

# 網站前後端工程 技術分享暨課程

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# whoami

咪路 <mail@mirumo.org>

- SITCON'21 開發組
- 行動裝置應用程式
- 前 / 後端應用
- <https://mirumo.org>



在開始之前...

# 你必須先知道....

## 先備知識

- What are the different between Frontend / backend...
- What is http(s)...
- What are API and Restful API...
- What is the web browser doing...
- What is Framework...

Frontend / Backend (前端 / 後端)

# Frontend (前端)

一切使用者看得到的東西

- HTML (Hyper Text Markup Language)
- CSS (Cascading Style Sheets)
- Javascript





# Backend(後端)

用戶沒有直接看得到的東西

- Python
- PHP
- Ruby
- Node.js



# HTTP(s) - 超文本傳輸協定

## Hyper Text Transfer Protocol



# HTTP

## RFC2616

```
→ ~ curl mirumo.org -v
* Trying 185.199.109.153...
* TCP_NODELAY set
* Connected to mirumo.org (185.199.109.153) port 80 (#0)
> GET / HTTP/1.1
> Host: mirumo.org
> User-Agent: curl/7.64.1
> Accept: */*
>
< HTTP/1.1 200 OK
< Server: GitHub.com
< Content-Type: text/html; charset=utf-8
< Last-Modified: Fri, 03 Dec 2021 00:22:59 GMT
< Access-Control-Allow-Origin: *
< ETag: "61a96363-39d"
< expires: Fri, 03 Dec 2021 12:05:12 GMT
< Cache-Control: max-age=600
< x-proxy-cache: MISS
< X-GitHub-Request-Id: 6FAE:2FBE:1C95C7:23DFC1:61AA05A0
< Content-Length: 925
< Accept-Ranges: bytes
< Date: Fri, 03 Dec 2021 11:55:12 GMT
< Via: 1.1 varnish
< Age: 0
< Connection: keep-alive
< X-Served-By: cache-qpg1230-QPG
< X-Cache: MISS
< X-Cache-Hits: 0
< X-Timer: S1638532512.060199,VS0,VE247
< Vary: Accept-Encoding
< X-Fastly-Request-ID: 458d803c0268a2b1ac2cb338b781c56f23ab9f3f
<
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>咪路</title>
    <link rel="stylesheet" href="/static/css/index.css" />
  </head>
```



# Try It...

## TCP

```
→ ~ nc -lvp [port]  
→ ~ nc -lv 3000
```

```
Hello  
> Hello  
█
```

```
→ ~ nc -v [ip] [port]  
→ ~ nc -v 127.0.0.1 3000  
Connection to 127.0.0.1 port 3000 [tcp/  
hbcil] succeeded!  
  
Hello  
> Hello
```

**Try It...**  
**HTTP as Server**

```
nc -lvp [port]
```

# Try It...

## HTTP as Client

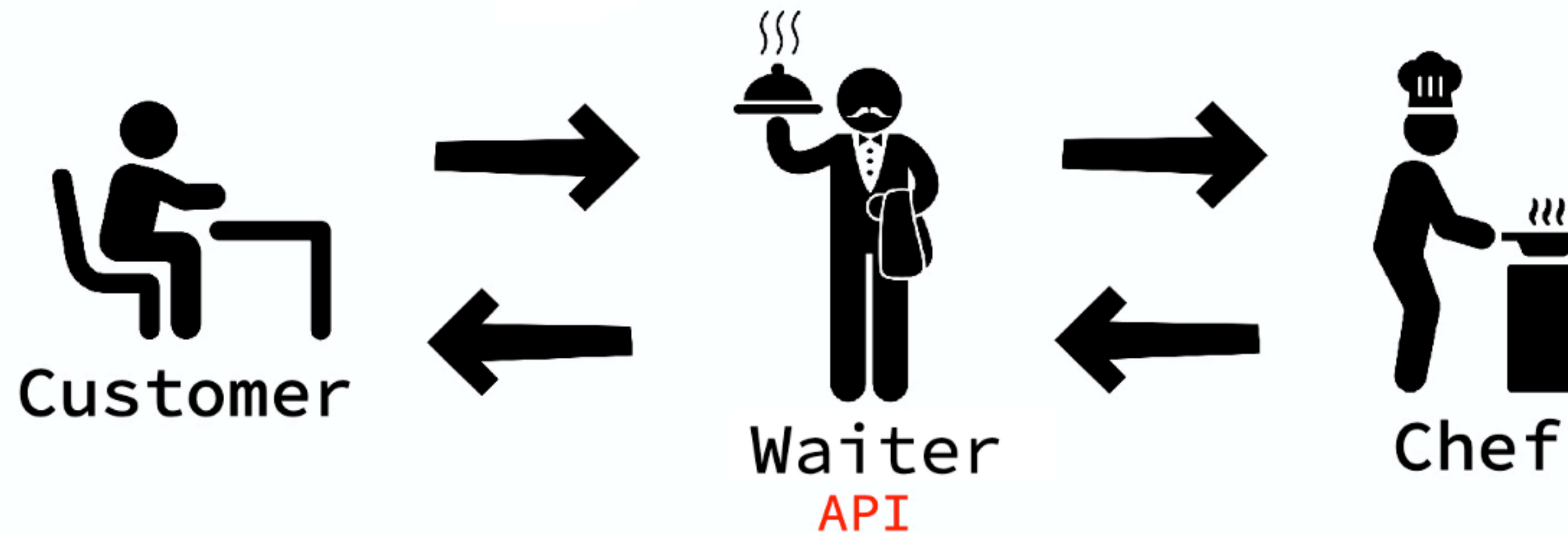
```
npx http-server .  
python -m http.server
```

# API

## Application Programming Interface

## API receives a request

Similar to how a waiter takes an order from a customer to relay to the chef



API collects and processes a response, then returns with that response

As a waiter would return the completed meal from the chef to the customer

Source: [A Beginner's Guide to APIs](#)



# Restful API

# 在原有 http 的基礎下...

- GET to retrieve a resource.
- POST to create a resource.
- PUT to change the state or update the resource.
- DELETE to remove the resource.

# Web Browsers Actually Doing...

# First...

首先...

詢問 DNS 該網址(域名)的 service ip

# Second...

向該 ip 請求所需要的資源(html, css, js...)

# Third...

伺服器回應請求之後。

將結果渲染在畫面上...

(網頁上互動的 js 也是在這時候執行)









# Frameworks - 框架

# 各種框架

- Flask(python), Express.js(nodejs), Ruby on Rail(ruby)
- React.js, Vue.js, Svelte, jQuery
- Bootstrap, Tailwind css,

你即將在這學期學到...

# Overview

- Git 
- Sample HTML / CSS   
- Javascript
- Node.js 
- Frontend Framework - Vue.js 
- Backend Framework - Express.js 
- Fullstack - MEVN

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