

A Very Brief Introduction to Web Application Development (I)

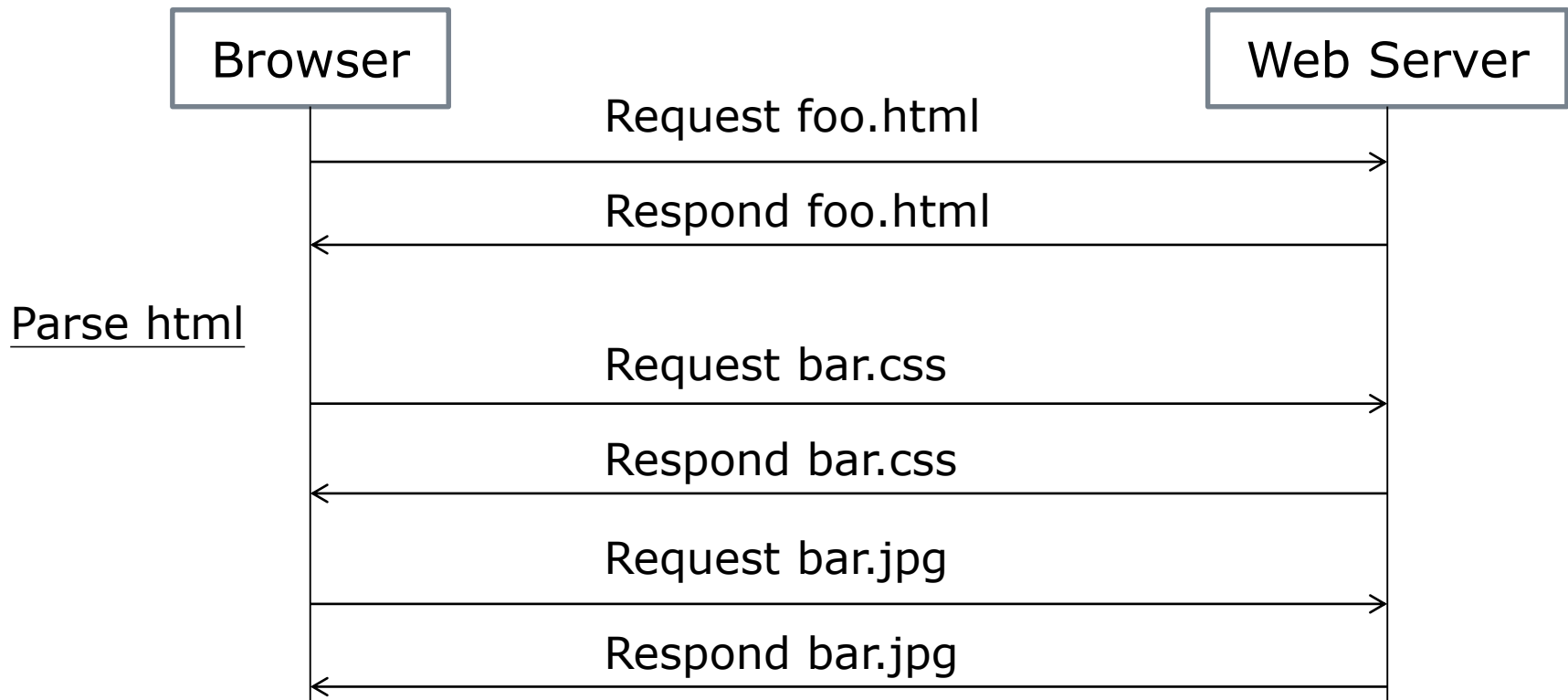
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Static Web Application

Control Flow



An Example HTML File

```
<!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

```
<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>
```

□ Class

- `.class_name { }`

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

□ ID

- `#id { }`

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

External CSS

□ Using external CSS

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

□ CSS framework

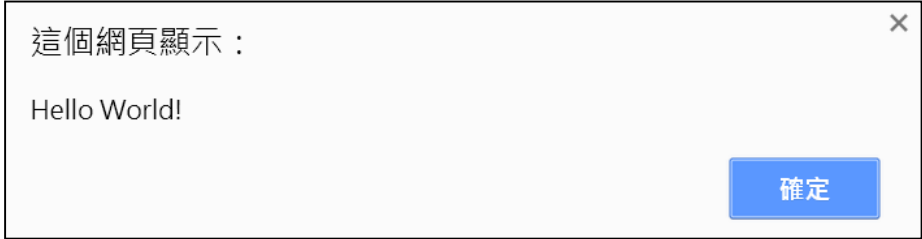
- Bootstrap
- jQuery UI
- ...

JavaScript

- ❑ 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>
```



這個網頁顯示 :

Hello World!

確定

External JavaScript

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

□ JavaScript Framework

- jQuery

- ...

Bootstrap

- ❑ 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



```
<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

□ 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

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

HTTP Request

- 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

□ 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

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

- ❑ 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

- ❑ <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>