

# Lab3

## step 6

### Web1 apache config

```
GNU nano 6.2                               /etc/apache2/sites-available/web1.conf *
<VirtualHost *:80>
    # The ServerName directive sets the request scheme, hostname and port that
    # the server uses to identify itself. This is used when creating
    # redirection URLs. In the context of virtual hosts, the ServerName
    # specifies what hostname must appear in the request's Host: header to
    # match this virtual host. For the default virtual host (this file) this
    # value is not decisive as it is used as a last resort host regardless.
    # However, you must set it for any further virtual host explicitly.
    #ServerName www.example.com

    ServerAdmin admin@web1.backend1.com
    ServerName web1.backend1.com
    ServerAlias www.web1.backend1.com
    DocumentRoot /var/www/apache/web1

    # Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
    # error, crit, alert, emerg.
    # It is also possible to configure the loglevel for particular
    # modules, e.g.
    #LogLevel info ssl:warn

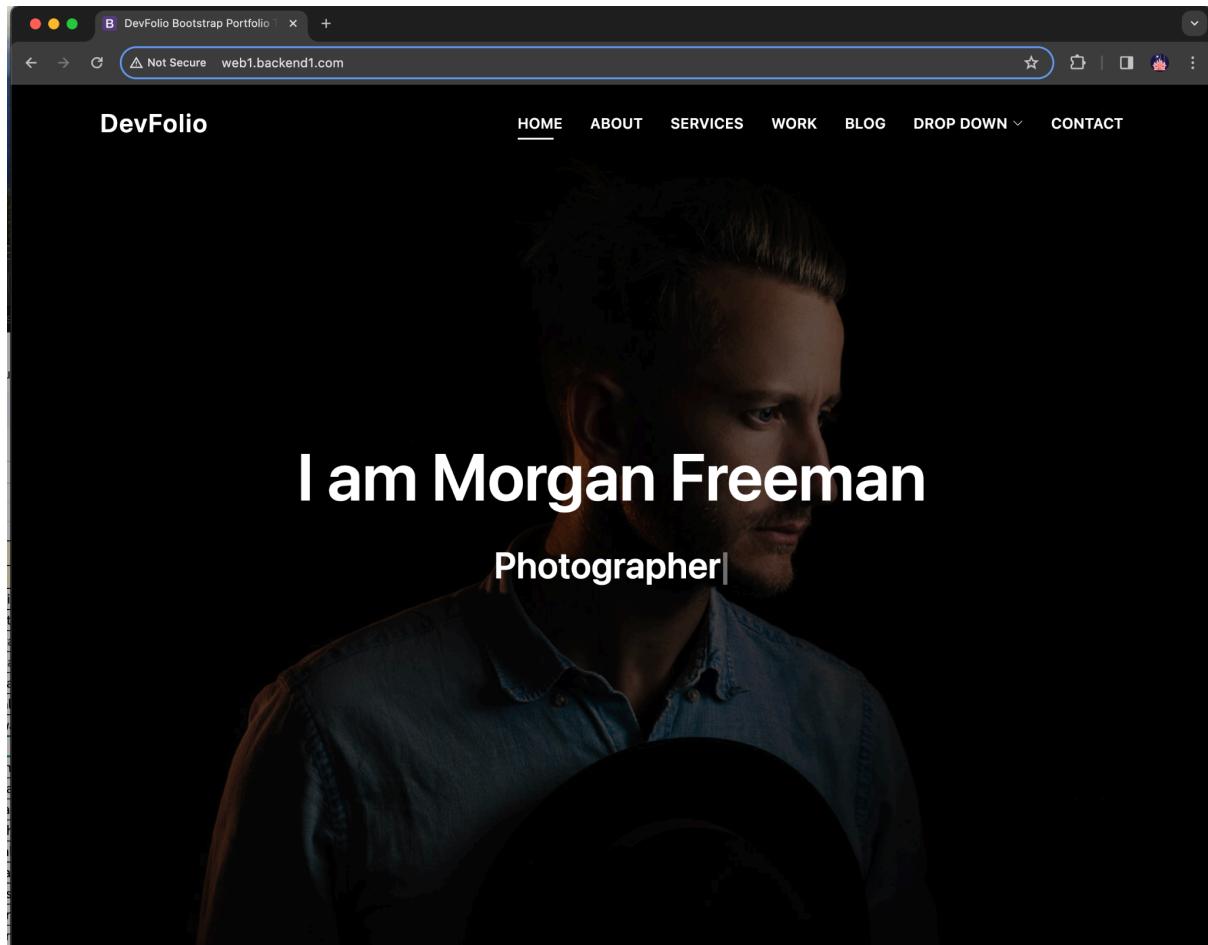
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined

    # For most configuration files from conf-available/, which are
    # enabled or disabled at a global level, it is possible to
    # include a line for only one particular virtual host. For example the
    # following line enables the CGI configuration for this host only
    # after it has been globally disabled with "a2disconf".
    #Include conf-available/serve-cgi-bin.conf
</VirtualHost>

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

Web1 webpage

<http://web1.backend1.com/>



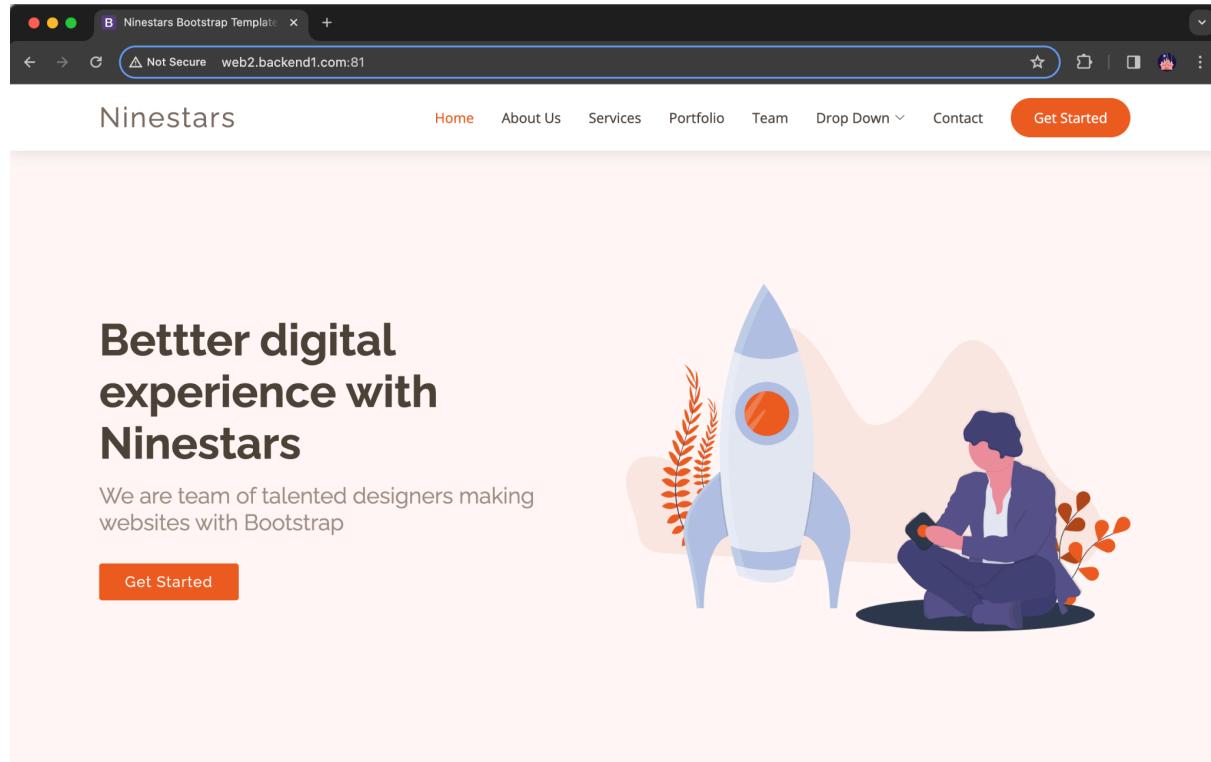
Web2 nginx config

```
nginx: configuration file /etc/nginx/nginx.conf
server {
    listen 81 default_server;
    listen [::]:81 default_server;
    root /var/www/nginx/web2;
    index index.html index.htm index.nginx-debian.html;
    server_name _;

    location / {
        try_files $uri $uri/ =404;
    }
}
```

## Web2 webpage

<http://web2.backend1.com:81/>



**Voluptatem dignissimos  
provident quasi**

step 8

React1 ໂຫລດ template folder ລົງ vs code

```
✓ REACT1 [SSH: 10.211.55.3]
> node_modules
> public
> src
🕒 CHANGELOG.md
⬇ ISSUE_TEMPLATE.md
{} jsconfig.json
⚠ LICENSE.md
{} package-lock.json
{} package.json
ⓘ README.md
```

## Nginx react1 config file

```
GNU nano 6.2                                     react1 *
server {
    listen 80;
    listen [::]:80;
    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 material-dashboard-2-react 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.

webpack compiled successfully
```

The screenshot shows a Material Dashboard 2 React application running on a local server at `react1.backend1.com/dashboard`. The interface is dark-themed with light-colored cards for each section. On the left is a sidebar with navigation links: Dashboard (selected), Tables, Billing, RTL, Notifications, Profile, Sign In, and Sign Up. A blue button at the bottom of the sidebar says "UPGRADE TO PRO". The main area has several sections:

- Dashboard**: Shows Bookings (281, +55% than last week), Today's Users (2,300, +3% than last month), Revenue (34k, +1% than yesterday), and Followers (+91, Just updated).
- Website Views**: Last Campaign Performance chart showing views by day of the week (M-F, S-S).
- Daily Sales**: Last Campaign Performance chart showing sales over time from April to December.
- Completed Tasks**: Last Campaign Performance chart showing tasks over time from April to December.
- Projects**: A table listing three projects:
 

COMPANIES	MEMBERS	BUDGET	COMPLETION
Xd Material UI XD Version	3	\$14,000	Progress bar (~75%)
Add Progress Track	2	\$3,000	Progress bar (~25%)
Fix Platform Errors	2	Not set	Progress bar (~100%)
- Orders overview**: A list of recent orders:
  - \$2400, Design changes (22 DEC 7:20 PM)
  - New order #1832412 (21 DEC 11 PM)
  - Server payments for April (21 DEC 9:34 PM)

## React2 ໄລດ້ template folder ລົງ vs code

```
✓ REACT2 [SSH: 10.211.55.3]
> docs
> node_modules
> public
> src
⌚ CHANGELOG.md
⬇ ISSUE_TEMPLATE.md
{} jsconfig.json
⚠ LICENSE.md
{} package-lock.json
{} package.json
ⓘ README.md
```

## Nginx react2 config file

```
GNU nano 6.2
GNU nano 6.2
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

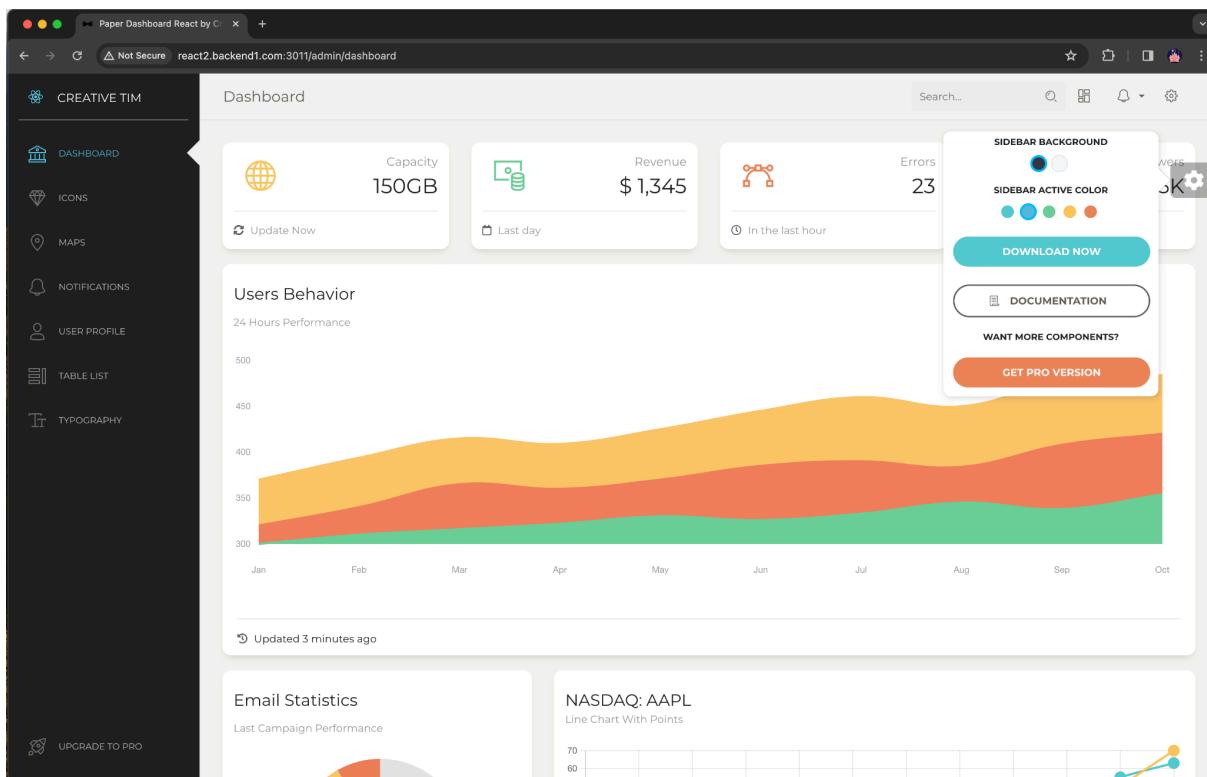
```
Compiled successfully!

You can now view paper-dashboard-react 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.

webpack compiled successfully
```



## step 9

แก้พอร์ต server ให้เป็น 4040 ใน index.js

```
1 app.listen(4040, () => [
2   console.log("running server");
3 ]);
4
```

อนุญาติ port 4040

```
last login: Fri Jun 12 11:18:27 2021 from 10.2.11.73:2
devuser@backend2-66543210014:~$ sudo ufw allow 4040
[sudo] password for devuser:
Rule added
Rule added (v6)
devuser@backend2-66543210014:~$
```

เข้าไฟล์

คัดลอกไฟล์

```
devuser@backend2-66543210014:/etc/nginx/sites-available$ ls
default  server
devuser@backend2-66543210014:/etc/nginx/sites-available$ sudo nano server
devuser@backend2-66543210014:/etc/nginx/sites-available$ sudo nano default
devuser@backend2-66543210014:/etc/nginx/sites-available$ sudo cp server backend2
```

เข้าไปในไฟล์และแก้ไขข้อมูล

```
devuser@backend2-66543210014:/etc/nginx/sites-available$ sudo nano backend2
```

```
GNU nano 6.2                                     backend2
##
# You should look at the following URL's in order to grasp a solid understanding
# of Nginx configuration files in order to fully unleash the power of Nginx.
# https://www.nginx.com/resources/wiki/start/
# https://www.nginx.com/resources/wiki/start/topics/tutorials/config_pitfalls/
# https://wiki.debian.org/Nginx/DirectoryStructure
#
# In most cases, administrators will remove this file from sites-enabled/ and
# leave it as reference inside of sites-available where it will continue to be
# updated by the nginx packaging team.
#
# This file will automatically load configuration files provided by other
# applications, such as Drupal or Wordpress. These applications will be made
# available underneath a path with that package name, such as /drupal8.
#
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed examples.
##

# Default server configuration
#
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;
    }
}
```

## รีสตาร์ท nginx

```
devuser@backend2-66543210014:/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. Thanaphon Payao (devuser)
 2. ,,, (non)
Choose identity to authenticate as (1-2): 1
Password:
==== AUTHENTICATION COMPLETE ===
devuser@backend2-66543210014:/etc/nginx/sites-available$
```

## เพิ่มโดเมน

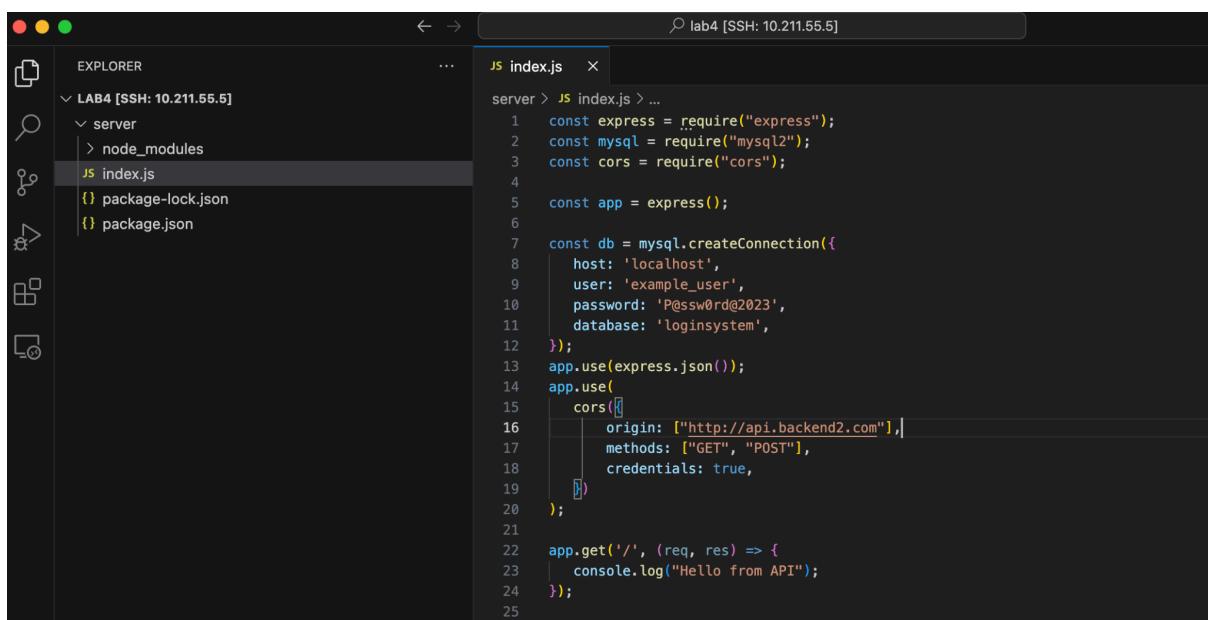
```
UW PICO 5.09          File: /etc/hosts          Modified

## 
# 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
10.211.55.3    ubuntu-linux--se-.shared ubuntu-linux--se- #prl_hostonly shared
10.211.55.5    backend_server_ip_address
10.211.55.5    api.backend2.com
10.211.55.3    weblogin.se-rmutil.net
10.211.55.3    nodelogin.se-rmutil.net
10.211.55.3    myapp.se-rmutil.net expressjs-example.se-rmutil.net my-react-app.$
10.211.55.6    web1.midterm-engse202-014.com
10.211.55.6    web2.midterm-engse202-014.com
10.211.55.3    web1.backend1.com web2.backend1.com react1.backend1.com react2.$

^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-rmutil.net"], => origin: ["http://api.backend2.com"],



```
server > JS index.js > ...
1  const express = require("express");
2  const mysql = require("mysql2");
3  const cors = require("cors");
4
5  const app = express();
6
7  const db = mysql.createConnection({
8      host: 'localhost',
9      user: 'example_user',
10     password: 'P@ssw0rd2023',
11     database: 'loginsystem',
12 });
13 app.use(express.json());
14 app.use(
15     cors({
16         origin: ["http://api.backend2.com"],
17         methods: ["GET", "POST"],
18         credentials: true,
19     })
20 );
21
22 app.get('/', (req, res) => {
23     console.log("Hello from API");
24});
```

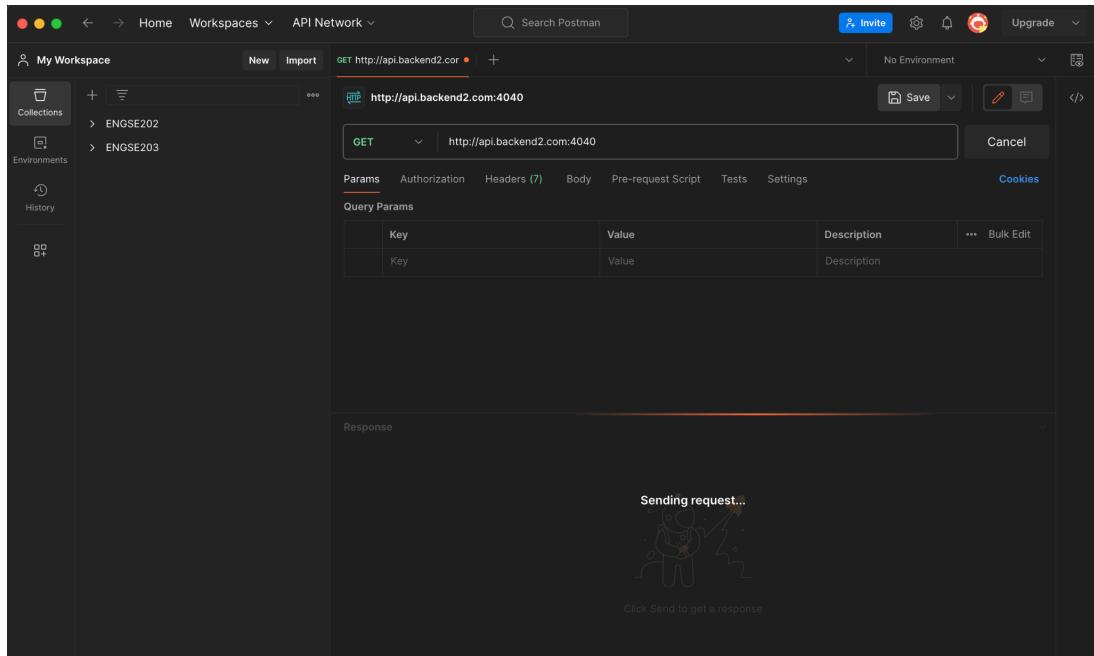
## step 10

รัน server

```
devuser@backend2-66543210014:/var/www/lab4/server$ node index.js
running server
Hello from API
```

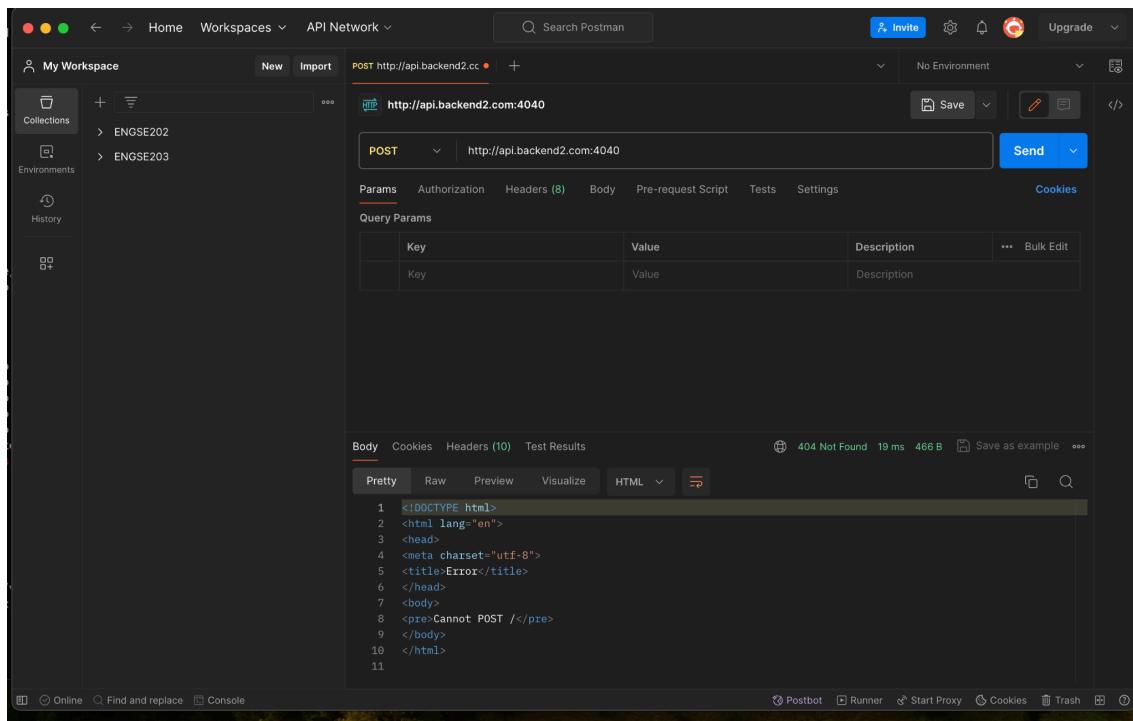
POSTman : http://api.backend2.com:4040

GET



The screenshot shows the Postman application interface. On the left, there's a sidebar with 'My Workspace' containing collections like 'ENGSE202' and 'ENGSE203'. The main area has a search bar at the top with 'Search Postman'. Below it, a header bar shows 'GET http://api.backend2.com:4040'. The request type dropdown is set to 'GET'. The URL field contains 'http://api.backend2.com:4040'. Underneath, there are tabs for 'Params', 'Authorization', 'Headers (7)', 'Body', 'Pre-request Script', 'Tests', and 'Settings'. The 'Headers' tab is selected, showing a table with one row: 'Key' and 'Value'. The 'Body' tab is also visible. At the bottom of the request panel, it says 'Click Send to get a response'. Above the request panel, the status bar displays 'Sending request...' with a small cartoon character icon.

POST



This screenshot shows the same Postman interface as the previous one, but with a POST request instead of a GET. The request type dropdown is now 'POST'. The URL field still shows 'http://api.backend2.com:4040'. The 'Headers' tab is selected, showing a table with one row: 'Key' and 'Value'. The 'Body' tab is selected, showing the raw HTML response: <!DOCTYPE html> <html lang="en"> <head> <meta charset="utf-8"> <title>Error</title> </head> <body> <pre>Cannot POST /</pre> </body> </html>. The status bar at the bottom indicates a 404 Not Found error with a 19 ms response time and 466 B size. Other tabs like 'Cookies', 'Headers (10)', and 'Test Results' are also visible.

## step 11

เข้าไปในโฟล์เดอร์ nginx

- cd /var/www/nginx

สร้างไฟล์ backend1

- mkdir backend1

เข้าไปในโฟล์เดอร์ backend1

- cd backend1

สร้างโปรเจกต์ react

- npx create-react-app .

```
devuser@backend1-66543210014:/var/www/nginx/backend1$ sudo npx create-react-app .
Need to install the following packages:
create-react-app@5.0.1
Ok to proceed? (y) y
npm WARN deprecated tar@2.2.2: This version of tar is no longer supported, and will not receive
rity updates. Please upgrade asap.

Creating a new React app in /var/www/nginx/backend1.

Installing packages. This might take a couple of minutes.
Installing react, react-dom, and react-scripts with cra-template...

added 1484 packages in 49s

250 packages are looking for funding
  run `npm fund` for details

Initialized a git repository.

Installing template dependencies using npm...
added 69 packages, and changed 1 package in 5s

254 packages are looking for funding
  run `npm fund` for details
Removing template package using npm...

removed 1 package, and audited 1553 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
```

ແລ້ວຮັບໂນທ vscode

ນຳໂຄດເຂົາໃສໃນ VSCode

App.js ແກ້ພອർຕເປັນ 4040

```
1 import React, { 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://api.backend2.com: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  const login = () => {
27    Axios.post("http://api.backend2.com:4040/login", {
28      username: username,
29      password: password,
30    }).then((response) => {
31      console.log(response);
32      //console.log("response.data.message: "+response.data[0].message);
33
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
```

ໄປທີ່ໄຟລ package.json ເພີ່ມພອർຕ 3012 ເຂົ້າໄປ

```
"scripts": [
  "start": "PORT=3012 react-scripts start",
  "build": "react-scripts build",
  "test": "react-scripts test",
  "eject": "react-scripts eject"
]
```

ອນຄູາຕີ port 3012

```
devuser@backend1-66543210014:/var/www/nginx/login$ sudo ufw allow 3012
Rule added
Rule added (v6)
```

ເຂົ້າໄປຢັ້ງໂຟລເດວົຣ sites-available

ຄັດລອກໄຟລ backend2

ເຂົ້າໄປຢັ້ງໄຟລ backend2

```
devuser@backend1-66543210014:/etc/nginx/sites-available$ sudo cp nodelogin backend2
devuser@backend1-66543210014:/etc/nginx/sites-available$ sudo nano backend2
```

```
server {
    listen 80;
    listen [::]:80;
    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;
    }
}
```

## รีสตาร์ท nginx

```
devuser@backend2-66543210014:/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. Thanaphon Payao (devuser)
2. ,,, (non)
Choose identity to authenticate as (1-2): 1
Password:
==== AUTHENTICATION COMPLETE ===
```

sudo nano /etc/hosts

เพิ่มโดเมน 10.211.55.3 login.backend1.com

ติดตั้ง express

ติดตั้ง mysql2

ติดตั้ง cors

```
devuser@backend1-66543210014:/var/www/nginx/login$ npm install express --save
up to date, audited 1553 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@backend1-66543210014:/var/www/nginx/login$ npm install --save mysql2
added 10 packages, and audited 1563 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@backend1-66543210014:/var/www/nginx/login$ npm i --save cors
added 1 package, and audited 1564 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.
```

ให้รันแบบโดเมนโดยเข้าไปแก้พอร์ตใน server/index.js

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

```
1  const express = require("express");
2  const mysql = require("mysql2");
3  const cors = require("cors");
4  const app = express();
5
6  const db = mysql.createConnection({
7    host: 'localhost',
8    user: 'example_user',
9    password: 'P@ssw0rd@2023',
10   database: 'loginsystem',
11 });
12 app.use(express.json());
13 app.use(
14   cors({
15     origin: ["http://login.backend1.com"],
16     methods: ["GET", "POST"],
17     credentials: true,
18   })
19 );
20
21
22 app.get('/', (req, res) => {
23   console.log("Hello from API");
24 });
25
26
27 app.post('/login', (req, res) => [
28   let username = req.body.username;
29   let password = req.body.password;
30   console.log("body: " + JSON.stringify(req.body));
31   console.log("username: "+username);
32   console.log("password: "+password);
33
34
35   db.execute(
36     "SELECT * FROM users WHERE username = ? AND password = ?",
37     [username, password],
38     (err, result) => {
39       if (err) {
40         res.send({ err: err });
41       }
42       if (result.length > 0) {
43         res.send(result);
44       } else {
45         res.send({ message: "Wrong username/password comination!" });
46       }
47     }
48   );
49 ];
50 app.post('/register', (req, res) => {
51   let username = req.body.username;
52   let password = req.body.password;
53   console.log("body: " + JSON.stringify(req.body));
54   console.log("username: "+username);
55   console.log("password: "+password);
56   db.execute(
57     "INSERT INTO users (username, password) VALUES (?,?)",
58     [username, password],
59     (err, result) => {
60       if (err) {
61         res.send({ err: err });
62       }
63       res.send(result);
64     }
65   );
66
67
68 app.listen(4040, () => {
69   console.log("running server");
70 });
```

รันแบบโดเมน

```
devuser@backend2-66543210014:/var/www/lab4/server$ node index.js
running server
body: {"username":"test","password":"test"}
username: test
password: test
body: {"username":"test","password":"test"}
username: test
password: test
```

The screenshot shows a web browser window with the URL `login.backend1.com`. The page contains two forms: a registration form and a login form.

**Registration Form:**

- Label: Username
- Input field: `test`
- Label: password
- Input field: `test`
- Button: Register

**Login Form:**

- Input field: `test`
- Input field: `...`
- Button: Login

A message at the bottom of the page reads: **'test' was logged in.**