

ENGSE203 LAB3

Step 6 Apache Web1&&Web2

ติดตั้ง web template ที่ /var/www/apache/web1

```
devuser@backend1-66543210033:/etc/nginx/sites-available$ cd /var/www/apache/web1
devuser@backend1-66543210033:/var/www/apache/web1$ ls
Imperial
```

cd /etc/apache2/sites-available/ เข้าไปในโฟลเดอร์ sites-available apache2
sudo cp 000-default.conf web1.conf คัดลอกไฟล์ default ของ apache2
sudo nano web1.conf เข้าไฟล์ web1 เพื่อแก้ไข

```
GNU nano 6.2
web1backend.conf
<VirtualHost *:80>
    ServerName web1
    ServerAlias web1.backend1.com
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/apache/web1
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

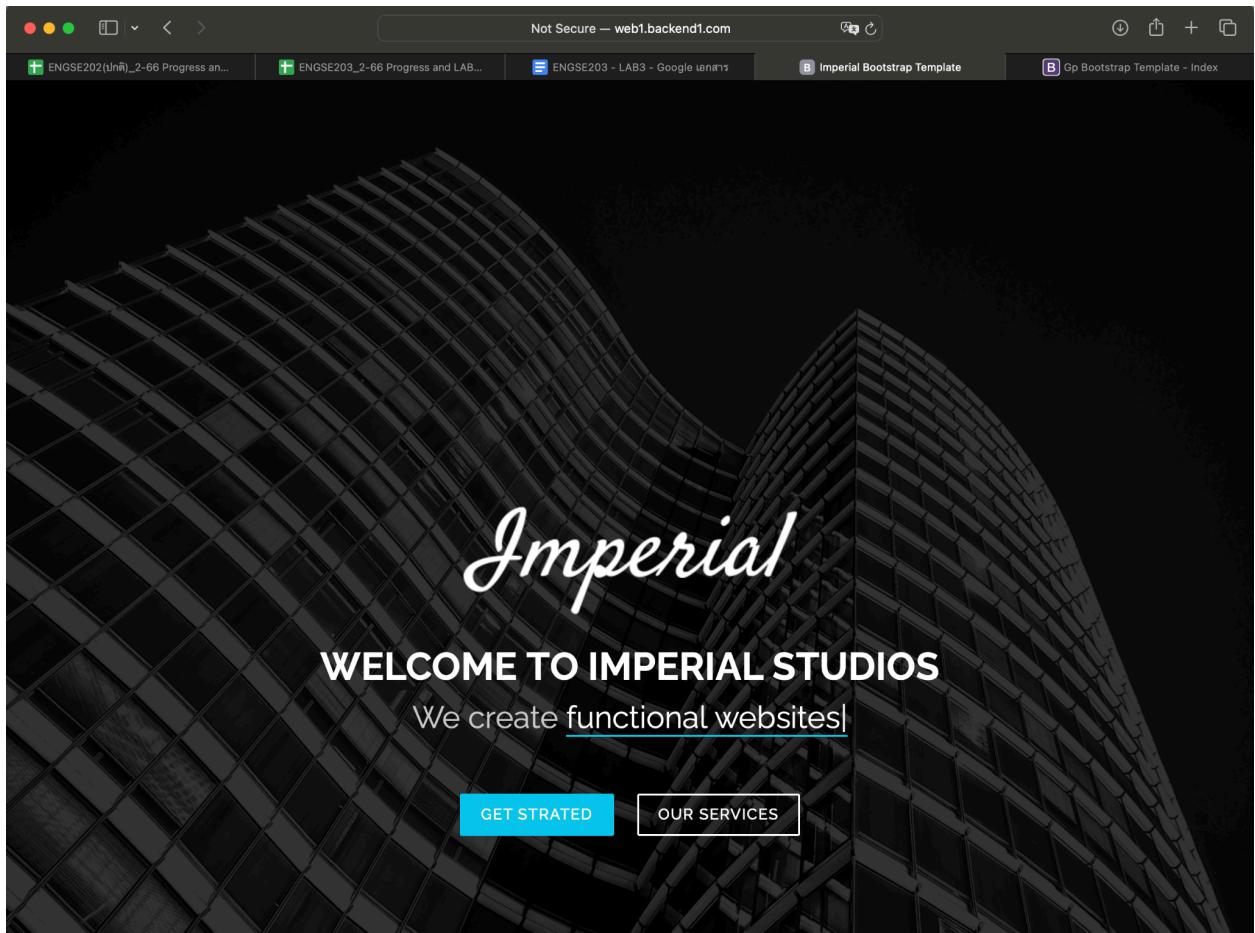
แก้ไข host เพิ่ม 10.211.55.4 web1.backend1.com

```
● ● ● admin — pico — sudo — 80x24
UW PICO 5.09 File: /etc/hosts

## 
# Host Database
#
# localhost is used to configure the loopback interface
# when the system is booting.  Do not change this entry.
##
127.0.0.1      localhost engse203.lab1
255.255.255.255 broadcasthost
::1            localhost
10.211.55.4    myapp.se-rmutil.net expressjs-example.se-rmutil.net
10.211.55.4    my-react-app.se-rmutil.net
10.211.55.4    ubuntu-next-app.se-rmutil.net
10.211.55.4    nodelogin.se-rmutil.net
10.211.55.4    weblogin.se-rmutil.net
10.211.55.6    web1.midterm-engse202-033.com
10.211.55.6    web2.midterm-engse202-033.com
10.211.55.6    react2.midterm-engse202-033.com
10.211.55.4    web1.backend1.com
10.211.55.4    web2.backend1.com

^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
```

ทดสอบการทำงาน web1



ติดตั้ง web template ที่ /var/www/apache/web2

```
devuser@backend1-66543210033:~$ cd /var/www/nginx/web2
devuser@backend1-66543210033:/var/www/nginx/web2$ ls
Gp
```

```
GNU nano 6.2                                     default *
server {
    listen 81;
    listen [::]:81;
    server_name web2.backend1.com;

    root /var/www/nginx/web2/Gp;
    index index.html index.htm index.html inde.php;
    location / {
        try_files $uri $uri/ =404;
    }
}
```

แก้ไข host เพิ่ม 10.211.55.4 web2.backend1.com

```
● ● ● admin — pico - sudo — 80x24
UW PICO 5.09                                     File: /etc/hosts

##                                     # Host Database
#
# localhost is used to configure the loopback interface
# when the system is booting.  Do not change this entry.
##
127.0.0.1      localhost engse203.lab1
255.255.255.255 broadcasthost
::1            localhost
10.211.55.4    myapp.se-rmutil.net expressjs-example.se-rmutil.net
10.211.55.4    my-react-app.se-rmutil.net
10.211.55.4    ubuntu-next-app.se-rmutil.net
10.211.55.4    nodelogin.se-rmutil.net
10.211.55.4    weblogin.se-rmutil.net
10.211.55.6    web1.midterm-engse202-033.com
10.211.55.6    web2.midterm-engse202-033.com
10.211.55.6    react2.midterm-engse202-033.com
10.211.55.4    web1.backend1.com
10.211.55.4    web2.backend1.com

^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
```

ทดสอบการทำงาน web2

Not Secure — web2.backend1.com

ENGSE202(Uni) 2-66 Progress an... ENGSE203_2-66 Progress and LAB... ENGSE203 - LAB3 - Google ภาษาไทย Imperial Bootstrap Template Gp Bootstrap Template - Index

GP.

Home About Services Portfolio Team Drop Down Contact Get Started

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>Lorem Ipsum

Dolor Sitema

Sedare Perspiciatis

Magni Dolores

Nemos Enimade

Step 8 React

ติดตั้ง Template ใน react1 react2

เข้าไปในไฟล์ package.json ของ react1 และ react2 เพิ่ม port 3010 (react1) และ port 3011 (react2)

cd /etc/nginx/sites-available

sudo nano react1 **เข้าไปยังไฟล์เพื่อแก้ไข**

```
GNU nano 6.2                                                 react1
server {
    listen 81;
    listen [::]:81;
    server_name react1.backend1.com;

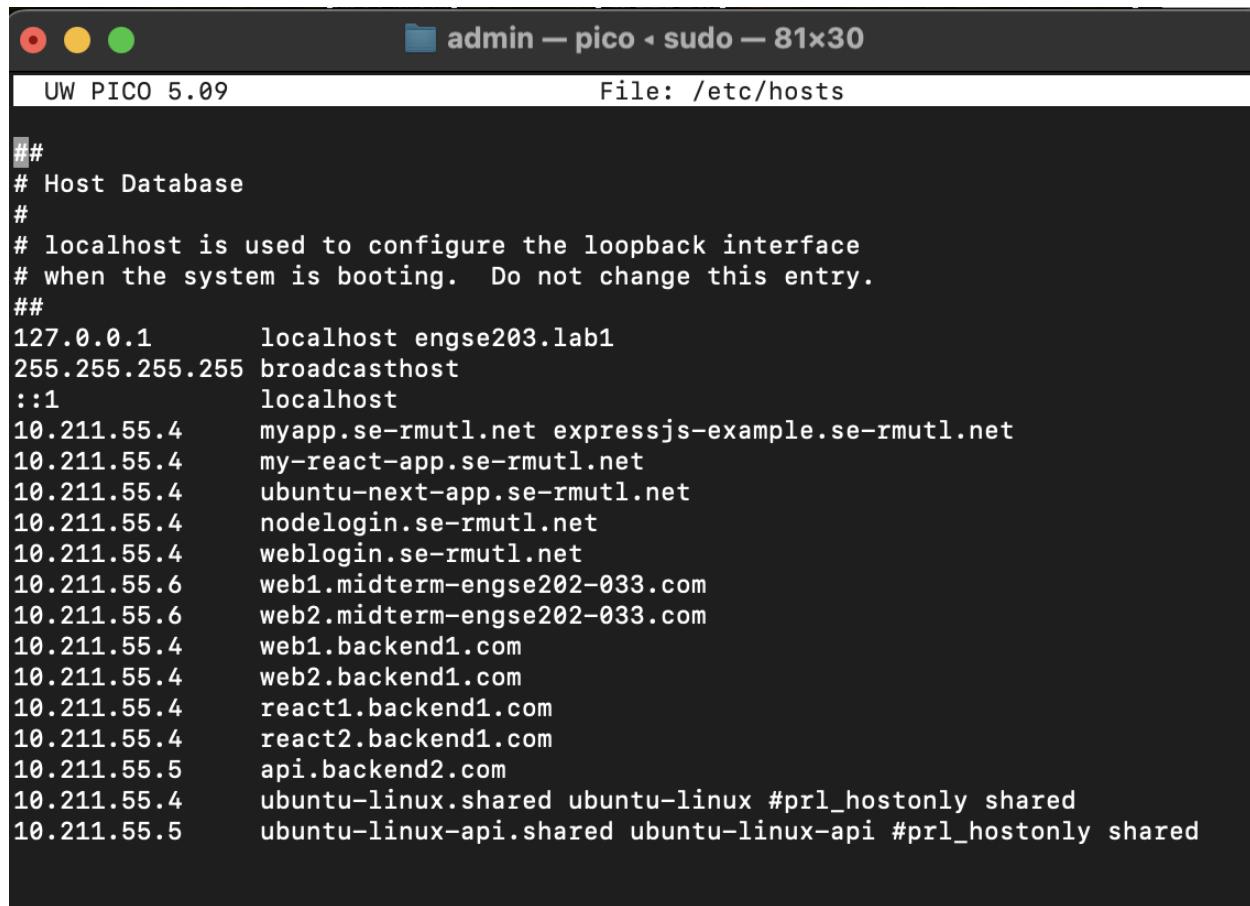
    location / {
        proxy_pass http://127.0.0.1:3010; # !!! - change to your app port
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

sudo nano react2 **เข้าไปยังไฟล์เพื่อแก้ไข**

```
GNU nano 6.2                                                 react2
server {
    listen 81;
    listen [::]:81;
    server_name react2.backend1.com;

    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;
    }
}
```

```
10.211.55.4 react1.backend1.com  
10.211.55.4 react2.backend2.com
```



The screenshot shows a terminal window titled "admin — pico - sudo — 81x30". The window title bar includes standard Mac OS X window controls (red, yellow, green) and the application name. The terminal window itself has a dark background and contains white text. At the top left, it says "UW PICO 5.09". At the top right, it says "File: /etc/hosts". The content of the file is as follows:

```
##  
# Host Database  
#  
# localhost is used to configure the loopback interface  
# when the system is booting. Do not change this entry.  
##  
127.0.0.1      localhost engse203.lab1  
255.255.255.255 broadcasthost  
::1            localhost  
10.211.55.4    myapp.se-rmutil.net expressjs-example.se-rmutil.net  
10.211.55.4    my-react-app.se-rmutil.net  
10.211.55.4    ubuntu-next-app.se-rmutil.net  
10.211.55.4    nodelogin.se-rmutil.net  
10.211.55.4    weblogin.se-rmutil.net  
10.211.55.6    web1.midterm-engse202-033.com  
10.211.55.6    web2.midterm-engse202-033.com  
10.211.55.4    web1.backend1.com  
10.211.55.4    web2.backend1.com  
10.211.55.4    react1.backend1.com  
10.211.55.4    react2.backend1.com  
10.211.55.5    api.backend2.com  
10.211.55.4    ubuntu-linux.shared ubuntu-linux #prl_hostonly shared  
10.211.55.5    ubuntu-linux-api.shared ubuntu-linux-api #prl_hostonly shared
```

ทดสอบการทำงาน

```
Compiled successfully!
```

```
You can now view material-dashboard-2-react in the browser.
```

```
Local:          http://localhost:3011
```

```
On Your Network: http://10.211.55.4:3011
```

```
Note that the development build is not optimized.
```

```
To create a production build, use npm run build.
```

```
webpack compiled successfully
```

```
devuser@backend1-66543210033:/var/www/nginx/react1/material-kit-react$ npm run dev

> material-kit-react@3.0.0 dev
> next -p 3010

  ▲ Next.js 14.0.4
  - Local:          http://localhost:3010

  ✓ Ready in 1500ms
  o Compiling /auth/login ...
  ✓ Compiled /auth/login in 1585ms (1560 modules)
  o Compiling / ...
  ✓ Compiled / in 1099ms (2430 modules)
```

Not Secure — react1.backend1.com

Imperial Bootstrap Template | Gp Bootstrap Template - Index | Overview | Devias Kit | Material Dashboard 2 React

Devias Production

Overview Customers Companies Account Settings Login Register Error

BUDGET \$24k ↑ 12% Since last month

TOTAL CUSTOMERS 1.6k ↓ 16% Since last month

TASK PROGRESS 75.5%

TOTAL PROFIT \$15k

Sales Sync

Traffic Source

Need more features? Check out our Pro solution template.

Pro Live Preview

20K
15K
10K
5K
0

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Desktop 63% | Tablet 15% | Phone 22%

Not Secure — react2.backend1.com

Imperial Bootstrap Template | Gp Bootstrap Template - Index | 502 Bad Gateway | Material Dashboard 2 React

Material Dashboard 2

Dashboard Tables Billing RTL Notifications Profile Sign In Sign Up UPGRADE TO PRO

Bookings 281 +55% than last week

Today's Users 2,300 +3% than last month

Revenue 34k +1% than yesterday Just updated

Followers +91 Just updated

Website Views Last Campaign Performance

Daily Sales (+15%) increase in today sales

Completed Tasks Last Campaign Performance

Orders overview

Projects ✓ 30 done this month

Companies Members Budget Completion

Material UI XD Version \$14,000

\$2400, Design changes 22 DEC 7:20 PM

New order #1832412

60
40
20
0

M T W T F S S

400
300
200
100
0

Apr Jun Aug Oct Dec

400
300
200
100
0

Apr Jun Aug Oct Dec

Step 9

แก้พอร์ต server ให้เป็น 4040 จากนั้น

sudo ufw allow 4040 เพื่อนุญาต port 4040

```
devuser@backend2-66543210033:/var/www/nginx$ sudo ufw allow 4040
Rule added
Rule added (v6)
```

sudo cp default backend2 คัดลอกไฟล์ default ของ backend2

```
devuser@backend2-66543210033:/var/www/nginx$ cd /etc/nginx/sites-available/
devuser@backend2-66543210033:/etc/nginx/sites-available$ ls
default
devuser@backend2-66543210033:/etc/nginx/sites-available$ sudo cp default backend2
devuser@backend2-66543210033:/etc/nginx/sites-available$ ls
backend2  default
devuser@backend2-66543210033:/etc/nginx/sites-available$
```

sudo nano backend2 เพิ่ม server_name api.backend2.com และแก้ไข Port ให้เป็น 4040

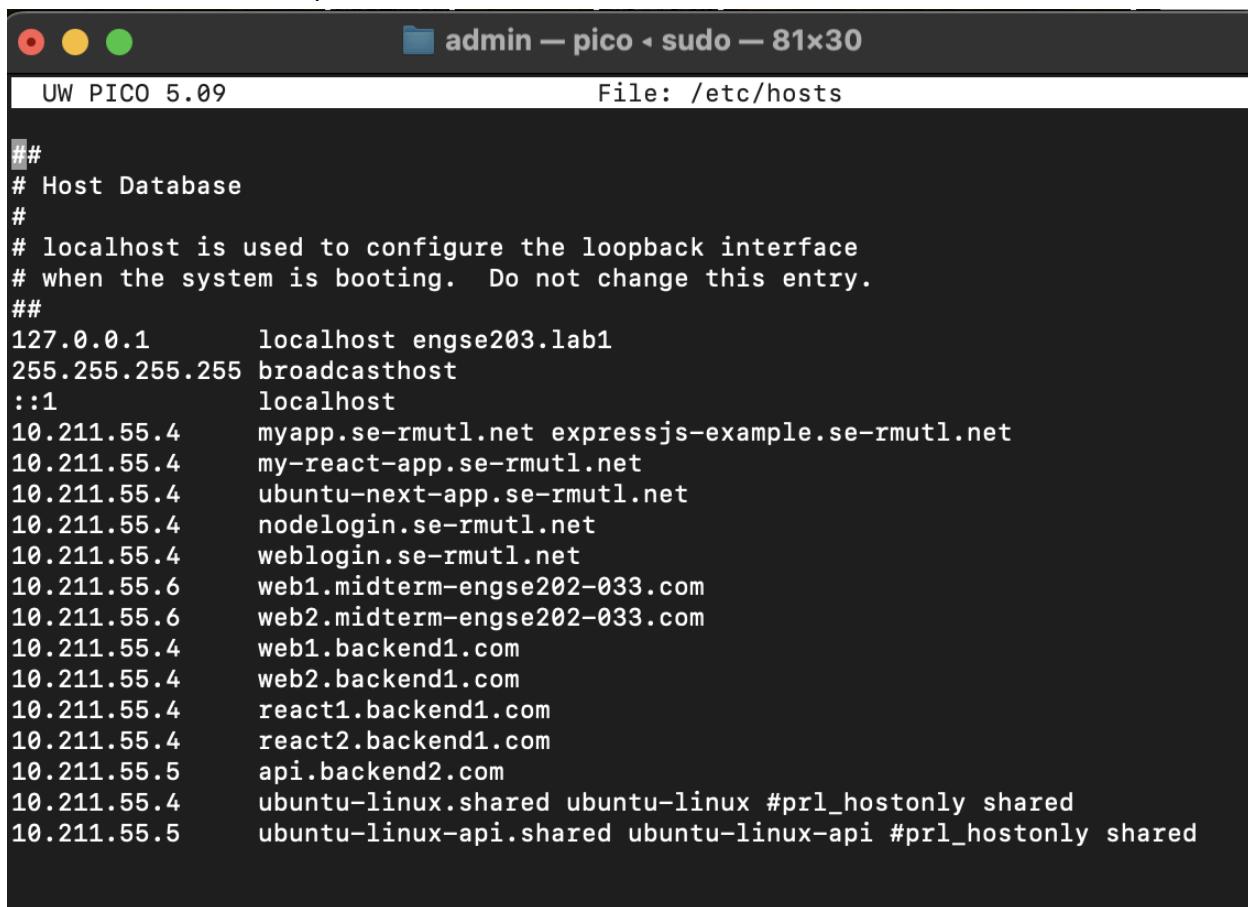
```
GNU nano 6.2                                     backend2
server {
    listen 80;
    listen [::]:80;
    server_name api.backend2.com;

    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;
    }
}
```

Restart nginx

```
devuser@backend2-66543210033:/etc/nginx/sites-available$ systemctl restart nginx.service
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
Authentication is required to restart 'nginx.service'.
Authenticating as: Surapat (devuser)
Password:
==== AUTHENTICATION COMPLETE ===
```

เพิ่มโดเมน 10.211.55.5 api.backend2.com



The screenshot shows a terminal window titled "admin — pico ◀ sudo — 81x30" with the command "File: /etc/hosts" at the top. The file contains the following content:

```
##  
# Host Database  
#  
# localhost is used to configure the loopback interface  
# when the system is booting. Do not change this entry.  
##  
127.0.0.1      localhost engse203.lab1  
255.255.255.255 broadcasthost  
::1            localhost  
10.211.55.4    myapp.se-rmutl.net expressjs-example.se-rmutl.net  
10.211.55.4    my-react-app.se-rmutl.net  
10.211.55.4    ubuntu-next-app.se-rmutl.net  
10.211.55.4    nodelogin.se-rmutl.net  
10.211.55.4    weblogin.se-rmutl.net  
10.211.55.6    web1.midterm-engse202-033.com  
10.211.55.6    web2.midterm-engse202-033.com  
10.211.55.4    web1.backend1.com  
10.211.55.4    web2.backend1.com  
10.211.55.4    react1.backend1.com  
10.211.55.4    react2.backend1.com  
10.211.55.5    api.backend2.com  
10.211.55.4    ubuntu-linux.shared ubuntu-linux #prl_hostonly shared  
10.211.55.5    ubuntu-linux-api.shared ubuntu-linux-api #prl_hostonly shared
```

ทดสอบการทำงาน

```
devuser@backend2-66543210033:/var/www/nginx/server$ node index.js  
running server  
Hello from API  
Hello from API
```

Step 10 Get&Post

GET

The screenshot shows the Postman application interface. In the top navigation bar, there are icons for Home, Workspaces, and Explore. The search bar contains the text "GET http://api.backend2.com:4040". On the right side of the header, there are buttons for "Sign In" and "Create Account". Below the header, the "History" section shows a list of previous requests, mostly GET requests to the same endpoint. The main workspace shows a single request configuration for a GET request to "http://api.backend2.com:4040". The "Body" tab is selected, showing the response body as a JSON object: "username": "hello this res by api". The status bar at the bottom indicates a 200 OK response with 4 ms duration and 325 B size.

```
devuser@backend2-66543210033:/var/www/nginx$ cd ..
devuser@backend2-66543210033:/var/www$ cd nginx/
devuser@backend2-66543210033:/var/www/nginx$ cd server
devuser@backend2-66543210033:/var/www/nginx/server$ ls
index.js  node_modules  package.json  package-lock.json
devuser@backend2-66543210033:/var/www/nginx/server$ node index.js
running server
Hello from API
Hello from API
Hello from API
```

POST

The screenshot shows the Postman application interface. At the top, there's a navigation bar with 'Home', 'Workspaces', 'Explore', a search bar 'Search Postman', and user options 'Sign In' and 'Create Account'. Below the navigation is a 'History' section showing a list of API interactions, mostly GET requests to 'http://api.backend2.com:4040'. On the right, a detailed view of a specific POST request to 'http://api.backend2.com:4040' is displayed. The request details show 'POST' method, URL 'http://api.backend2.com:4040', and various tabs like 'Params', 'Authorization', 'Headers (7)', 'Body', 'Pre-request Script', 'Tests', and 'Settings'. The 'Body' tab is selected, showing 'x-www-form-urlencoded' as the type. Below it is a table with columns 'Key' and 'Value', containing one entry: 'Key' is 'none' and 'Value' is 'Value'. Underneath the table, there are tabs for 'Body', 'Cookies', 'Headers (10)', and 'Test Results'. The 'Body' tab is active, showing a pre-formatted response body:

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

At the bottom of the interface, there are buttons for 'Pretty', 'Raw', 'Preview', 'Visualize', and 'HTML'. To the right of the preview area, status information is shown: '404 Not Found', '5 ms', '466 B', and a 'Save Response' button. The bottom of the window has icons for 'Console', 'Not connected to a Postman account', and other UI elements.

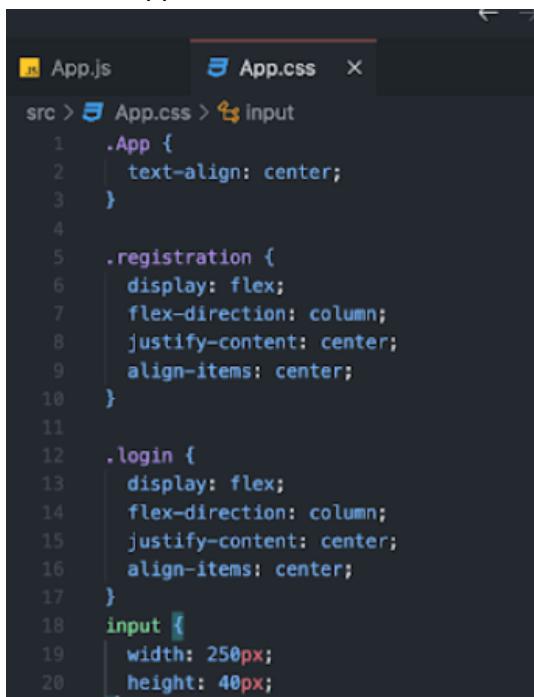
Step 11

จากนั้นแก้ไข นำ source code เข้ามา
client/src/App.js แก้พอร์ตเป็น 4040



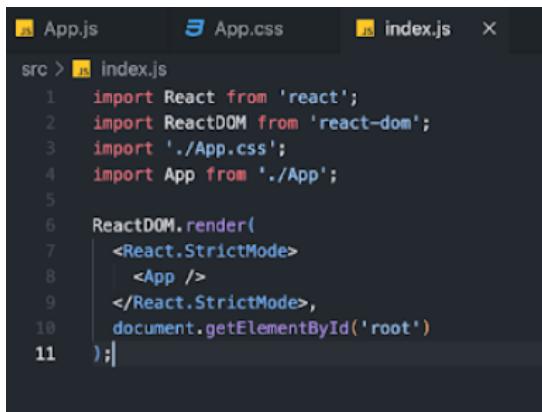
```
backend1 > src > App.js > App > register
  1 import React, { useEffect, useState } from "react";
  2 import Axios from 'axios';
  3 import './App.css';
  4 function App() {
  5   const [usernameReg, setUsernameReg] = useState("");
  6   const [passwordReg, setPasswordReg] = useState ("");
  7   const [username, setUsername] = useState("");
  8   const [password, setPassword] = useState ("");
  9   const [loginStatus, setLoginStatus] = useState("");
 10   const register = () => {
 11     Axios.post("http://10.211.55.6:4040/register", {
 12       username: usernameReg,
 13       password: passwordReg,
 14     }).then((response) => {
 15       console.log(response);
 16
 17       if (!response.data.err) {
 18         setLoginStatus("'" +usernameReg + "' was inserted.");
 19       } else {
 20         setLoginStatus(response.data.err.sqlMessage);
 21       }
 22     });
 23   };
 24
 25   );
 26 };
 27 const login = () => {
 28   Axios.post("http://10.211.55.6:4040/login", {
 29     username: username,
 30     password: password,
 31   }).then((response) => {
 32     console.log(response);
 33     //console.log("response.data.message: "+response.data[0].message);
 34
 35     if (!response.data.message) {
 36       setLoginStatus("'" +response.data[0].username + "' was logged in.");
 37     } else {
 38       setLoginStatus(response.data.message);
 39     }
 40   });
 41   );
 42 };
 43
 44
 45   return (
 46     <div className="App">
 47       <div className="registration">
 48         <h1>Registration</h1>
 49         <label>Username</label>
 50         <input
```

client/src/App.css



```
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;
```

client/src/index.js



```
src > index.js
1 import React from 'react';
2 import ReactDOM from 'react-dom';
3 import './App.css';
4 import App from './App';

5 ReactDOM.render(
6   <React.StrictMode>
7     <App />
8   </React.StrictMode>,
9   document.getElementById('root')
10 );
11 );
```

ไปที่ไฟล์ package.json เพิ่มพอร์ต 3012 เข้าไป

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

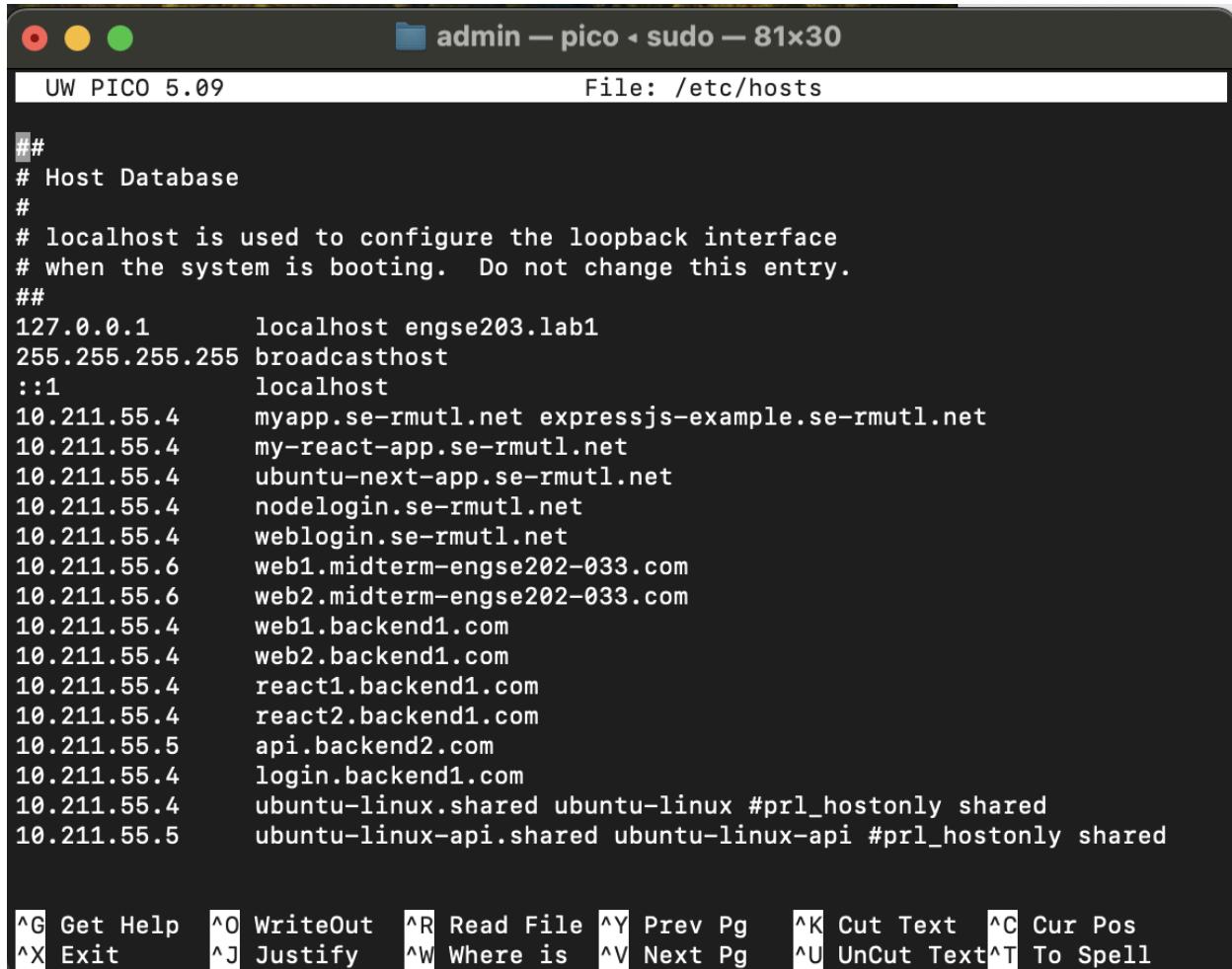
sudo ufw allow 3012 เพื่ออนุญาต port 3012

sudo nano backend2 เข้าไปยังไฟล์ backend2

Restart nginx

```
devuser@backend2-66543210033:/etc/nginx/sites-available$ systemctl restart nginx.service  
===== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units =====  
Authentication is required to restart 'nginx.service'.  
Authenticating as: Surapat (devuser)  
Password:  
===== AUTHENTICATION COMPLETE =====
```

เพิ่มโดเมน 10.211.55.4 login.backend1.com



```
##  
# Host Database  
#  
# localhost is used to configure the loopback interface  
# when the system is booting. Do not change this entry.  
##  
127.0.0.1      localhost engse203.lab1  
255.255.255.255 broadcasthost  
::1            localhost  
10.211.55.4    myapp.se-rmutil.net expressjs-example.se-rmutil.net  
10.211.55.4    my-react-app.se-rmutil.net  
10.211.55.4    ubuntu-next-app.se-rmutil.net  
10.211.55.4    nodelogin.se-rmutil.net  
10.211.55.4    weblogin.se-rmutil.net  
10.211.55.6    web1.midterm-engse202-033.com  
10.211.55.6    web2.midterm-engse202-033.com  
10.211.55.4    web1.backend1.com  
10.211.55.4    web2.backend1.com  
10.211.55.4    react1.backend1.com  
10.211.55.4    react2.backend1.com  
10.211.55.5    api.backend2.com  
10.211.55.4    login.backend1.com  
10.211.55.4    ubuntu-linux.shared ubuntu-linux #prl_hostonly shared  
10.211.55.5    ubuntu-linux-api.shared ubuntu-linux-api #prl_hostonly shared
```

^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

```
npm install express --save ติดตั้ง express  
npm install --save mysql2 ติดตั้ง mysql2  
npm i --save cors ติดตั้ง cors
```

```
devuser@backend1-66543210033:/var/www/nginx/backend1$ npm install express --save  
  
up to date, audited 1567 packages in 3s  
  
254 packages are looking for funding  
  run `npm fund` for details  
  
8 vulnerabilities (2 moderate, 6 high)  
  
To address all issues (including breaking changes), run:  
  npm audit fix --force  
  
Run `npm audit` for details.  
devuser@backend1-66543210033:/var/www/nginx/backend1$ npm install --save mysql2  
  
changed 1 package, and audited 1567 packages in 2s  
  
254 packages are looking for funding  
  run `npm fund` for details  
  
8 vulnerabilities (2 moderate, 6 high)  
  
To address all issues (including breaking changes), run:  
  npm audit fix --force  
  
Run `npm audit` for details.  
devuser@backend1-66543210033:/var/www/nginx/backend1$ npm i --save cors  
  
up to date, audited 1567 packages in 2s  
  
254 packages are looking for funding  
  run `npm fund` for details  
  
8 vulnerabilities (2 moderate, 6 high)  
  
To address all issues (including breaking changes), run:  
  npm audit fix --force  
  
Run `npm audit` for details.  
devuser@backend1-66543210033:/var/www/nginx/backend1$ █
```

ให้รันแบบโดเมนโดยเข้าไปแก้พอร์ตใน server/index.js

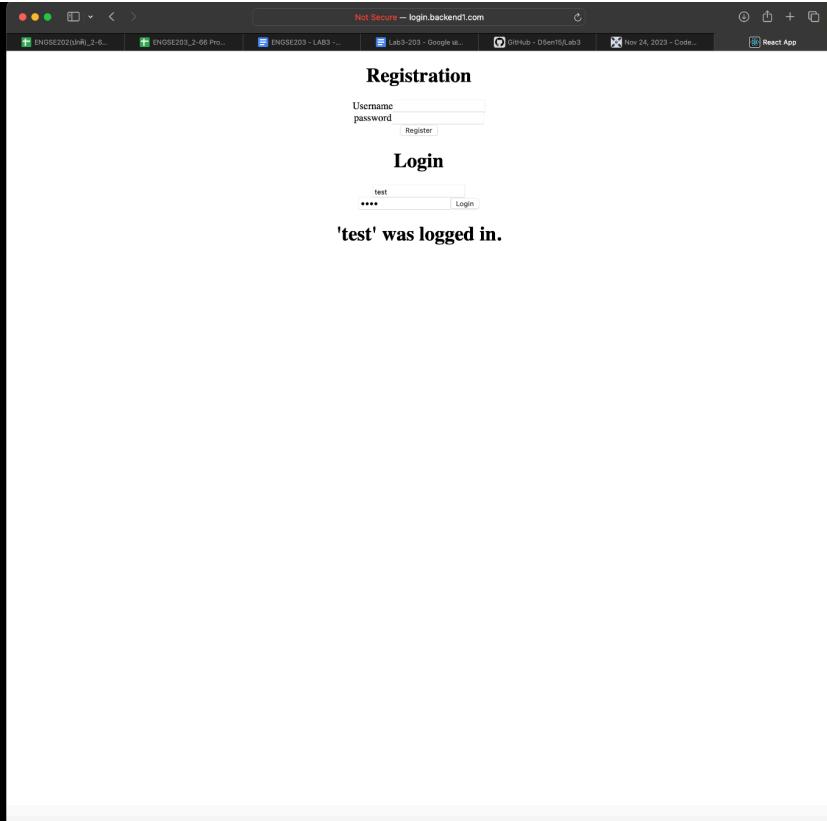
origin: ["http://10.211.55.5:3004"], => origin: ["http://login.backend1.com"],

```
index.js > app.get("/") callback
1 const express = require("express");
2 const mysql = require("mysql2");
3 const cors = require("cors");
4
5
6 const app = express();
7
8
9 const db = mysql.createConnection({
10   host: 'localhost',
11   user: 'example_user',
12   password: 'P@ssw0rd@2023',
13   database: 'loginsystem',
14 });
15 app.use(express.json());
16 app.use(
17   cors({
18     origin: ["http://login.backend1.com"],
19     methods: ["GET", "POST"],
20     credentials: true,
21   })
22 );
23 app.get('/', (req, res) => {
24   res.json(
25     [
26       {
27         username: "hello this res by api"
28       }
29     ]
30   );
31   console.log("Hello from API");
32 });
33 app.post('/login', (req, res) => {
34   let username = req.body.username;
35   let password = req.body.password;
36   console.log("body: " + JSON.stringify(req.body));
37   console.log("username: "+username);
38   console.log("password: "+password);
39 }
```

SSH: 10.211.55.5

Ln 25, Col 10 Spaces: 4 UTF-8 LF { } JavaScript

ทดสอบการทำงาน



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