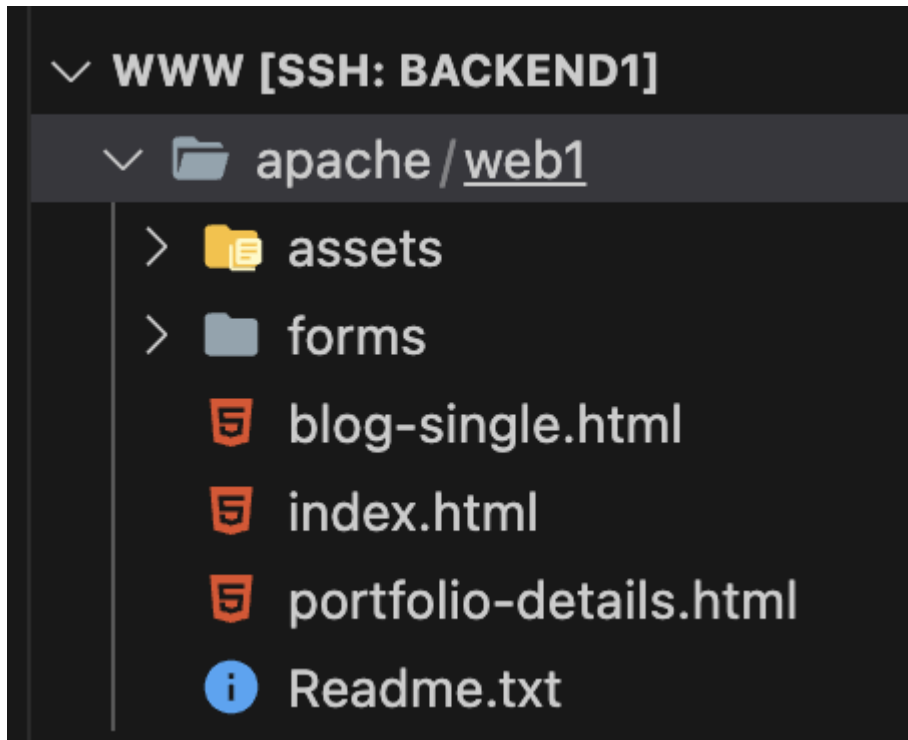


Step 6

เครื่อง backend1

สร้าง folder apache และ nginx และทำการ chown

โหลด template มาลง



Copy 000-default.conf to web1.conf และ ทำการแก้ไข web1.conf

```
lertpisit@backend1-66543210001:/etc/apache2/sites-available$ cp 000-default.conf web1.conf
```

เข้าไปแก้ไข web1.conf

```
lertpisit@backend1-66543210001:/etc/apache2/sites-available$ sudo nano web1.conf
```

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

Enable web1

```
lertpisit@backend1-66543210001:/etc/apache2/sites-available$ sudo a2ensite web1
Enabling site web1.
To activate the new configuration, you need to run:
systemctl reload apache2
```

Disable 000-default

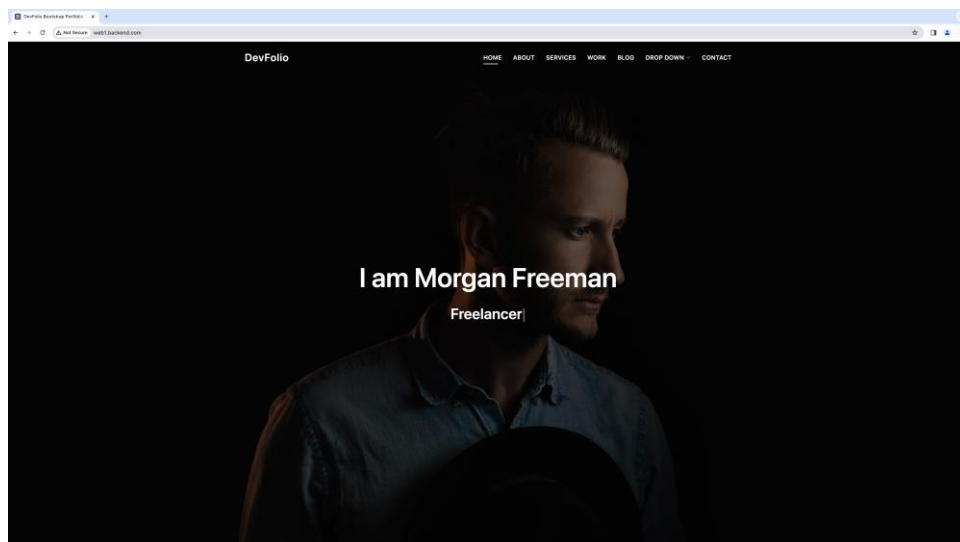
```
lertpisit@backend1-66543210001:/etc/apache2/sites-available$ sudo a2dissite 000-default
Site 000-default already disabled
```

ไปที่ mac และแก้ไข hosts

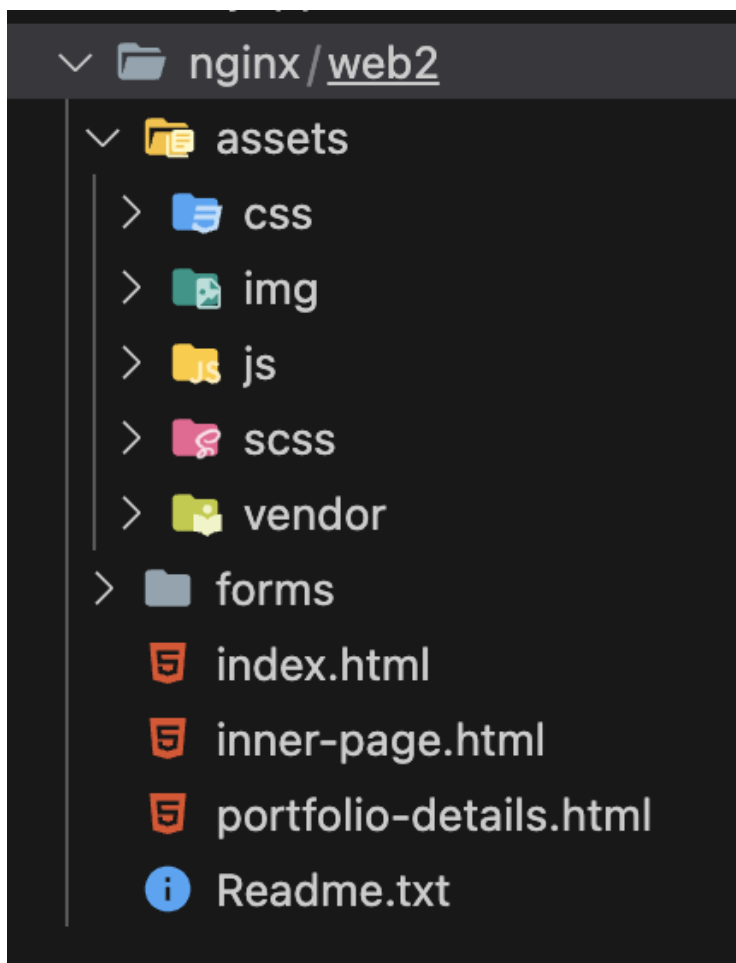
```
admin@admins-iMac ~ % sudo nano /etc/hosts
```

```
10.211.55.3    web1.backend.com
```

ทดลองเข้าโดเมน



โหลด template มาลง



Copy default to web2 และ ทำการแก้ไข web2 เป็น port 81

```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo cp default web2
```

```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo nano web2
```

```
server {
    listen 81 default_server;
    listen [::]:81 default_server;

    # SSL configuration
    #
    # listen 443 ssl default_server;
    # listen [::]:443 ssl default_server;
    #
    # Note: You should disable gzip for SSL traffic.
    # See: https://bugs.debian.org/773332
    #
    # Read up on ssl_ciphers to ensure a secure configuration.
    # See: https://bugs.debian.org/765782
    #
    # Self signed certs generated by the ssl-cert package
    # Don't use them in a production server!
    #
    # include snippets/snakeoil.conf;

    root /var/www/nginx/web2/;
```

เปิด Port 81

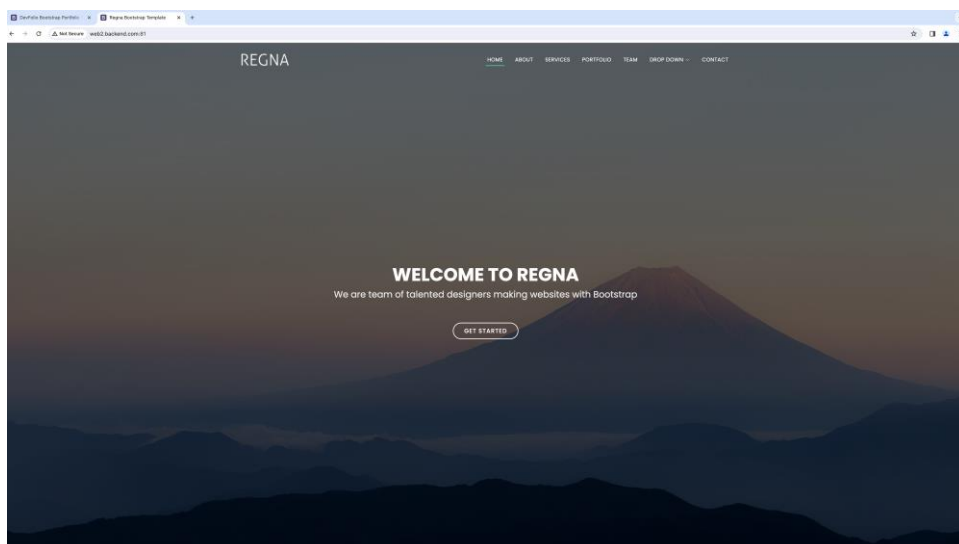
```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo ufw allow 81
Rule added
Rule added (v6)
```

ไปที่ mac และแก้ไข hosts

```
admin@admins-iMac ~ % sudo nano /etc/hosts
```

```
10.211.55.3 expressjs.se-rmutl.net myapp.se-rmutl.net react.se-rmutl.net weblogin.se-rmutl.net web1.backend.com web2.backend.com
```

ทดลองเข้าโดเมน



Step 7 and step 8

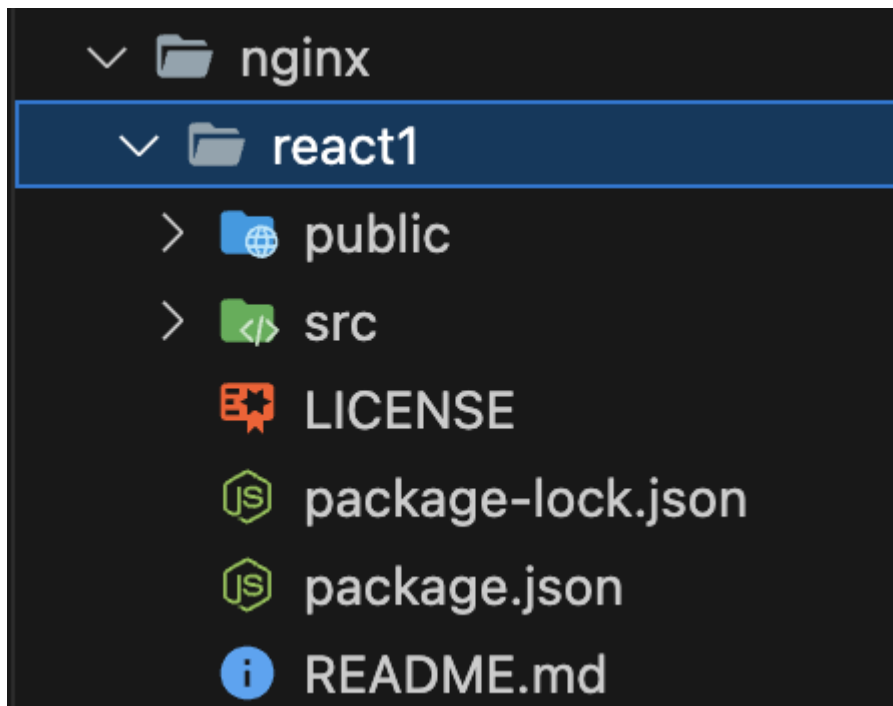
สร้าง folder react 1,2

```
lertpisit@backend1-66543210001:/var/www/nginx$ sudo mkdir react1
lertpisit@backend1-66543210001:/var/www/nginx$ ls
react1  web2
lertpisit@backend1-66543210001:/var/www/nginx$ sudo mkdir react2
```

ไปที่ mac และแก้ไข hosts

```
10.211.55.3 my-react-app.se-rmutl.net ubuntu-next-app.se-rmutl.net nodelogin.se-rmutl.net react1.backend1.com react2.backend1.com
```

โหลด template react มาลง



ลงส่วนเสริม

```
LICENSE package.json package-lock.json public README.md
lertpisit@backend1-66543210001:/var/www/nginx/react1$ npm i
```

ไปที่ package.json เพื่อ กำหนด port

```
"scripts": {
  "start": "export PORT=3010 SET NODE_OPTIONS=--openssl-legacy-provider && react-scripts start",
```

เปิด port 3010

```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo ufw allow 3010
Rule added
Rule added (v6)
```

ไปที่ `/etc/nginx/sites-available` และ สร้าง `react1`

```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo nano react1
lertpisit@backend1-66543210001:/etc/nginx/sites-available$

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;
    }
}
```

Run `npm start`

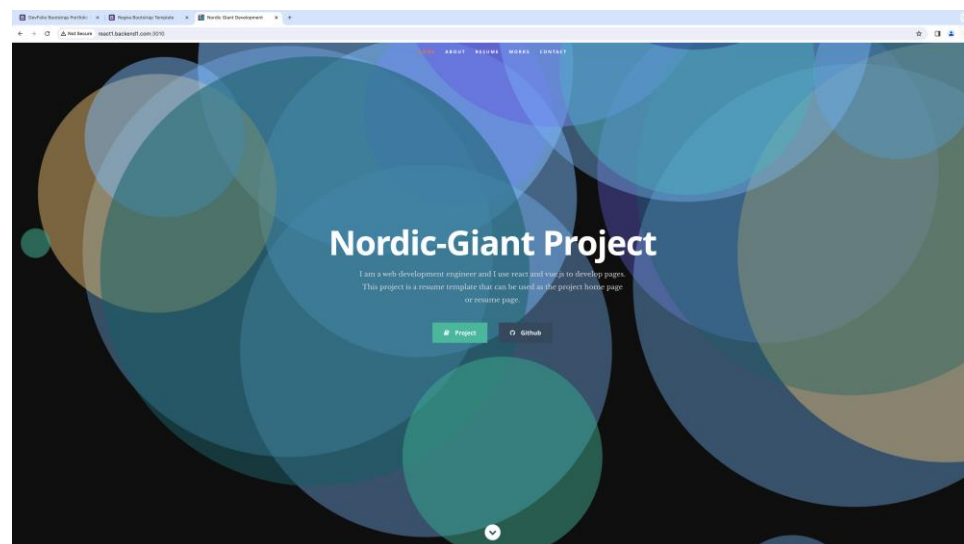
```
Compiled successfully!

You can now view reactniceresume in the browser.

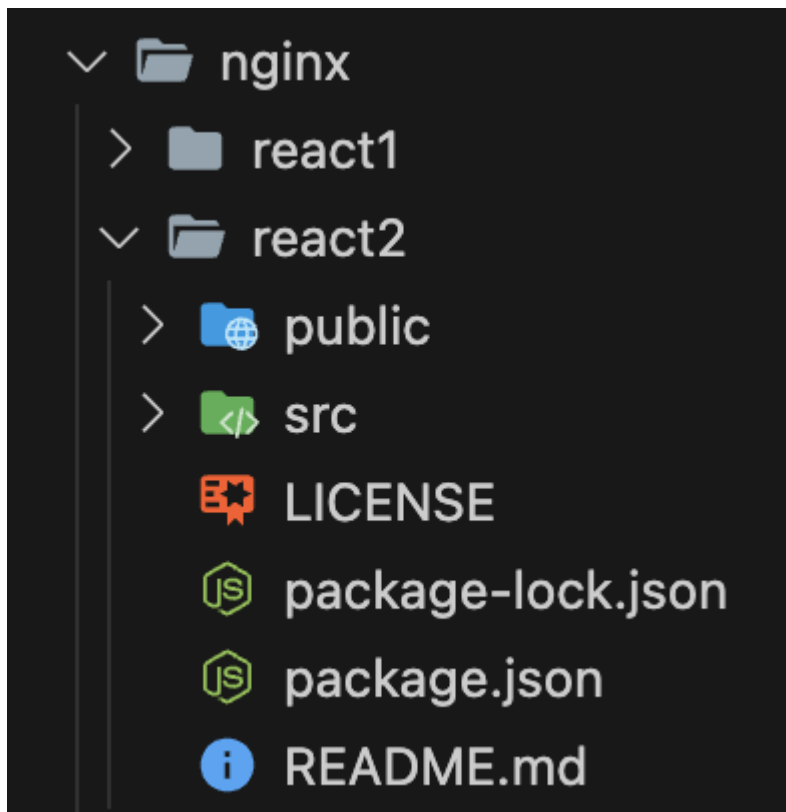
Local:      http://localhost:3010
On Your Network: http://10.211.55.3:3010

Note that the development build is not optimized.
To create a production build, use npm run build.
```

ทดลองเข้าโดเมน



โหลด template react มาลง



ลง npm

```
lertpisit@backend1-66543210001:/var/www/nginx$ cd react2
lertpisit@backend1-66543210001:/var/www/nginx/react2$ npm install
```

ไปที่ package.json เพื่อ กำหนด port

```
"scripts": {
  "start": "export PORT=3011 SET NODE_OPTIONS=--openssl-legacy-provider && react-scripts start",
  "build": "react-scripts build"
}
```

เปิด port 3010

```
lertpisit@backend1-66543210001:/var/www/nginx/react2$ sudo ufw allow 3011
Rule added
Rule added (v6)
lertpisit@backend1-66543210001:/var/www/nginx/react2$
```

ไปที่ /etc/nginx/sites-available และ สร้าง react1

```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo nano react2
```

```
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;
  }
}
```

Run npm start

Compiled successfully!

You can now view **react-saas-template** in the browser.

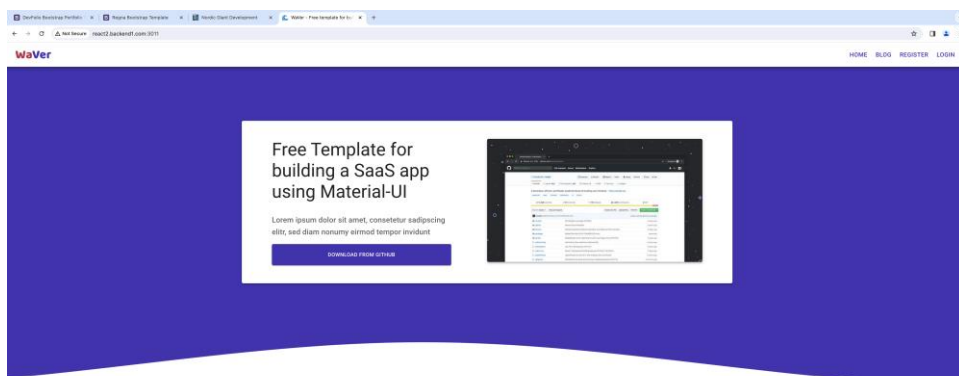
Local: `http://localhost:3011/`

On Your Network: `http://10.211.55.3:3011/`

Note that the development build is not optimized.
To create a production build, use `npm run build`.



ทดลองเข้าโดเมน



Features

Step 9

เครื่อง backend 2

ไปที่ /etc/nginx/sites-available และ สร้าง apibackend

```
lertpisit@backend2-66543210001:~$ sudo nano /etc/nginx/sites-available/apibackend
```

```
GNU nano 6.2 /etc/nginx/sites-available/apibackend
server {
    listen 80;
    listen [::]:80;

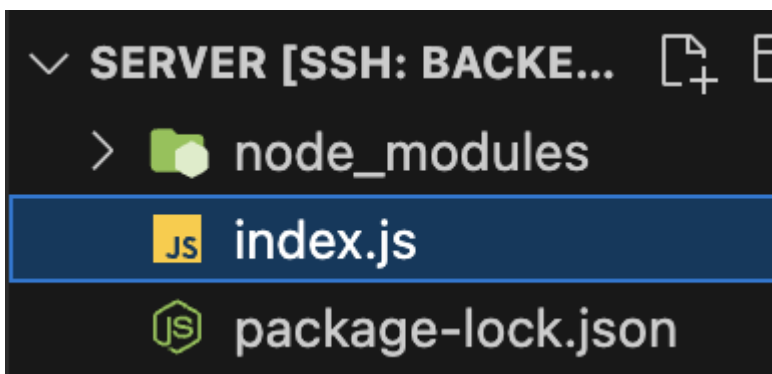
    server_name api.backend2.com;

    location / {
        proxy_pass http://127.0.0.1:4040;
        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;
    }
}
```

เปิด port 4040

```
lertpisit@backend2-66543210001:~$ sudo ufw allow 4040
```

แก้ไข index.js



```
14 app.use(express.json());
15 app.use(
16   cors({
17     origin: ["http://login.backend1.com:3012"],
18     methods: ["GET", "POST"],
19     credentials: true,
20   })
21 )
```

```

74
75     app.listen(4040, () => {
76         console.log("running server");
77     });

```

ไปที่ mac และแก้ไข hosts

```
admin@admins-iMac ~ % sudo nano /etc/hosts
```

```

10.211.55.4      api.midterm-engse202-001.com api.backend2.com
lertpisit@backend2-66543210001:/var/www/lab4/server$ nodemon index.js
[nodemon] 3.0.2
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node index.js`
running server

```

Step 10

Postman get

The screenshot shows the Postman interface for a GET request to `http://api.backend2.com/`. The request is saved and ready to be sent. The response is displayed in the bottom panel, showing a status of 200 OK, a response time of 22 ms, and a body of "Hello from API".

Request Details:

- Method: GET
- URL: `http://api.backend2.com/`

Response Details:

- Status: 200 OK
- Time: 22 ms
- Size: 303 B
- Body: Hello from API

Postman post

POST http://api.backend2.com/

POST http://api.backend2.com/

+

...

http://api.backend2.com/

Save

POST

http://api.backend2.com/register

Send

Params

Authorization

Headers (8)

Body

Pre-request Script

Tests

Settings

Cookies

none

form-data

x-www-form-urlencoded

raw

binary

JSON

Beautify

1

2

3

4

username:"test1",

password:"test1"

Body

Cookies

Headers (9)

Test Results

200 OK

33 ms

405 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

1

2

3

4

5

6

7

8

9

fieldCount": 0,

affectedRows": 1,

insertId": 0,

info": "",

serverStatus": 2,

warningStatus": 0,

changedRows": 0

Step 11

เครื่อง backend1

สร้าง react

```
lertpisit@backend1-66543210001:/var/www$ cd nginx/login/  
lertpisit@backend1-66543210001:/var/www/nginx/login$ npx create-react-app .
```

เข้าไปแก้ไข app.css

```
App.css ×
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 }
```

เข้าไปแก้ไข app.js

```

App.js
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://api.backend2.com/register", {
17             username: usernameReg,
18             password: passwordReg,
19         }).then((response) => {
20             console.log(response);
21
22             if (!response.data.err) {
23                 setLoginStatus(""+usernameReg + " was inserted.");
24             } else {
25                 setLoginStatus(response.data.err.sqlMessage);
26             }
27         });
28     };
29
30
31
32     const login = () => {
33         Axios.post("http://api.backend2.com/login", {
34             username: username,
35             password: password,
36         }).then((response) => {
37             console.log(response);
38             //console.log("response.data.message: "+response.data[0].message);
39
40             if (!response.data.message) {
41                 setLoginStatus(""+response.data[0].username + " was logged in.");
42             } else {
43                 setLoginStatus(response.data.message);
44             }
45         });
46     };
47
48

```

```

49   return (
50     <div className="App">
51       <div className="registration">
52         <h1>Registration</h1>
53         <label>Username</label>
54         <input
55           type="text"
56           onChange={(e) => {
57             setUsernameReg(e.target.value);
58           }}
59         /><br/>
60         <label>password</label>
61         <input
62           type="text"
63           onChange={(e) => {
64             setPasswordReg(e.target.value);
65           }}
66         /> <br />
67         <button onClick={register}> Register</button>
68       </div>
69
70       <div className="login">
71         <h1>Login</h1>
72         <input
73           type="text"
74           placeholder="Username.."
75           onChange = { (e) => {
76             setUsername (e.target.value);
77           }}
78         /> <br/>
79         <input
80           type="password"
81           placeholder="Password.."
82           onChange = { (e) => {
83             setPassword (e.target.value);
84           }}
85         />
86         <button onClick={login}>Login</button>
87       </div>
88       <h1> {loginStatus}</h1>
89     </div>
90   );
91 }
92
93 export default App;

```

เข้าไปแก้ไข index.css

```

App.css  JS index.js  X
login > src > JS 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

```

ลง axios

```
lertpisit@backend1-66543210001:/var/www/nginx/login$ npm i --save axios

added 3 packages, and audited 1556 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.
```

ไปที่ package.json เพื่อ กำหนด port

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

เปิด Port 3012

```
lertpisit@backend1-66543210001:/var/www/nginx/login$ sudo ufw allow 3012
[sudo] password for lertpisit:
Rule added
Rule added (v6)
```

ไปที่ /etc/nginx/sites-available และ สร้าง react1

```
lertpisit@backend1-66543210001:/etc/nginx/sites-available$ sudo nano login
lertpisit@backend1-66543210001:/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;
    }
}
```


ไปที่ mac และแก้ไข hosts

```
admin@admins-iMac ~ % sudo nano /etc/hosts
```

```
10.211.55.3 expressjs.se-rmutl.net myapp.se-rmutl.net react.se-rmutl.net weblogin.se-rmutl.net web1.backend.com web2.backend.com login.backend1.com
```

Run npm start เครื่อง backend1

Compiled successfully!

You can now view **login** in the browser.

Local: http://localhost:3012

On Your Network: http://10.211.55.3:3012

Note that the development build is not optimized.
To create a production build, use `npm run build`.

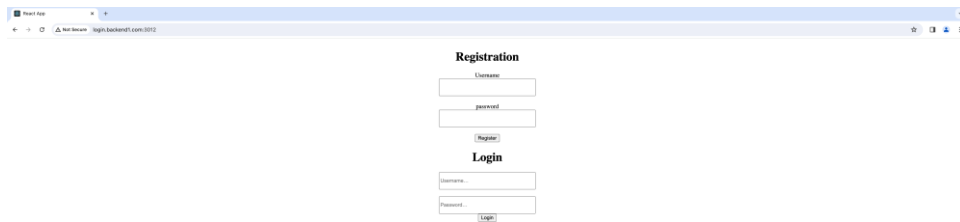
webpack compiled **successfully**

Run nodemon index.js เครื่อง backend2

```
lertpisit@backend2-66543210001:/var/www/lab4/server$ nodemon index.js
[nodemon] 3.0.2
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node index.js`
```

ผลลัพธ์

หน้าปกติ



The screenshot shows a web browser window with the address bar displaying 'http://localhost:3012'. The page contains two sections: 'Registration' and 'Login'. The 'Registration' section has two input fields labeled 'Username' and 'password', followed by a 'Register' button. The 'Login' section has two input fields labeled 'Username' and 'Password', followed by a 'Login' button.

ตอน register



The screenshot shows the same web browser window as before, but with a message displayed below the 'Login' section: "'fiew' was inserted." The 'Registration' and 'Login' forms are still visible.

ตอน login



The screenshot shows the same web browser window as before, but with a message displayed below the 'Login' section: "'fiew' was logged in." The 'Registration' and 'Login' forms are still visible.