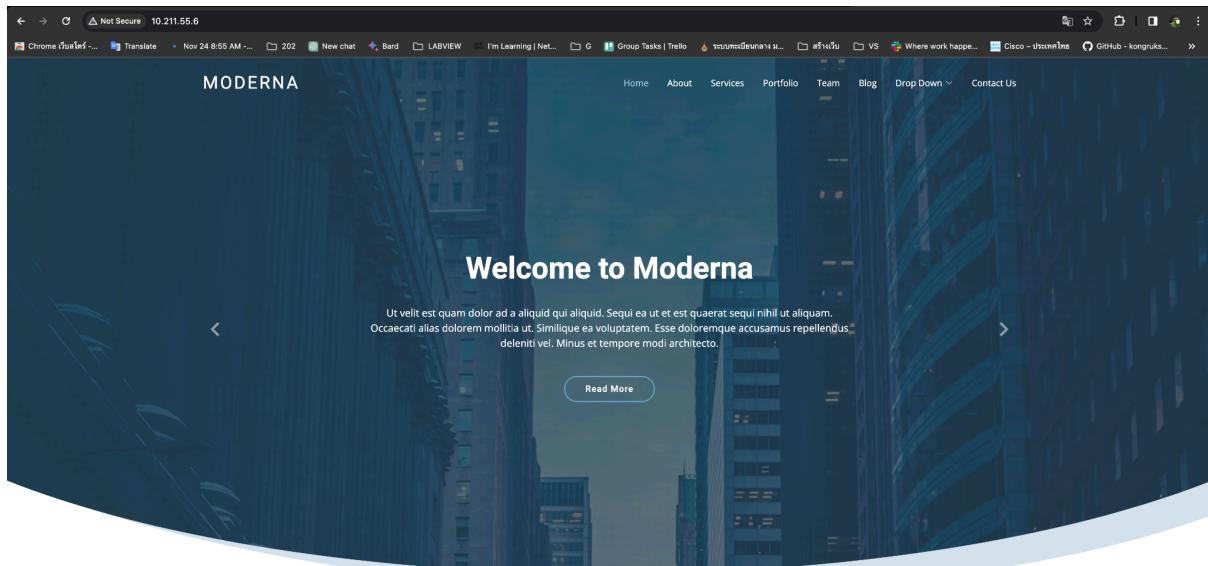
ปิดการใช้งานเว็บไซต์เริ่มต้นที่ติดตั้งมาพร้อมกับ Apache สิ่งนี้จำเป็นหากคุณไม่ได้ใช้อีโคเดเมนที่กำหนดเอง เนื่องจากในกรณีนี้การกำหนด

ค่าเริ่มต้นของ Apache จะแทนที่โดยสต็อปเมื่อตอนคุณ หากต้องการปิดใช้งานเว็บไซต์เริ่มต้นของ Apache ให้พิมพ์:

```
sudo a2dissite 000-default
```

```
sudo apache2ctl configtest
```

```
sudo systemctl reload apache2
```



6.2

คัดลอกไฟล์ Default และเปลี่ยนชื่อ

```
evuser@backend1-66543210030:/etc/nginx/sites-available$
```

```
sudo cp default web2
```

เข้าไปแก้ไขไฟล์

```
devuser@backend1-66543210030:/etc/nginx/sites-available
```

```
$ sudo nano web2
```

```
server {
    listen 81;
    listen [::]:81;
    server_name web2.backend1.com;
    root /var/www/nginx/web2;

    location / {
        proxy_pass http://127.0.0.1:81; # !!! - change to your app port
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

ทำการทดสอบ

```
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
```

```
devuser@backend1-66543210030:/etc/nginx/sites-available
$ sudo systemctl restart nginx
```

← → G Not Secure web2.backend1.com:81

Chrome เรียนรู้... Translate Nov 24 8:55 AM - ... 202 New chat Bard LABVIEW I'm Learning | Net... G »

Ninestars Home About Us Services Portfolio Team Drop Down Contact Get Started

The screenshot shows a website for 'Ninestars'. The header includes a navigation bar with links for Home, About Us, Services, Portfolio, Team, Drop Down, Contact, and a prominent orange 'Get Started' button. Below the header, there's a large section with the text 'Bettter digital experience with Ninestars' and a subtext 'We are team of talented designers making websites with Bootstrap'. To the right of the text is a stylized illustration of a blue rocket launching from a base, with a person sitting cross-legged nearby holding a smartphone. A 'Get Started' button is also present in this section.

**Voluptatem dignissimos
provident quasi**

Step 7

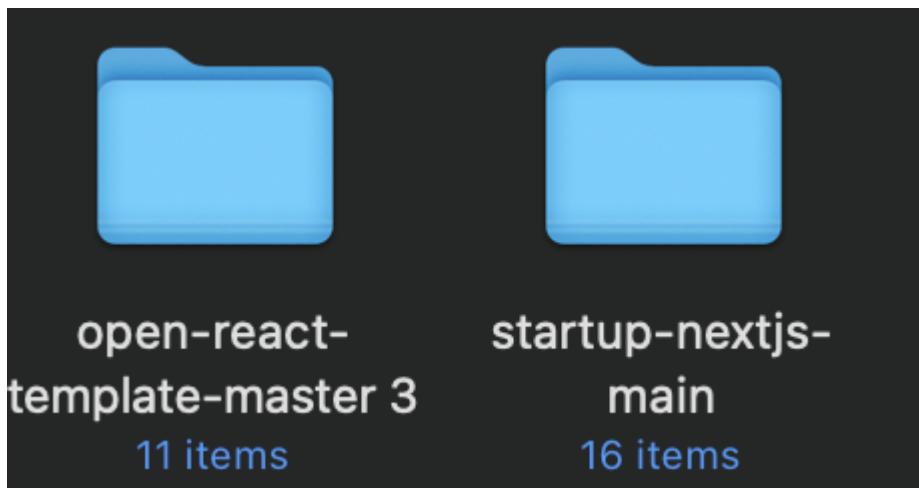
STEP7 ติดตั้งที่ backend1

Download React template จากที่นี่ มาที่เครื่องตัวเอง ตามใจชอบ
เพื่อที่จะใช้ในการทำงานมาคนละ 2 template

<https://mui.com/store/collections/free-react-dashboard/>

<https://uideck.com/blog/free-react-templates/>

<https://dev.to/davidepacilio/35-free-react-templates-and-themes-32ci>



Step 8

STEP8 ติดตั้งที่ backend1

8.1 ติดตั้ง React template (template ที่1) ที่ได้มาจากการ step7 ทำงานบน Nginx ที่
/var/www/nginx/react1
และทำงานที่ port 3010 โดยเข้าถึงจากเครื่องภายนอกที่ url
react1.backend1.com

8.2 ติดตั้ง React template (template ที่2) ที่ได้มาจากการ step7 ทำงานบน Nginx ที่
/var/www/nginx/react2
และทำงานที่ port 3011 โดยเข้าถึงจากเครื่องภายนอกที่ url
react2.backend1.com

8.1

```
devuser@backend1-66543210030:/var/www/nginx$ git  
clone https://github.com/soumyajit4419/Portfolio
```

```
devuser@backend1-66543210030:/var/www/nginx$ sudo  
mv Portfolio react1
```

```
devuser@backend1-66543210030:/var/www/nginx/react1$  
cd react1  
devuser@backend1-66543210030:/var/www/nginx/react1$  
npm install  
devuser@backend1-66543210030:/var/www/nginx/react1$  
npm i  
devuser@backend1-66543210030:/var/www/nginx/react1$  
npm start
```

```
Compiled successfully!  
  
You can now view portfolio in the browser.  
  
  Local:          http://localhost:3000  
  On Your Network: http://10.211.55.6:3000  
  
Note that the development build is not optimized.  
To create a production build, use npm run build.  
  
assets by path static/media/ 1.96 MiB  
  assets by info 1.85 MiB [immutable]  
    assets by path static/media/*.png 1.77 MiB 7 assets  
      asset static/media/Soumyajit_Behera-BIT_MESRA.b67bc39ea73918d153fd.pdf 48.3 KiB [emitted] [immutable] [from: src/Assets/Soumyajit_Behera-BIT_MESRA.pdf] (auxiliary name: main)  
      asset static/media/home-bg.d52d5d40a40b13154b0.jpg 31.4 KiB [emitted] [immutable] [from: src/Assets/home-bg.jpg] (auxiliary name: main)  
    )  
    asset static/media/pre.d4912f51c8c80976eaab.svg 1.88 KiB [emitted] [immutable] [from: src/Assets/pre.svg] (auxiliary name: main)  
    asset static/media/home-main.541f8179af8209ce03ccf2178fe62dbf.svg 108 KiB [emitted] (auxiliary name: main)  
    asset static/media/avatar.5852f40fb38aa284829fa3fb7722225.svg 12.6 KiB [emitted] (auxiliary name: main)  
  assets by path static/js/*.js 19.2 MiB  
    asset static/js/bundle.js 19.2 MiB [emitted] (name: main) 1 related asset  
    asset static/js/vendors-node_modules_tsparticles_esm_Plugins_PolygonMask_pathseg_js.chunk.js 59.4 KiB [emitted] (id hint: vendors) 1 related asset  
    asset static/js/node_modules_web-vitals_dist_web-vitals_js.chunk.js 6.92 KiB [emitted] 1 related asset  
  asset index.html 1.86 KiB [emitted]  
  asset asset-manifest.json 1.81 KiB [emitted]  
orphan modules 246 KiB [orphan] 170 modules  
runtime modules 32.5 KiB 16 modules  
modules by path ./node_modules/ 16.9 MiB 629 modules  
modules by path ./src/ 264 KiB (javascript) 1.85 MiB (asset)  
  javascript modules 259 KiB 27 modules  
  asset modules 5.03 KiB (javascript) 1.85 MiB (asset) 11 modules  
modules by mime type image/svg+xml 4.4 KiB  
  data:image/svg+xml,%3csvg xmlns=%27.. 281 bytes [built] [code generated]  
  data:image/svg+xml,%3csvg xmlns=%27.. 279 bytes [built] [code generated]  
  data:image/svg+xml,%3csvg xmlns=%27.. 161 bytes [built] [code generated]  
  + 13 modules  
  + 6 modules  
webpack 5.70.0 compiled successfully in 17555 ms
```

ทำการแก้ PONT 3000 เป็น 3010

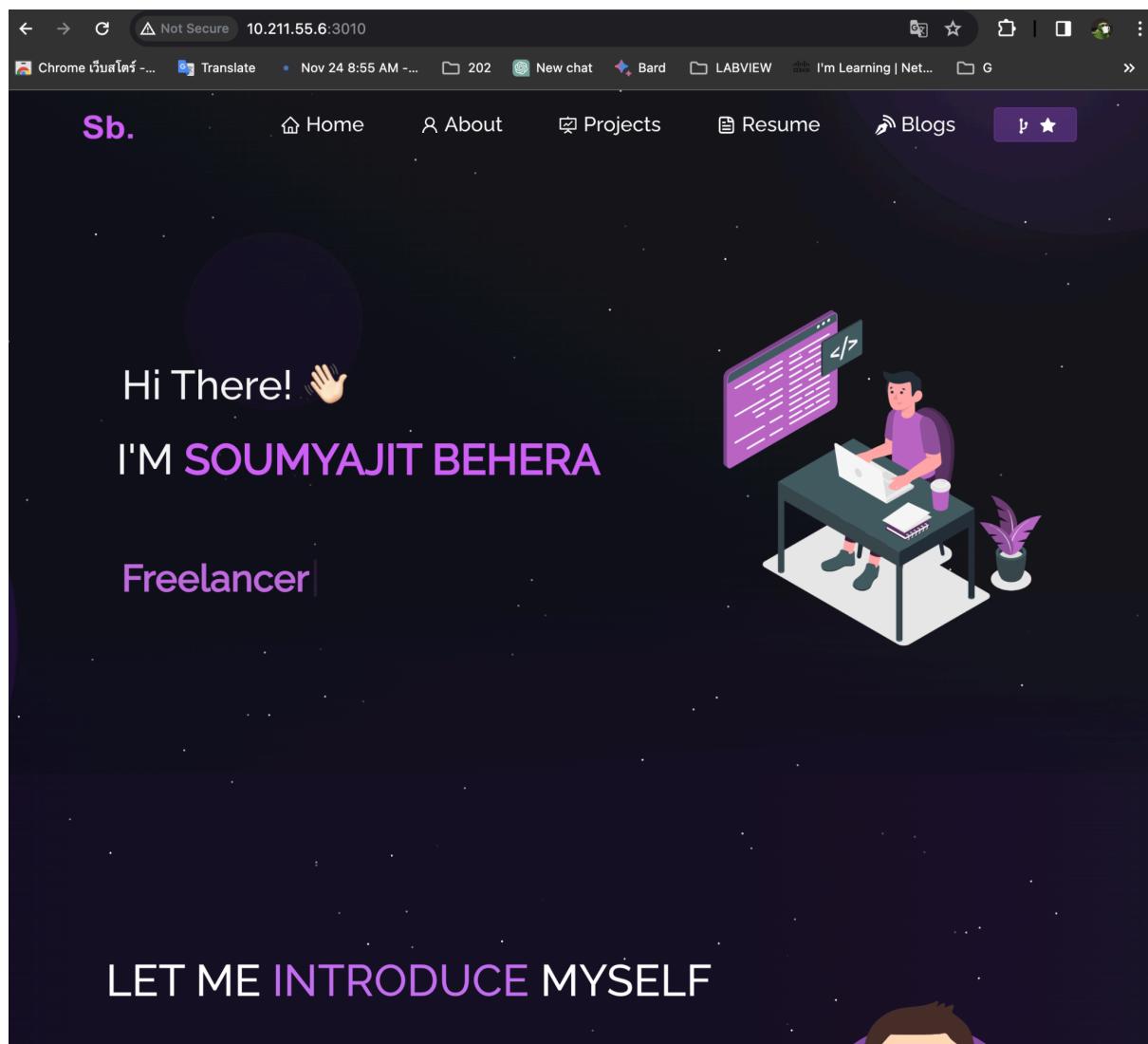
```
▷ Debug
"scripts": {
  "start": "PORT=3010 react-scripts start",
  "build": "react-scripts build",
  "test": "react-scripts test",
  "eject": "react-scripts eject"
},
"eslintConfig": {
```

devuser@backend1-66543210030:/var/www/nginx/react1\$

sudo ufw allow 3010

devuser@backend1-66543210030:/var/www/nginx/react1\$

npm start



8.2

```
devuser@backend1-66543210030:/var/www/nginx$ git  
clone https://github.com/saadpasta/developerFolio
```

```
devuser@backend1-66543210030:/var/www/nginx$ sudo  
mv developerFolio react2
```

```
devuser@backend1-66543210030:/var/www/nginx/react1$  
cd react1  
devuser@backend1-66543210030:/var/www/nginx/react1$  
npm install  
devuser@backend1-66543210030:/var/www/nginx/react1$  
npm i  
devuser@backend1-66543210030:/var/www/nginx/react1$  
npm start
```

```
Compiled successfully!  
  
You can now view developerfolio in the browser.  
  
Local: http://localhost:3000  
On Your Network: http://10.211.55.6:3000  
  
Note that the development build is not optimized.  
To create a production build, use npm run build.  
  
webpack compiled successfully
```

ทำการเปลี่ยน PONT

```
"scripts": {  
  "predeploy": "npm run build",  
  "start": "PORT=3011 node fetch.js && react-scripts start",  
  "build": "node fetch.js && react-scripts build",  
  "deploy": "gh-pages -b master -d build",  
  "test": "react-scripts test",  
  "eject": "react-scripts eject",  
  "format": "prettier --write \"./**/*.{js,css,json,scss}\"",  
  "check-format": "prettier -c \"./**/*.{js,css,json,scss}\""  
},
```

แก้เป็น

```
"start": "PORT=3011 react-scripts start",
```

devuser@backend1-66543210030:/var/www/nginx/react2\$
sudo ufw allow 3011

devuser@backend1-66543210030:/var/www/nginx/react2\$
cd /etc/nginx/sites-available

devuser@backend1-66543210030:/etc/nginx/sites-available
\$ sudo cp react1 react2
devuser@backend1-66543210030:/etc/nginx/sites-available
\$ sudo nano react2

```
GNU nano 6.2                                         react2
server {
    listen 81;
    listen [::]:81;
    server_name react2.backend1.com;
    root /var/www/nginx/react2;

    location / {
        proxy_pass http://127.0.0.1:3011; # !!! - change to your app port
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

devuser@backend1-66543210030:/etc/nginx/sites-available
\$ sudo nano react1
devuser@backend1-66543210030:/etc/nginx/sites-available
\$ sudo nano react1

```
devuser@backend1-66543210030:/etc/nginx/sites-available
$ sudo systemctl restart nginx
devuser@backend1-66543210030:/etc/nginx/sites-available
$ cd /var/www/nginx/react2
devuser@backend1-66543210030:/var/www/nginx/react2$
npm start
```

The screenshot shows a developer's portfolio website with a dark theme. At the top, there is a navigation bar with links to Skills, Work Experiences, Open Source, Achievements, Blogs, and Talks. Below the navigation, there is a signature placeholder and a "Contact Me" button with a toggle switch. The main content area features a large heading "Hi all, I'm Saad 🙌" and a bio describing the developer as a Full Stack Software Developer with experience in building Web and Mobile applications using various frameworks like JavaScript, Reactjs, Nodejs, and React Native. To the right of the bio is a stylized illustration of a person in a white shirt and purple pants, standing next to a target and clouds, with a small bee flying nearby. At the bottom, there are social media icons for GitHub, LinkedIn, Email, GitLab, Facebook, Medium, and YouTube, along with "CONTACT ME" and "SEE MY RESUME" buttons. A small bee icon is also present at the bottom left.

Not Secure 10.211.55.6:3011

Chrome เว็บไซต์ ... Translate Nov 24 8:55 AM ... 202 New chat Bard LABVIEW I'm Learning | Net... G

< Saad El Dastor /> Skills Work Experiences Open Source Achievements Blogs Talks

Contact Me

Hi all, I'm Saad 🙌

A passionate Full Stack Software Developer 🚀 having an experience of building Web and Mobile applications with JavaScript / Reactjs / Nodejs / React Native and some other cool libraries and frameworks.

CONTACT ME SEE MY RESUME

What I do

Step 9

```
backend030@backend2-66543210030:/etc/nginx/sites-available$ sudo ufw allow 4040
```

```
app.listen(4040, () => {
  console.log("running server");
});|
```

```
backend030@backend2-66543210030:~$ cd /etc/nginx/sites-available/
backend030@backend2-66543210030:/etc/nginx/sites-available$ sudo cp default backend2
backend030@backend2-66543210030:/etc/nginx/sites-available$ sudo nano backend2
```

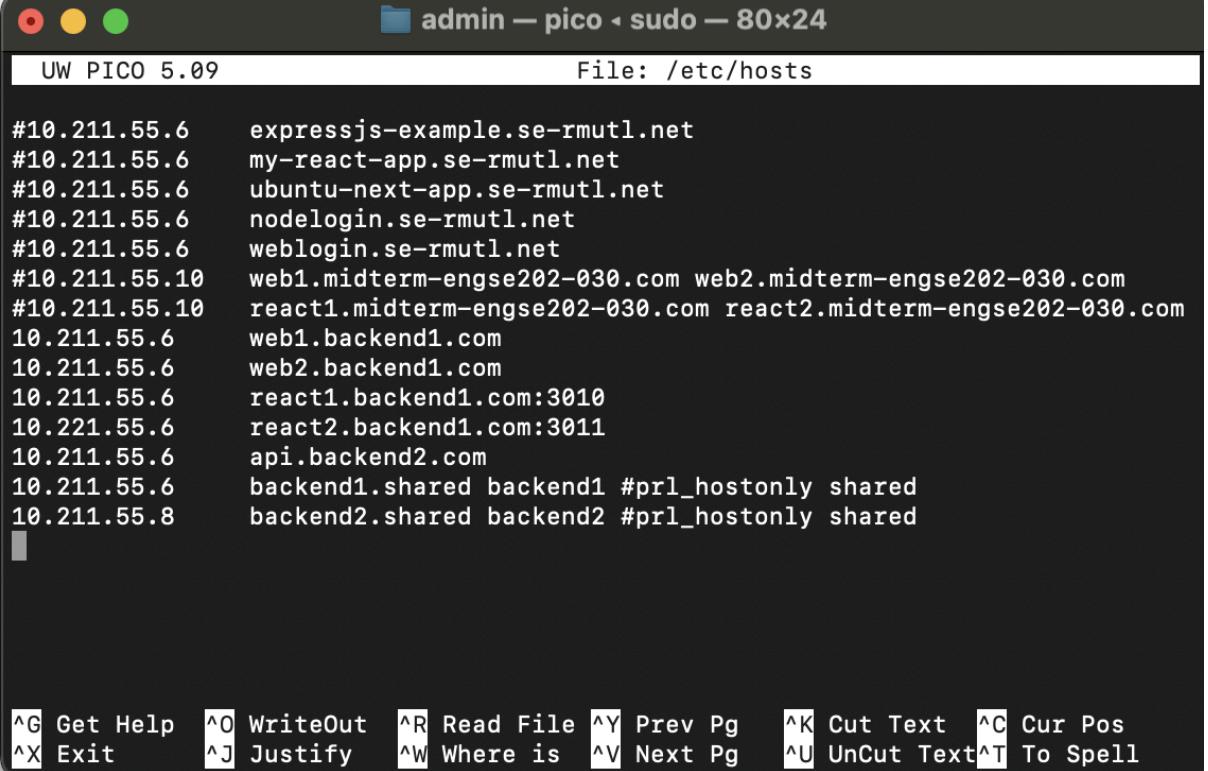
```
GNU nano 6.2                                     backend2
server {
    listen 81;
    listen [::]:81;
    server_name api.backend2.com;

    location / {
        proxy_pass http://127.0.0.1:4040; # !!! - change to your app port
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

```
backend030@backend2-66543210030:/etc/nginx/sites-available$ systemctl restart nginx.service
```

```
backend030@backend2-66543210030:/etc/nginx/sites-available$ systemctl restart nginx.service
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
Authentication is required to restart 'nginx.service'.
Multiple identities can be used for authentication:
 1. boss (backend030)
 2. Boss030,,, (boss)
 3. boss030,,, (boss030)
 4. supalerk aryuyuen,,, (supalerk)
Choose identity to authenticate as (1-4): 4
Password:
==== AUTHENTICATION COMPLETE ===
backend030@backend2-66543210030:/etc/nginx/sites-available$
```

เพิ่มโดเมนต่อ



The screenshot shows a terminal window titled "admin — pico - sudo — 80x24". The title bar also includes "File: /etc/hosts". The main area of the terminal displays the contents of the /etc/hosts file:

```
#10.211.55.6 expressjs-example.se-rmutil.net
#10.211.55.6 my-react-app.se-rmutil.net
#10.211.55.6 ubuntu-next-app.se-rmutil.net
#10.211.55.6 nodelogin.se-rmutil.net
#10.211.55.6 weblogin.se-rmutil.net
#10.211.55.10 web1.midterm-engse202-030.com web2.midterm-engse202-030.com
#10.211.55.10 react1.midterm-engse202-030.com react2.midterm-engse202-030.com
10.211.55.6 web1.backend1.com
10.211.55.6 web2.backend1.com
10.211.55.6 react1.backend1.com:3010
10.221.55.6 react2.backend1.com:3011
10.211.55.6 api.backend2.com
10.211.55.6 backend1.shared backend1 #prl_hostonly shared
10.211.55.8 backend2.shared backend2 #prl_hostonly shared
```

At the bottom of the terminal window, there is a menu of keyboard shortcuts:

```
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Pg  ^K Cut Text  ^C Cur Pos
^X Exit      ^J Justify   ^W Where is  ^V Next Pg   ^U UnCut Text ^T To Spell
```

ให้รันแบบโดเมนโดยเข้าไปแก้พอร์ตใน server/index.js
origin: ["http://weblogin.se-rmutl.net"], => origin:
["http://api.backend2.com"],

```
});  
app.use(express.json());  
app.use(  
  cors({  
    origin: ["http://api.backend2.com"],  
    methods: ["GET", "POST"],  
    credentials: true,  
  })  
);
```

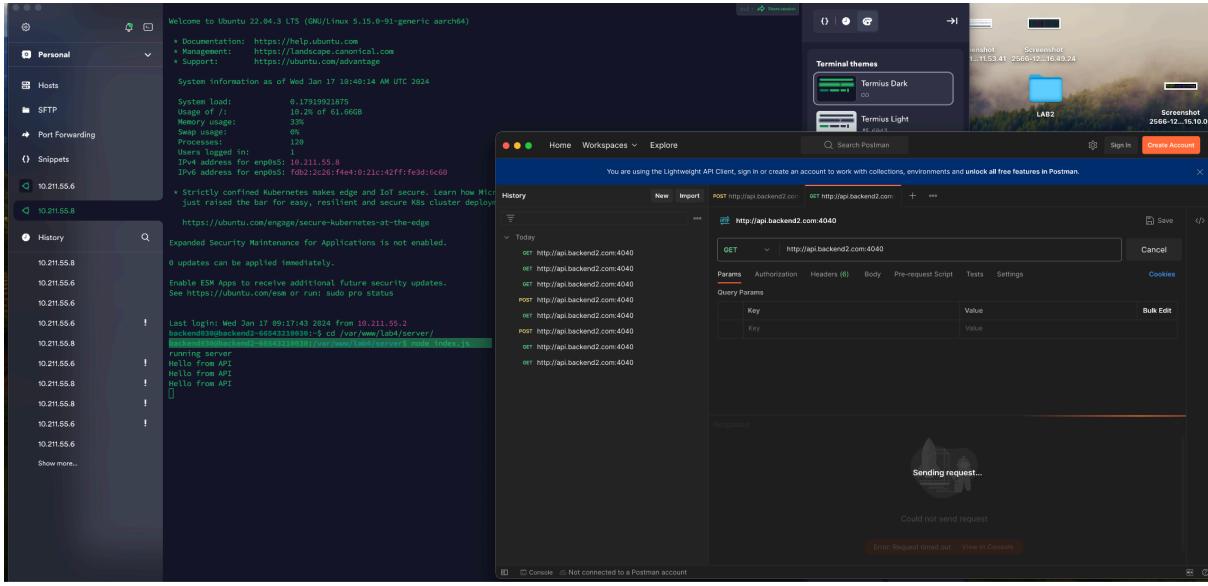
Step 10

backend030@backend2-66543210030:/var/www/lab4/serve
r\$ node index.js

```
backend030@backend2-66543210030:/var/www/lab4/server$ node index.js  
running server
```

POSTman : http://api.backend2.com:4040

GET



POST

You are using the Lightweight API Client, sign in or create an account to work with collections, environments and unlock all free features in Postman.

History

POST http://api.backend2.com:4040

Params Authorization Headers (7) Body Pre-request Script Tests Settings Cookies

Query Params

Key	Value
Key	Value

Body Cookies Headers (10) Test Results

Pretty Raw Preview Visualize HTML

```

1 <!DOCTYPE html>
2 <html lang="en">
3 
4 <head>
5   <meta charset="utf-8">
6   <title>Error</title>
7 </head>
8 
9 <body>
10  <pre>Cannot POST /</pre>

```

404 Not Found 13 ms 466 B Save Response

Console Not connected to a Postman account

Step 11

STEP11 ติดตั้งที่ backend1

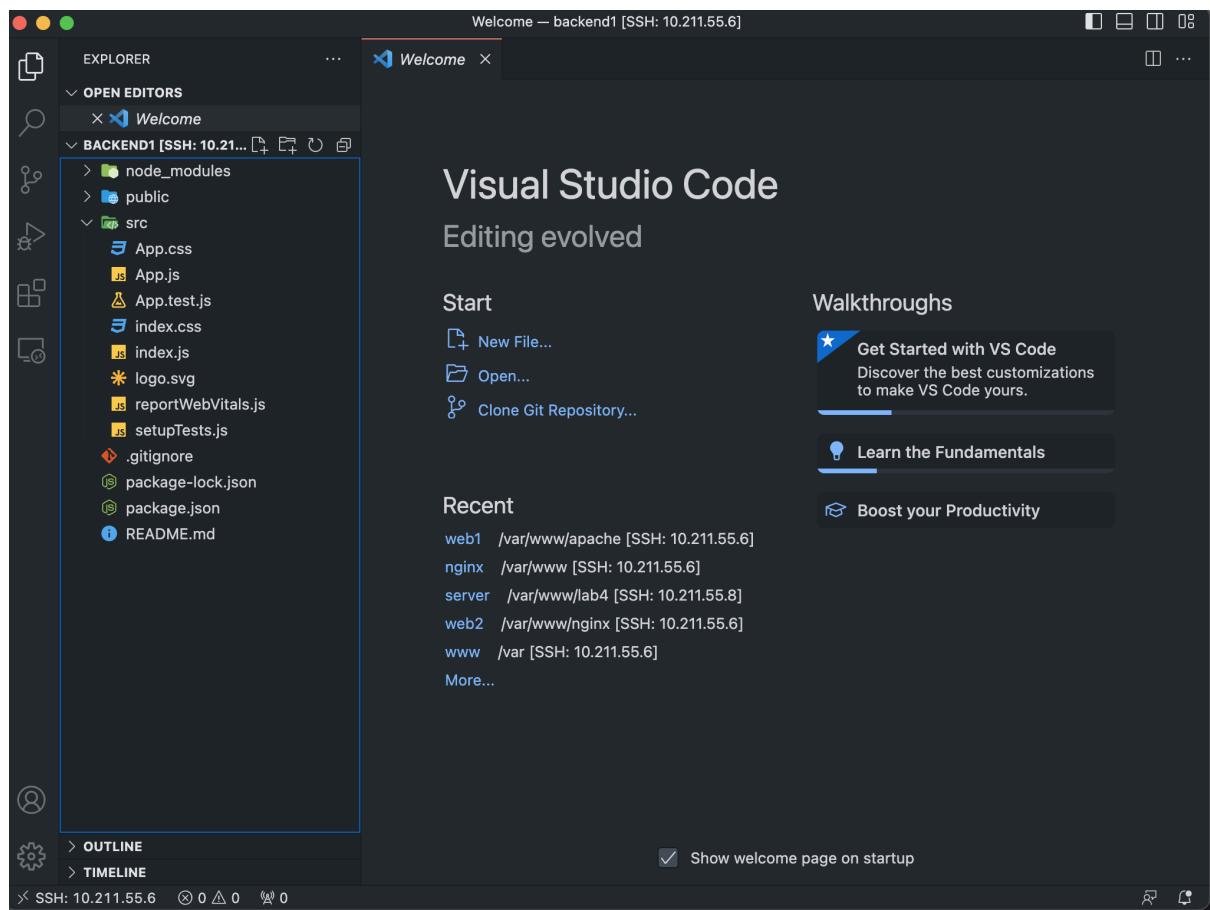
จากบทความข้างล่าง ให้ติดตั้ง Client Code บนเครื่อง backend1

**ใช้ code เลพะ Front-end เท่านั้น

```
devuser@backend1-66543210030:~$ cd /var/www/nginx  
devuser@backend1-66543210030:/var/www/nginx$ mkdir  
backend1  
devuser@backend1-66543210030:/var/www/nginx$ cd  
backend1  
devuser@backend1-66543210030:/var/www/nginx/backend  
1$ npx create-react-app .
```

```
Last login: Wed Jan 17 07:12:26 2024 from 10.211.55.2  
devuser@backend1-66543210030:~$ cd /var/www/nginx  
devuser@backend1-66543210030:/var/www/nginx$ ls  
react1 react2 web2  
devuser@backend1-66543210030:/var/www/nginx$ mkdir backend1  
devuser@backend1-66543210030:/var/www/nginx$ cd backend1  
devuser@backend1-66543210030:/var/www/nginx/backend1$ npx create-react-app .
```

ทำการรีโมทเข้า VS CODE



นำ source code เข้ามา

client/src/App.js แก้พอร์ตเป็น 4040

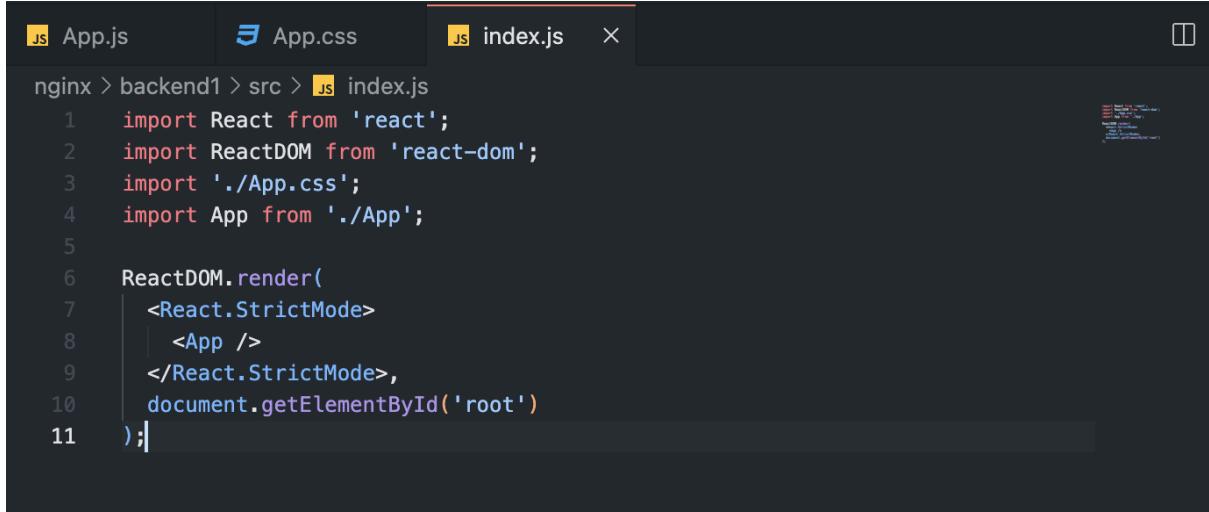
```
const register = () => {
  Axios.post("http://localhost:4040/register", {
    username: usernameReg,
    password: passwordReg,
  }).then((response) => {
    console.log(response);
  });
};

const login = () => {
  Axios.post("http://localhost:4040/login", {
    username: username,
    password: password,
  }).then((response) => {
    if (!response.data.message) {
      setLoginStatus( response.data.message);
    } else {
      setLoginStatus (response.data[0].message);
    }
  });
};
```

client/src/App.css

```
.App {  
  text-align: center;  
}  
  
.registration {  
  display: flex;  
  flex-direction: column;  
  justify-content: center;  
  align-items: center;  
}  
  
.login {  
  display: flex;  
  flex-direction: column;  
  justify-content: center;  
  align-items: center;  
}  
input {  
  width: 250px;  
  height: 40px;  
}
```

client/src/index.js



The screenshot shows a terminal window with three tabs open: App.js, App.css, and index.js. The index.js tab is active and displays the following code:

```
nginx > backend1 > src > index.js
1 import React from 'react';
2 import ReactDOM from 'react-dom';
3 import './App.css';
4 import App from './App';
5
6 ReactDOM.render(
7   <React.StrictMode>
8     <App />
9   </React.StrictMode>,
10  document.getElementById('root')
11 );
```

```
sudo mkdir -p /var/www/nginx/login
cd /var/www/nginx/login/
sudo chown -R $USER:$USER /var/www/nginx/login/
npx create-react-app .
npm i --save axios
npm install express --save
npm install --save mysql2
npm i --save cors
```

```
devuser@backend1-66543210030:/var/www/nginx/login$ ls
node_modules  package.json  package-lock.json  public  README.md  src
devuser@backend1-66543210030:/var/www/nginx/login$ █
```

นำ source code เข้ามา

```
App.js — www [SSH: 10.211.55.6]
nginx > login > src > App.js > App > login
1 import React, { useEffect, useState } from "react";
2 import Axios from 'axios';
3 import './App.css';
4
5 function App() {
6
7     const [usernameReg, setUsernameReg] = useState("");
8     const [passwordReg, setPasswordReg] = useState ("");
9
10    const [username, setUsername] = useState("");
11    const [password, setPassword] = useState ("");
12
13    const [loginStatus, setLoginStatus] = useState("");
14
15    const register = () => {
16        Axios.post("http://localhost:4040/register",
17            {
18                username: usernameReg,
19                password: passwordReg,
20            }).then((response) => {
21                console.log(response);
22            });
23    };
24
25    const login = () => {
26        Axios.post("http://localhost:4040/login",
27            {
28                username: username,
29                password: password,
30            }).then((response) => {
31                if (!response.data.message) {
32                    setLoginStatus( response.data.message);
33                } else {
34                    setLoginStatus (response.data[0].message);
35                }
36            });
37    };
38
39    return (
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
59
60
61
62
63
64
65
66
67
68
69
69
70
71
72
73
74
75
76
77
78
79
79
80
81
82
83
84
85
86
87
88
89
89
90
91
92
93
94
95
96
97
98
99
99
100
101
102
103
104
105
106
107
108
109
109
110
111
112
113
114
115
116
117
118
119
119
120
121
122
123
124
125
126
127
128
129
129
130
131
132
133
134
135
136
137
137
138
139
139
140
141
142
143
144
145
145
146
147
147
148
149
149
150
151
152
153
154
155
155
156
157
157
158
159
159
160
161
162
163
164
165
166
167
168
169
169
170
171
172
173
174
175
176
177
178
179
179
180
181
182
183
184
185
186
187
188
189
189
190
191
192
193
194
195
196
197
198
199
199
200
201
202
203
204
205
206
207
208
209
209
210
211
212
213
214
215
216
217
218
219
219
220
221
222
223
224
225
226
227
228
229
229
230
231
232
233
234
235
236
237
238
239
239
240
241
242
243
244
245
246
247
247
248
249
249
250
251
252
253
254
255
256
257
258
259
259
260
261
262
263
264
265
266
267
267
268
269
269
270
271
272
273
274
275
276
277
277
278
279
279
280
281
282
283
284
285
286
287
287
288
289
289
290
291
292
293
294
295
296
297
297
298
299
299
300
301
302
303
304
305
306
307
307
308
309
309
310
311
312
313
314
315
316
317
317
318
319
319
320
321
322
323
324
325
326
327
327
328
329
329
330
331
332
333
334
335
336
337
337
```

Ln 25, Col 38 Spaces: 2 UTF-8 LF ⌂ JavaScript ⌂ ⌂ ⌂

```
index.js — www [SSH: 10.211.55.6]
nginx > login > src > index.js
1 import React from 'react';
2 import ReactDOM from 'react-dom';
3 import './App.css';
4 import App from './App';
5
6 ReactDOM.render(
7     <React.StrictMode>
8         <App />
9     </React.StrictMode>,
10    document.getElementById('root')
11 );
12 |
```

The screenshot shows a code editor with three tabs at the top: App.js, index.js, and App.css. The App.css tab is active, displaying the following CSS code:

```
nginx > login > src > App.css > input
1 .App {
2     text-align: center;
3 }
4
5 .registration {
6     display: flex;
7     flex-direction: column;
8     justify-content: center;
9     align-items: center;
10 }
11
12 .login {
13     display: flex;
14     flex-direction: column;
15     justify-content: center;
16     align-items: center;
17 }
18 input {
19     width: 250px;
20     height: 40px;
21 }
```

เปลี่ยน PORT = 3012

The screenshot shows a terminal window with a JSON configuration file. The 'scripts' section is highlighted in orange, containing the following commands:

```
▷ Debug
"scripts": {
  "start": "PORT = 3012 react-scripts start",
  "build": "react-scripts build",
  "test": "react-scripts test",
  "eject": "react-scripts eject"
},
```

sudo ufw allow 3012 (อนุญาติ port 3012)

devuser@backend1-66543210030:/var/www/nginx/login\$

sudo ufw allow 3012

```
devuser@backend1-66543210030:/var/www/nginx/login$ sudo ufw allow 3012
Rule added
Rule added (v6)
devuser@backend1-66543210030:/var/www/nginx/login$
```

```
devuser@backend1-66543210030:/var/www/nginx/login$ cd /etc/nginx/sites-available
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo cp default login
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo nano login
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo systemctl
restart nginx
```

```
devuser@backend1-66543210030:/var/www/nginx/login$ cd /etc/nginx/sites-available
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo cp default login
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo nano login
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo systemctl restart nginx
devuser@backend1-66543210030:/etc/nginx/sites-available$
```

```
GNU nano 6.2                                     login
server {
    listen 81;
    listen [::]:81;
    server_name login.backend1.com;

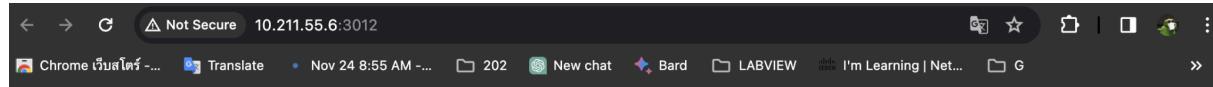
    location / {
        proxy_pass http://127.0.0.1:3012; # !!! - change to your app port
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

```
sudo nano /etc/hosts
```

```
10.211.55.6      login.backend1.com
```

```
cd /var/www/nginx/login/
npm start
```

```
devuser@backend1-66543210030:/etc/nginx/sites-available$ sudo systemctl restart nginx
devuser@backend1-66543210030:/etc/nginx/sites-available$ cd /var/www/nginx/login/
devuser@backend1-66543210030:/var/www/nginx/login$ npm start
```



Registration

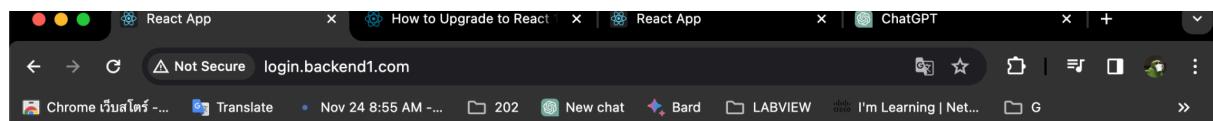
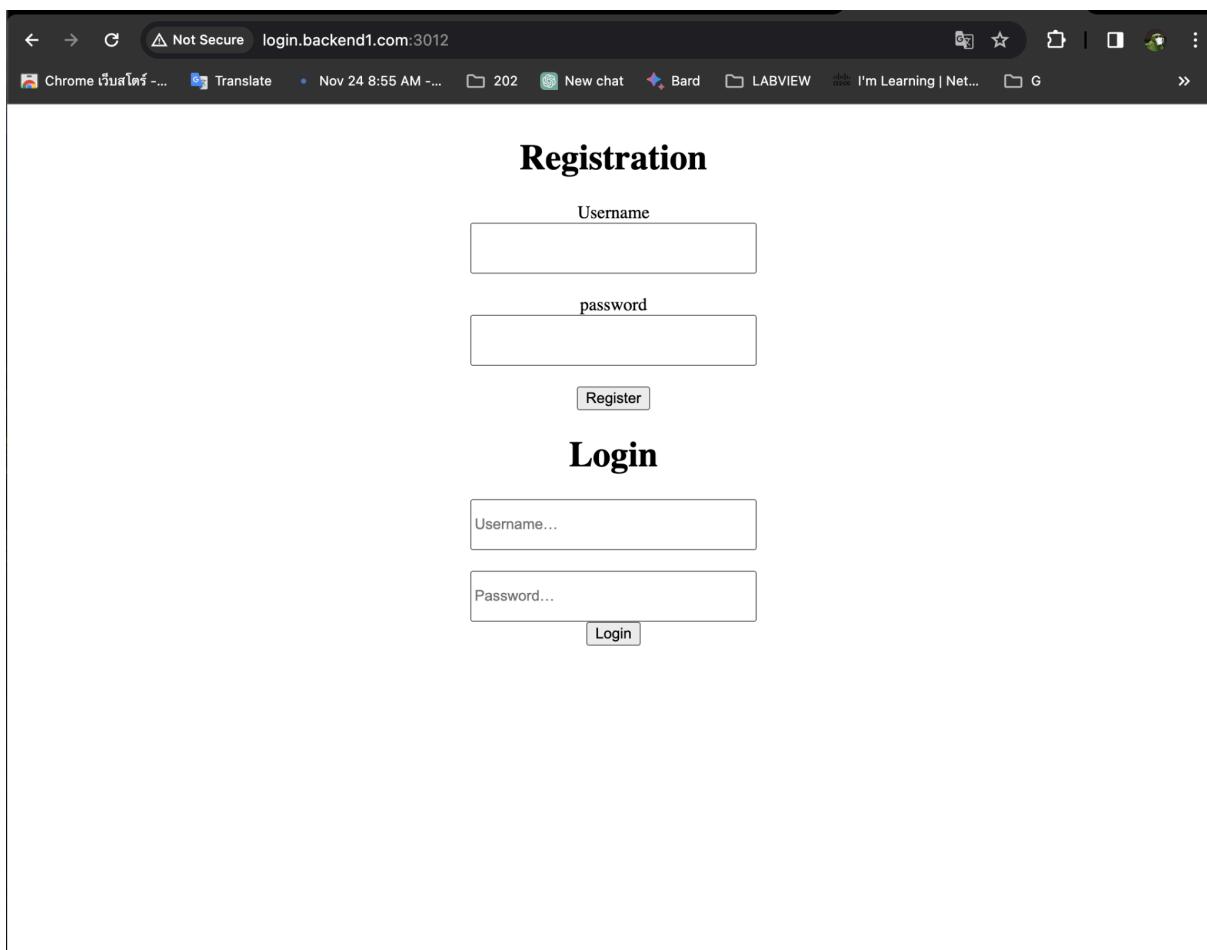
Username

password

Login

Username...

Password...



Registration

Username
password

Login

'werqwer' was inserted.



Registration

Username

password

Login

'test' was logged in.