

# A Very Brief Introduction to Web Application Development (I)

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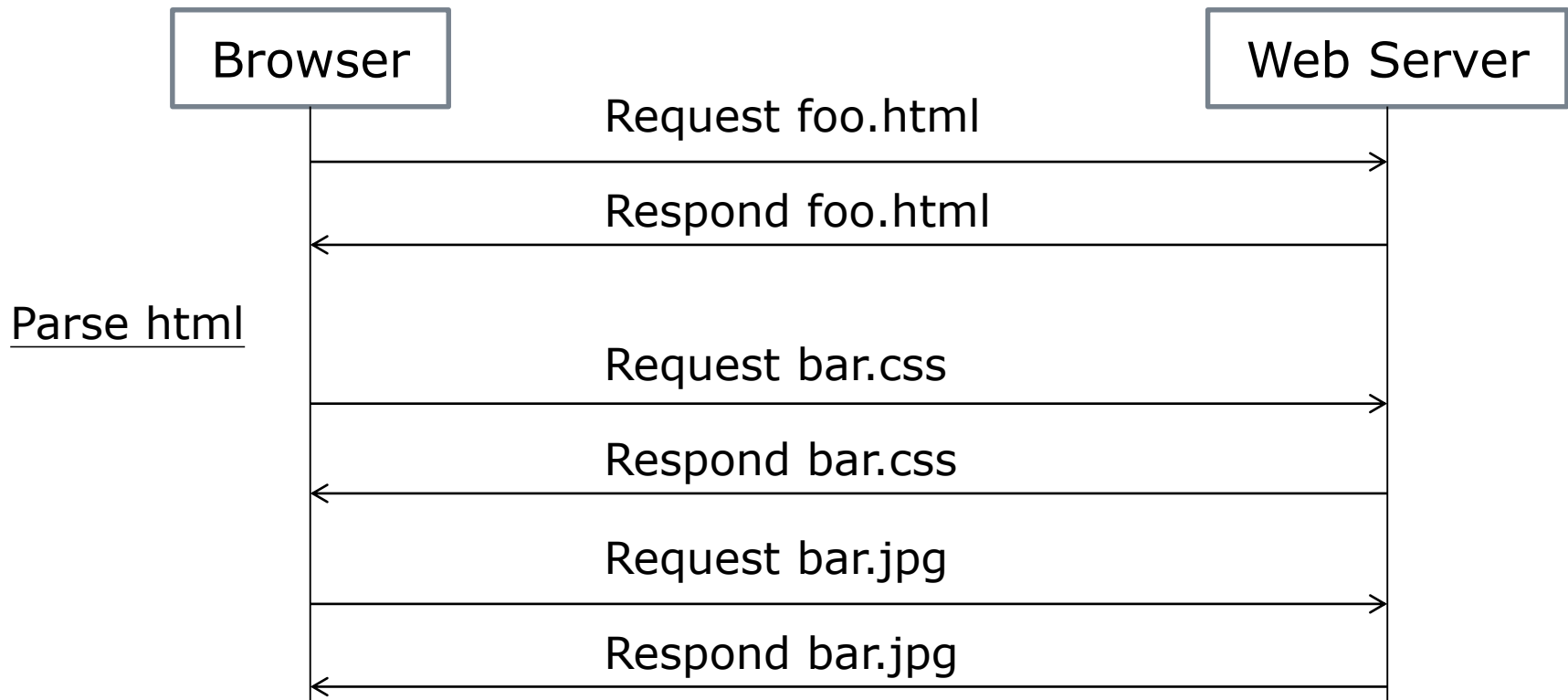
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# Static Web Application

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# Control Flow

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# An Example HTML File

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```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>Abstract</h1>
    <p>Blah blah blah</p>
    <h1>Introduction</h1>
    <p>Blah blah blah</p>
  </body>
</html>
```

## Abstract

Blah blah blah

## Introduction

Blah blah blah

# Decorating HTML Pages

---

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1><i>Abstract</i></h1>
    <p><i>Blah blah blah</i></p>
    <h1>Introduction</h1>
    <p>Blah blah blah</p>
  </body>
</html>
```

***Abstract***

*Blah blah blah*

**Introduction**

Blah blah blah

# Decorating HTML Pages With Internal CSS

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <style>
      p {
        font-style: italic;
      }
    </style>
  </head>
  <body>
    <h1>Abstract</h1>
    <p>Blah blah blah</p>
    <h1>Introduction</h1>
    <p>Blah blah blah</p>
  </body>
</html>
```

---

## Abstract

*Blah blah blah*

## Introduction

*Blah blah blah*

---

# Class and ID

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```
<h1 class="abs">Abstract</h1>  
<p class="abs">Blah blah blah</p>
```

```
<h1 id="intro-header" class="text-header">Introduction</h1>  
<p id="intro" class="text">Blah blah blah</p>
```

```
<h1 id="work-header" class="text-header">Related Work</h1>  
<p id="work" class="text">Blah blah blah</p>
```

```
<h1 id="method-header" class="text-header">Proposed  
Method</h1>  
<p id="method" class="text">Blah blah blah</p>
```

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## □ Class

- `.class_name { }`

```
.text {  
    font-style: italic;  
}
```

## □ ID

- `#id { }`

```
#intro {  
    font-style: italic;  
}
```



# External CSS

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## ☐ Using external CSS

```
<head>
```

```
  <link rel="stylesheet" type="text/css" href="mystyle.css">
```

```
</head>
```

## ☐ CSS framework

- Bootstrap

- jQuery UI

- ...

# JavaScript

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- ❑ JavaScript is used in front end to provide interaction, input validation...

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <button type="button"
      onclick="alert('Hello World!')">Click Me!</button>
  </body>
</html>
```

---

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <script>
      function func() {
        alert('Hello World!');
      }
    </script>
  </head>
  <body>
    <button type="button" onclick="func()">Click Me!</button>
  </body>
</html>
```

A rectangular button with a light gray background and a thin black border. The text "Click Me!" is centered on the button in a black, sans-serif font.

An alert dialog box with a light gray background and a thin black border. It has a close button (X) in the top right corner. The text "這個網頁顯示：" is at the top, and "Hello World!" is below it. A blue button with the text "確定" is in the bottom right corner.

這個網頁顯示：

Hello World!

確定

# External JavaScript

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```
<script src="https://foo.com/bar.js"></script>
```

## □ JavaScript Framework

- jQuery

- ...

# Bootstrap

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- ❑ RWD: Response Web Design
  - Different web layouts for different types of devices (PC, tablet, smartphone...)
  - Most modern CSS framework supports RWD
- ❑ Provide a configurable UI theme
- ❑ Button Styles



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```
<button type="button" class="btn">Basic</button>
<button type="button" class="btn btn-default">Default</button>
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-link">Link</button>
```

# Using Bootstrap

---

- Add the following lines into the `<head></head>`

```
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.
.7/css/bootstrap.min.css">
```

```
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.
7/js/bootstrap.min.js"></script>
```

# Using Bootstrap and JavaScript

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□ In `<head></head>`

```
<script>  
  function func() {  
    document.getElementById("btn").className="btn btn-warning";  
    alert('Hello World!');  
  }  
</script>
```



□ In `<body></body>`

```
<button type="button" id="btn" class="btn btn-primary"  
onclick="func()">Click Me!</button>
```



# HTTP: HyperText Transfer Protocol

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- HTTP is stateless
- Solution
  - Cookie
- Tutorial of HTTP
  - <https://www.tutorialspoint.com/http/>
  - URL Encoding

# HTTP Request

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- Request methods

  - GET, POST, UPDATE, CREATE,...

- GET

GET /foo.php?ID=string&content=string HTTP/1.1

User-Agent: Mozilla/4.0

Host: www.tutorialspoint.com

Content-Type: application/x-www-form-urlencoded

Content-Length: length

Accept-Language: en-us

Accept-Encoding: gzip, deflate

Connection: Keep-Alive

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## □ POST

POST /foo.php HTTP/1.1

User-Agent: Mozilla/4.0

Host: www.tutorialspoint.com

Content-Type: application/x-www-form-urlencoded

Content-Length: length

Accept-Language: en-us

Accept-Encoding: gzip, deflate

Connection: Keep-Alive

ID=string&content=string

# HTTP Response

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HTTP/1.1 200 OK

Date: Mon, 27 Jul 2009 12:28:53 GMT

Server: Apache/2.2.14 (Win32)

Last-Modified: Wed, 22 Jul 2009 19:15:56 GMT

Content-Length: 88

Content-Type: text/html

Connection: Closed

<html>

<body>

<h1>Hello, World!</h1>

</body>

</html>

# Cookie

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- ❑ Set cookie in HTTP response  
Set-Cookie: Name=content data; expires=Fri,  
31-Dec-2010 23:59:59 GMT; path=/;  
domain=.example.net
- ❑ Show cookie in HTTP request  
Cookie: Name=content data

- 
- ❑ The storage of cookie is limited
  - ❑ Cookie without “expires” can be used to tracking user behavior
  - ❑ Cookie without “expires” is used to implement session
    - Cookie without “expires” will be removed when the browser is closed

# Reference

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- ❑ <https://www.w3schools.com/>
- ❑ HTTP Tutorial,  
<https://www.tutorialspoint.com/http/>
- ❑ An Introduction to Cookies,  
<https://code.tutsplus.com/tutorials/an-introduction-to-cookies--net-12482>