

Chapter 1

Introduction to web development



Objectives

- How web application work
- The components of a JavaScript application
- How to test a JavaScript application
- How to develop a JavaScript application



How web application work?



Definitions

1. World Wide Web (Web)

- WWW consist of all the public Web sites connected to the Internet worldwide, including the client devices that access Web content.
- The WWW is just one of many applications of the Internet and computer networks.

2. Web Application

- **Web Application** includes Client and Server
- **Clients** are the computer, tablets and mobiles devices that use the web applications.
- **Web server** holds the files that make up a web applications.

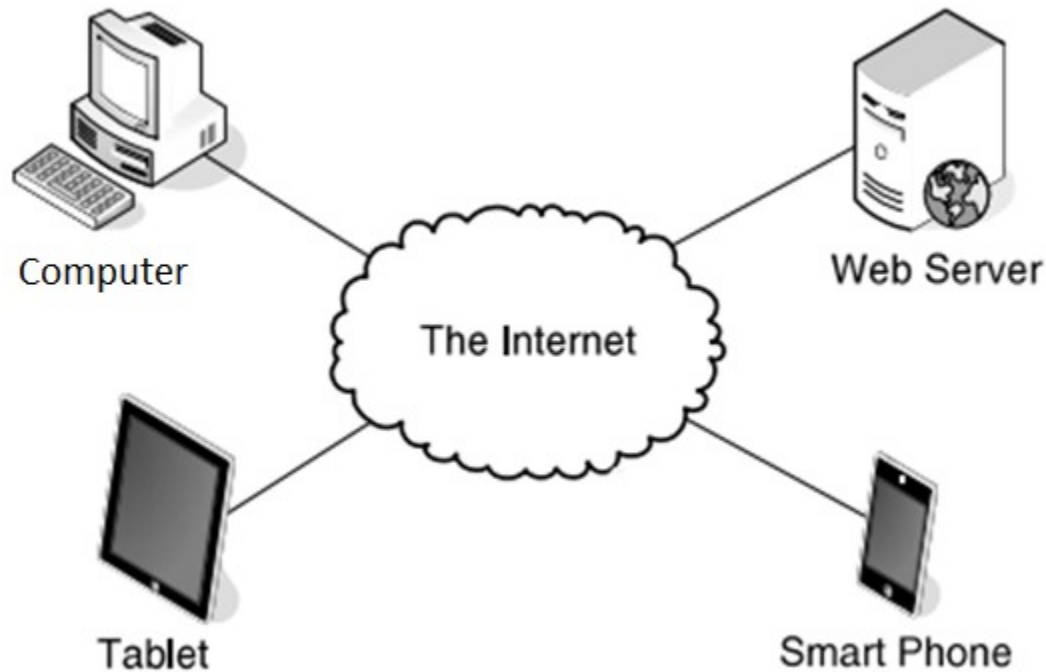


Definitions (cont)

- Network
- LAN: Local Area Network
- WAN: Wide Area Network
- ISP: Internet Service Provider
- IXP: Internet Exchange Points
- IP: Internet Protocol



Components of web application



Web Page

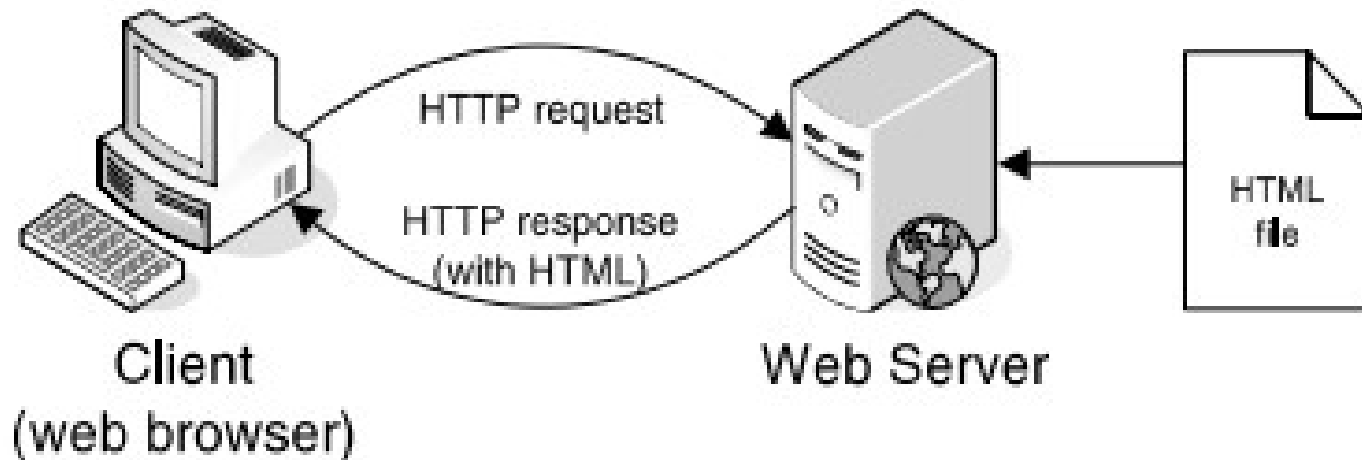
- Web page is a page content display on web browser
- Web page include
 - Static web page
 - Dynamic web page



A web page

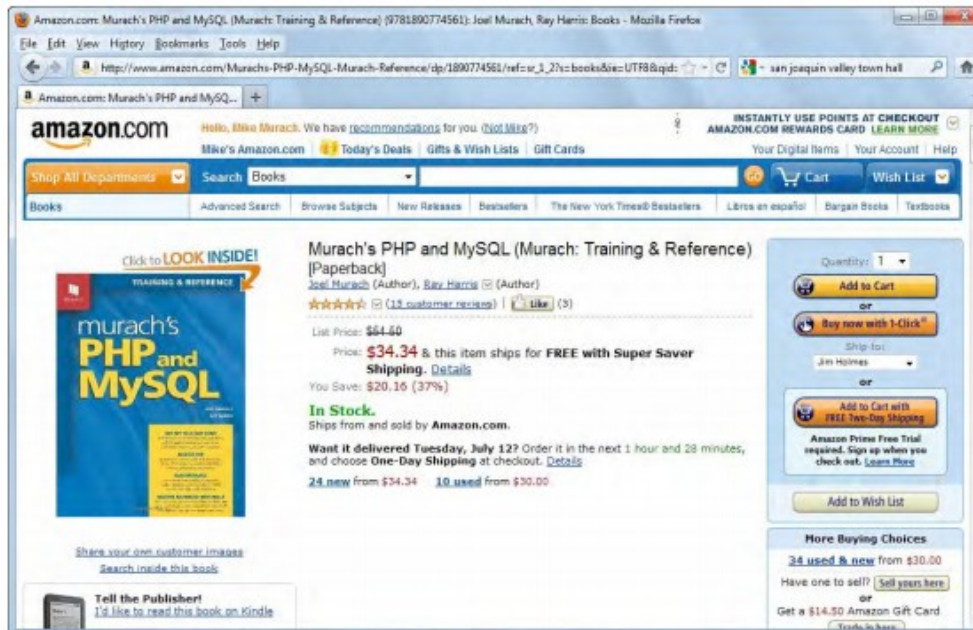


Static web pages are processed

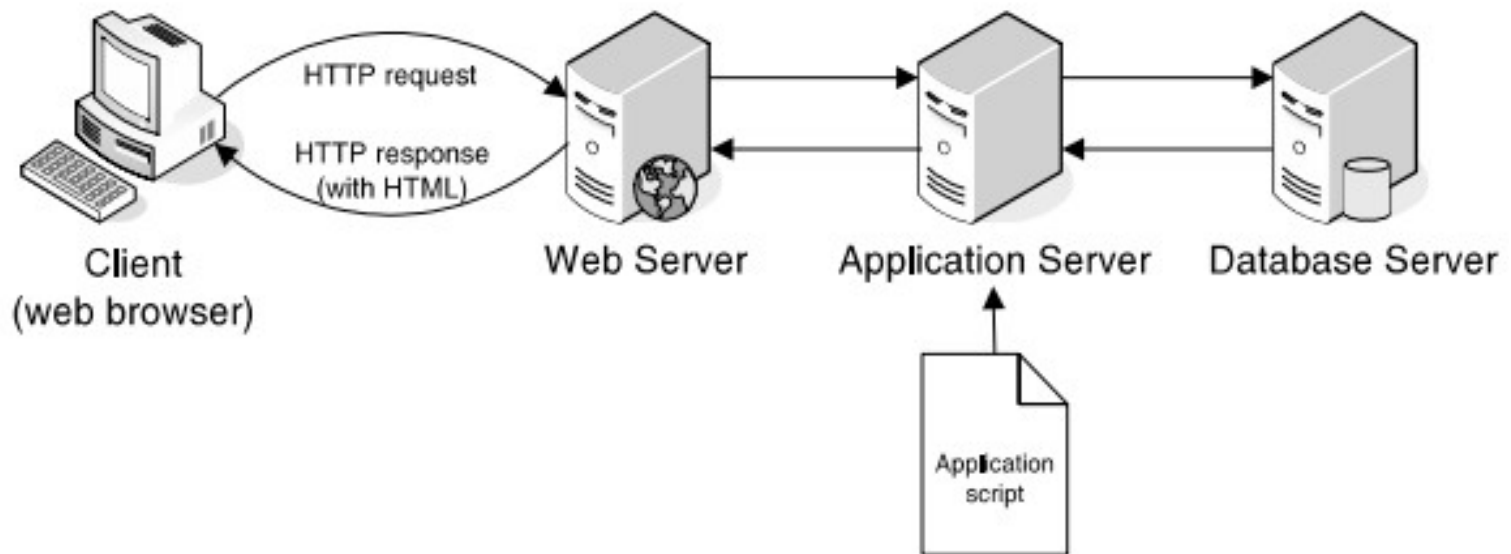


Dynamic web pages are processed

- A dynamic web page is a web page that's generated by a server – side program or script.
- A dynamic web page at amazon.com



Web server processes a dynamic web page



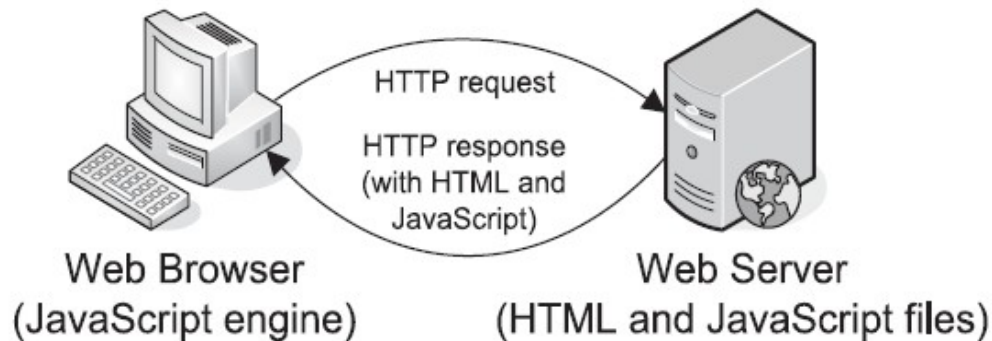
JavaScript and jQuery introduction

- **JavaScript** is a **scripting language** that is run by the **JavaScript engine** of a web browser and controls the operation of the browser.
- **jQuery** is a **JavaScript library** that makes it easier to do many of the common functions that JavaScript is used for.
- JavaScript based on the ECMAScript specification which was founded by Netscape in 1995 and the newest version was updated on June 2016.



How JavaScript used for client-side processing (cont.)

- How JavaScript fits into web architecture



- Three of the many uses of JavaScript and jQuery
 - Data validation
 - Image swap and rollovers
 - Slide shows



The components of a JavaScript applications

- The JavaScript application includes:
 - HTML
 - CSS
 - JavaScript



The code of JavaScript

The script element in the HTML file that includes the JavaScript file

```
<script src="email_list.js"></script>
```

The code for the JavaScript file named email_list.js

```
var $ = function (id) {
    return document.getElementById(id);
}
var joinList = function () {
    var emailAddress1 = $("email_address1").value;
    var emailAddress2 = $("email_address2").value;
    var isValid = true;

    if (emailAddress1 == "") {
        $("email_address1_error").firstChild.nodeValue =
            "This field is required.";
        isValid = false;
    } else { $("email_address1_error").firstChild.nodeValue = ""; }

    if (emailAddress1 != emailAddress2) {
        $("email_address2_error").firstChild.nodeValue =
            "This entry must equal first entry.";
        isValid = false;
    } else { $("email_address2_error").firstChild.nodeValue = ""; }

    if ($("first_name").value == "") {
        $("first_name_error").firstChild.nodeValue =
            "This field is required.";
        isValid = false;
    } else { $("first_name_error").firstChild.nodeValue = ""; }

    if (isValid) {
        // submit the form if all entries are valid
        $("email_form").submit();
    }
}
window.onload = function () {
    $("join_list").onclick = joinList;
    $("email_address").focus();
}
```



How to test a JavaScript application



How to run a JavaScript application

- The JavaScript file is loaded and run when web page is loaded. So run a JavaScript application same with run a web page.



How to find errors in your code

- You can use Chrome's developer tools to find errors in JavaScript code.
- Press F12 or Ctrl + Shift + I to open developer tool.



How to develop a JavaScript application

- Open new project
- Add HTML, CSS file for project
- Add JavaScript file and add link to html file
- Run and test project result



Summary

- Web application consist of client , a web server and network
- **JavaScript** is a **scripting language** that is run by the **JavaScript engine** of a web browser.
- **jQuery** is a **JavaScript library** that make it easier to do many of the common functions that JavaScript is used for.
- The ECMAScript specification provides the standards that JavaScript implements.
- The JavaScript application includes:
 - HTML
 - CSS
 - JavaScript

