Introduction to HTML5 document

HTML5

- It is the latest version of the HTML, that allows you to build true web applications with local storage, 2D drawing, offline support, sockets and threads, and more
- Differences between HTML 4 and HTML 5:
  - the doctype definition that tells the web browser the type of your document.

`<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">`

This standard is publicly available

This part says we're using HTML version 4.01 and that this markup is written in ENglish

This points to a file that identifies this standard

HTML5 → `<!DOCTYPE html>`

- This doctype is going to every future versions. So it is never going to change again
- Since this is no version number anymore, it means that the browsers need to be able to support new stuff, but also keep supporting the old stuff in future.

W3C validator

- The W3C have a free online validator to help you to validate your web page. http://validator.w3.org

The basic structure of HTML5 document

```
<!doctype html>
<html>
<head>
  <meta charset="UTF-8">
  <title>Simple HTML Document</title>
</head>
<body>
  <h1>First Example</h1>
  <p>This is the first paragragh.</p>
  <p>This is the second paragragh.</p>
  <p>This is the third paragragh.</p>
</body>
</html>
```

DOCTYPE declaration

Head element

Document tree

Body element
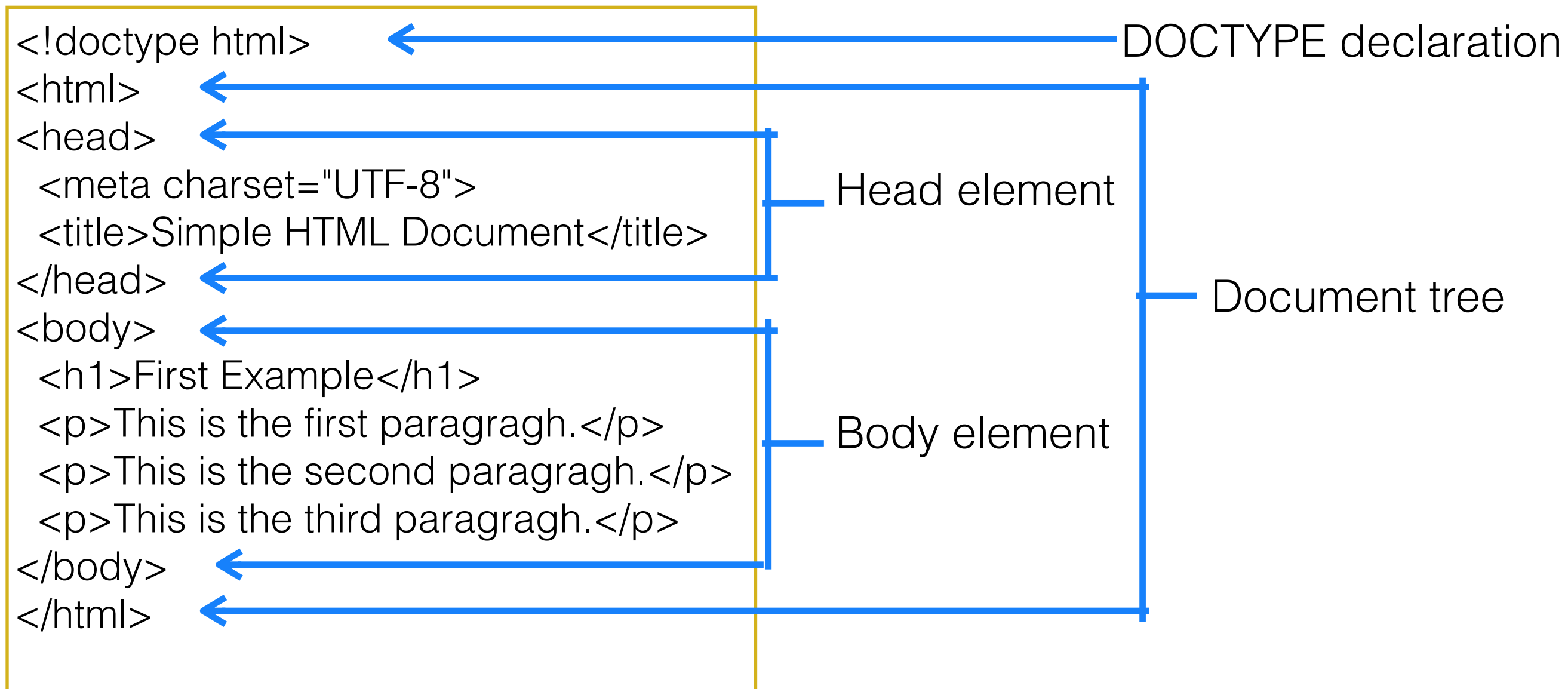
- An HTML document contains HTML elements that define the content and structure of a web page.
- Consists of two parts: the DOCTYPE declaration and the document tree.
- The DOCTYPE declaration shown in the example indicates the document uses HTML5
- The document tree starts with HTML element that marks the beginning and end of the HTML code.
- The HTML element always contains one head element that provides information about the document and one body element that provides the structure and content.

Coding elements and tags

- Most HTML elements have an opening tag, content, and a closing tag.

Examples:
- Two elements with opening and closing tags
  <h1>This is the first heading. </h1>
  <p>Here is the first paragraph. </p>
- Two empty tags

  <img src="face.png" alt="NPU life">
- Nested tags
  <p>This is a nested <i>loop.</i></p>

Coding attributes

- An attribute consists of the attribute name, an equal sign, an the value for the attribute.
- Attributes values must be enclosed in single and double quotes of they don't contain spaces. However, enclosing all attribute values in double quotes are recommended.
- Boolean attributes can be coded as just the attribute name. They represent either an on or off value.
- To code multiple attributes, separate each attribute with a space.
- The id attribute is used to identify a single HTML element so its value can be used for just one HTML element.
- A class attribute with the same value can be used for mote than one HTML element.

Examples:
```
<a href="about.html">
<a href="about.html" title="Click to learn more" class="quick_click">
<img src="face.png" alt="NPU life">
<div id="panels">
```

Comments and Whitespaces

- An HTML comment is text that appears between the <!-- and --> characters. Since web browsers ignore comments, we can use them to describe our HTML code if necessary.
- An HTML comment can be coded on a single line or it can be span two or more lines.
- White spaces consists of characters like tab characters, line return characters, and extra spaces.
- Use white spaces to indent lines of cod and make them easier to read. However don't overdo use of white spaces, because they do add to the size of the file.

The CSS syntax

- CSS is an abbreviation for Cascading Style Sheets, that gives you a way to tell the browser how elements in your page should look.
- A CSS rule set consists of a selector and a declaration block.
- A CSS selector consists of the identifiers that are coded at the beginning of the rule set.
- A CSS declaration block consists of an opening brace, zero or more declarations, and a closing brace.
- A CSS declaration (or rule) consists of a property, a colon, a value, and a semicolon.
- CSS comments begin with the character /* and end with the characters */

selector

property

value

```
h1
{
    color: navy;
}
```

declaration (or rule)
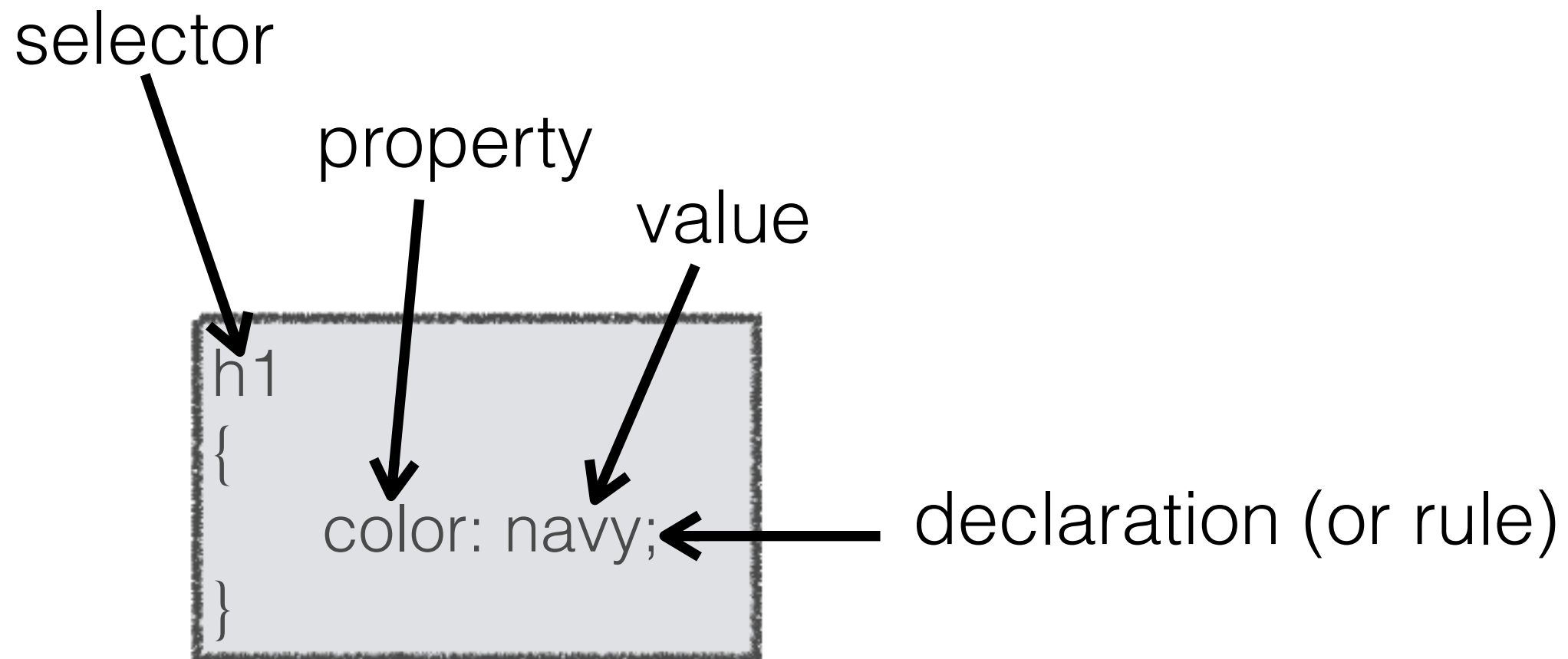
Simple HTML file with CSS file

```html
<!doctype html>
<!--
    This document displays the home page for my web site
-->
<html lang="en-us">
    <head>
        <meta charset="UTF-8" />
        <title>CS526 Web Programming Lecture I</title>
        <link rel="stylesheet" href="FirstStyle.css" />
    </head>
    <body>
        <h1>Topics</h1>
        <h2>Dynamc Web Page</h1>
        <ul>
            <li>JavaScript</li>
            <li>jQuery</li>
            <li>AJAX</li>
            <li>ASP.NET MVC4</li>
            <li>PHP</li>
            <li>Java</li>
        </ul>
        We will also use jQuery Mobile to develip mobile app
        <p>Visit our course website at lms2.npu.edu</p>
    </body>
</html>
```
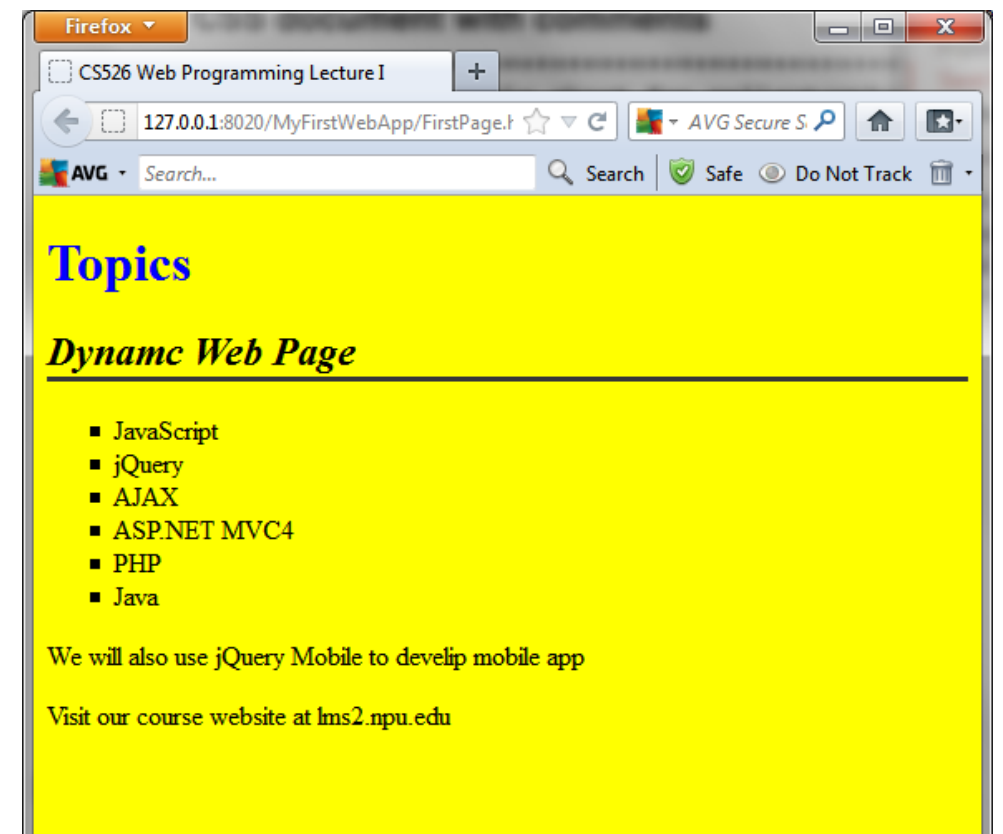
+
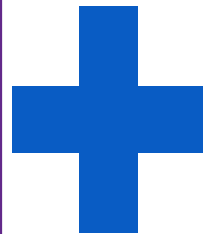
```css
/************************************************************
 * Description: The first style sheet for the first web application
 * Author: Ken Cheung
 ************************************************************/
/* Ajust the styles for the body */
body {
        background-color: #FFFF00;    /* This is a shape of yellow */
}
/* Ajust the styles for the headings */
h1 {
        color: #0000FF;
}
h2 {

        font-style: italic;
        border-bottom: 3px solid #363636;  /* Adds a line below h2 heading */
}
/* Ajust the styles for the unsordered list */
ul {
        list-style-type: squ
```

Coding selectors in HTML document

- To code a selector for an HTML element, you simply name the element. This is referred to as a type selector.
- If an element is coded with id attribute, you can code a selector for that id by coding a pound sign # followed by the id value as in #main.
- If an element is coded with a class attribute, you can code a selector for that class by coding a period followed by the class, as in .base_color.

```html
<!doctype html>
<html lang="en-us">
   <head>
      <meta charset="UTF-8" >
      <title>CS526 Web Programming Lecture I</title>
      <link rel="stylesheet" href="SecondStyle.css" >
   </head>
   <body>
      <div id="main">
      <h1 class="base_color">Course materials</h1>
      <ul id="links">
         <li><a href="handout.html">Handouts</a></li>
         <li><a href="homework.html">Homeworks</a></li>
      </ul>
      <p id="copyright" class="base_color">&copy; Copyright 2013</p>
   </body>
</html>
```
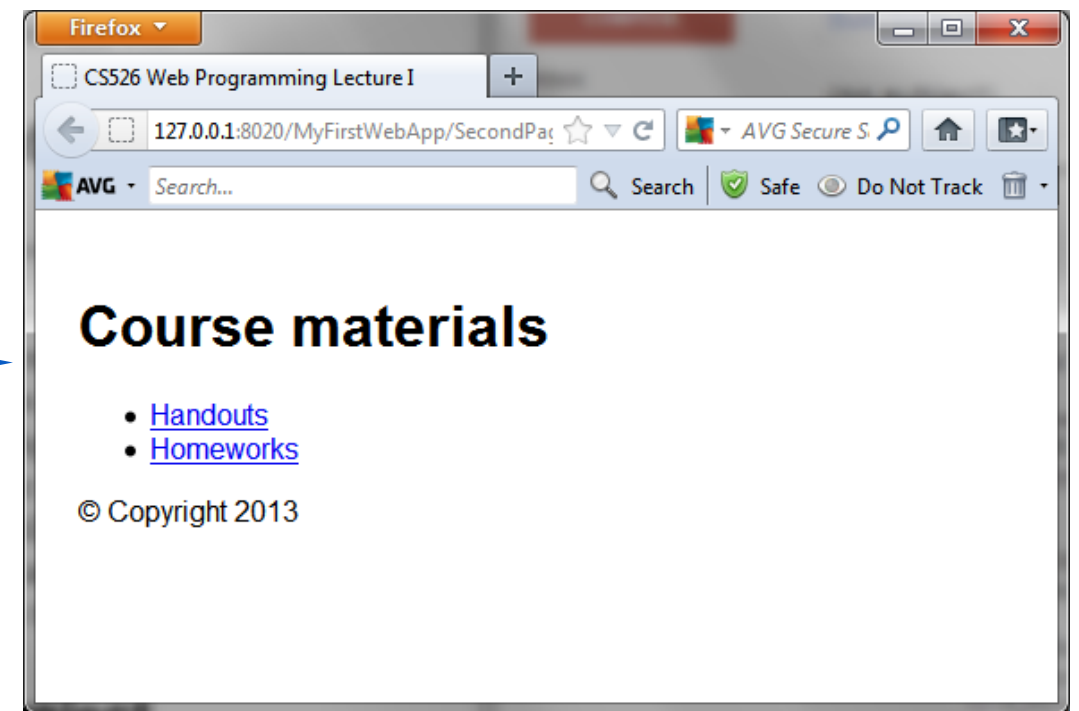
```css
body {
        font-family: Arial, sans-serif;
}
#main {
        width: 300px;
        padding: 1em;
}
.base_color {
        color: : blue;
}
```

Type

ID

Class

Using Aptana to create web project

- Each Aptana project should contain the folders and files for own web application.
- To create a project, follow these steps:
  1. Use File->New->Web Project command to display the New Web Project dialog box. Alternatively, click on the Create Project button in the App Explorer window.
  2. Select a project template in the Project Tempate dialog. Let's select Default template for this time.
  3. Enter a name for the project. Next uncheck "Use Default Location" box, click on the Browse button, and select the top-level folder for the project. Then, click the Finish button.
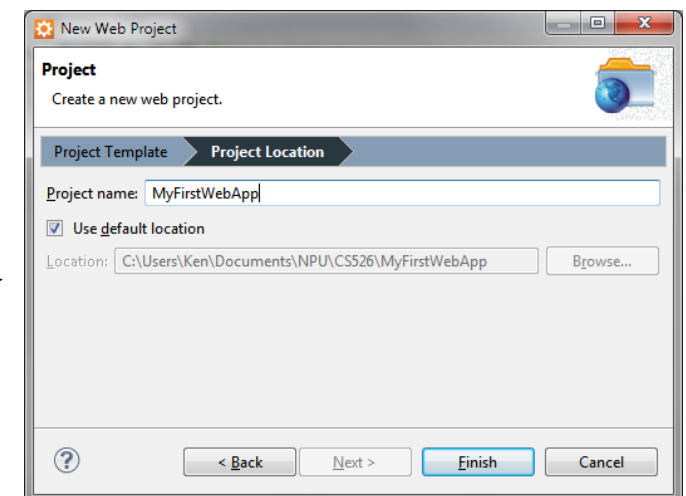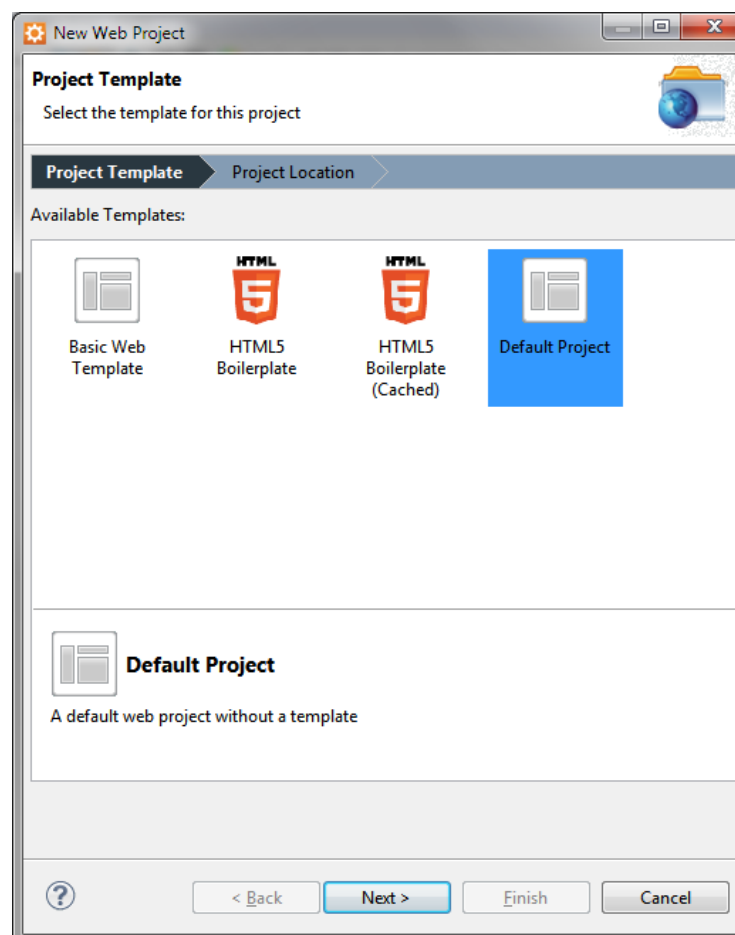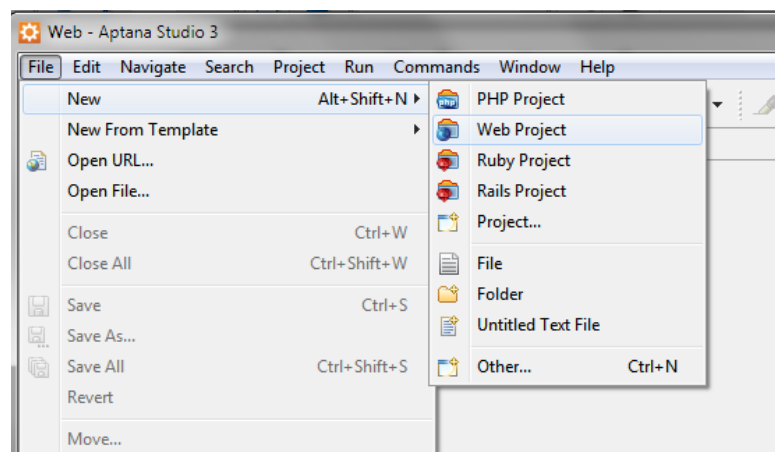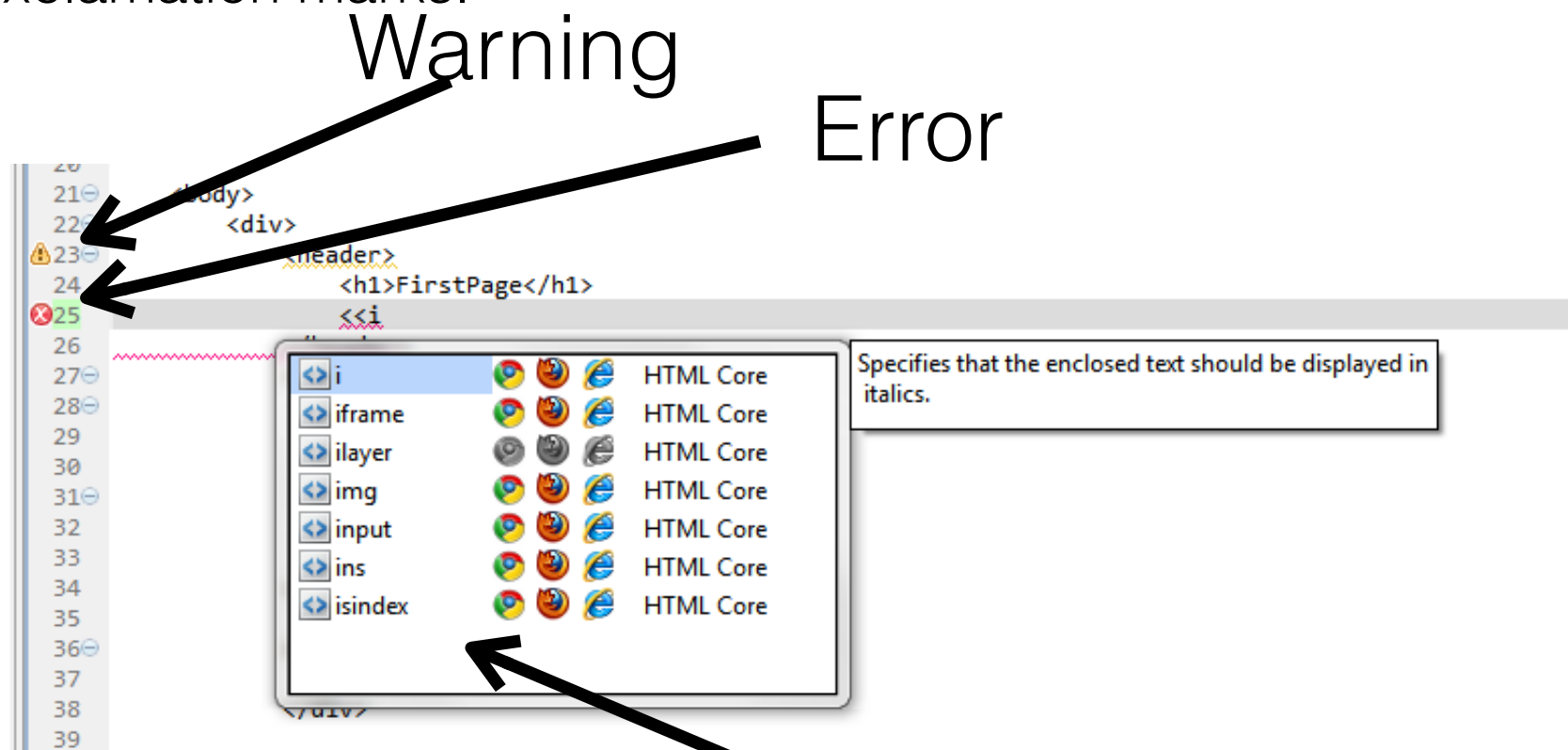
Creating a new HTML page

- Select the File->New->File command. In the New File dialog box, select the folder that the new file should be stored in and enter a file name for the new file including its .html extension.
- Still in the New File dialog box, click on the Nextin button, and select the template (HTML 5 for this example). Then, click the Finish button.
- You can change the background color and styles of the text editor.
  - Click the Window->Preferences->Aptana Studio->Themes
- The auto-completion feature displays a list of elements that starts with you've typed. To insert one of those items, double click on it or use arrow keys to highlight it and press the Tab key.
- An error marker is a red circle that contains a white X at start of a line. A warning marker is a yellow triangle and contains an exclamation marks.
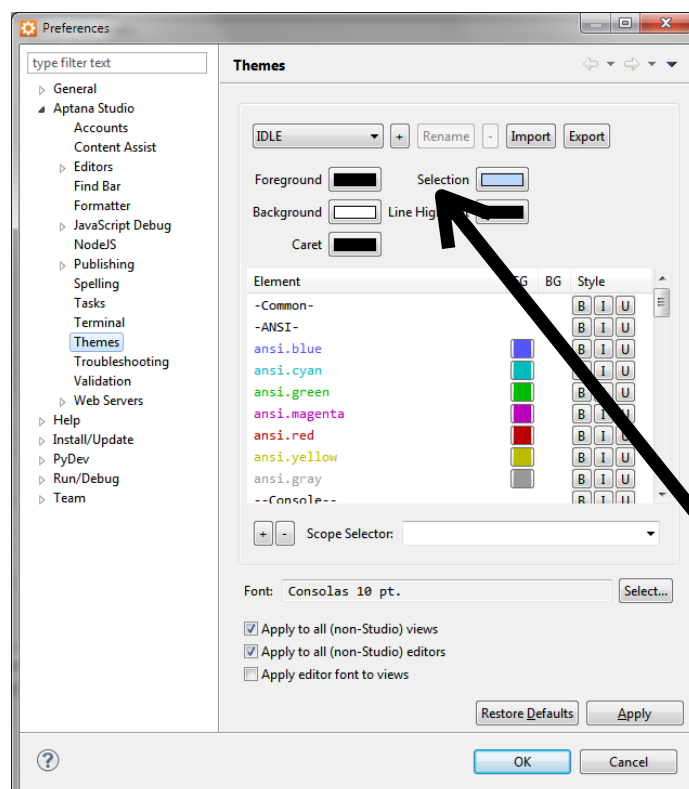
Warning

Error

Themes

Auto-completion

Creating a new CSS page

- Select the File->New->File command. In the New File dialog box, select the folder that the new file should be stored in and enter a file name for the new file including its .css extension.
- Still in the New File dialog box, click on the Next button, and select the template (CSS Template for this example). Then, click the Finish button.
- The auto-completion feature displays a list of properties that starts with you've typed. To insert one of those items, double click on it or use arrow keys to highlight it and press the Tab key.
- An error marker is a red circle that contains a white X at start of a line. A warning marker is a yellow triangle and contains an exclamation marks.
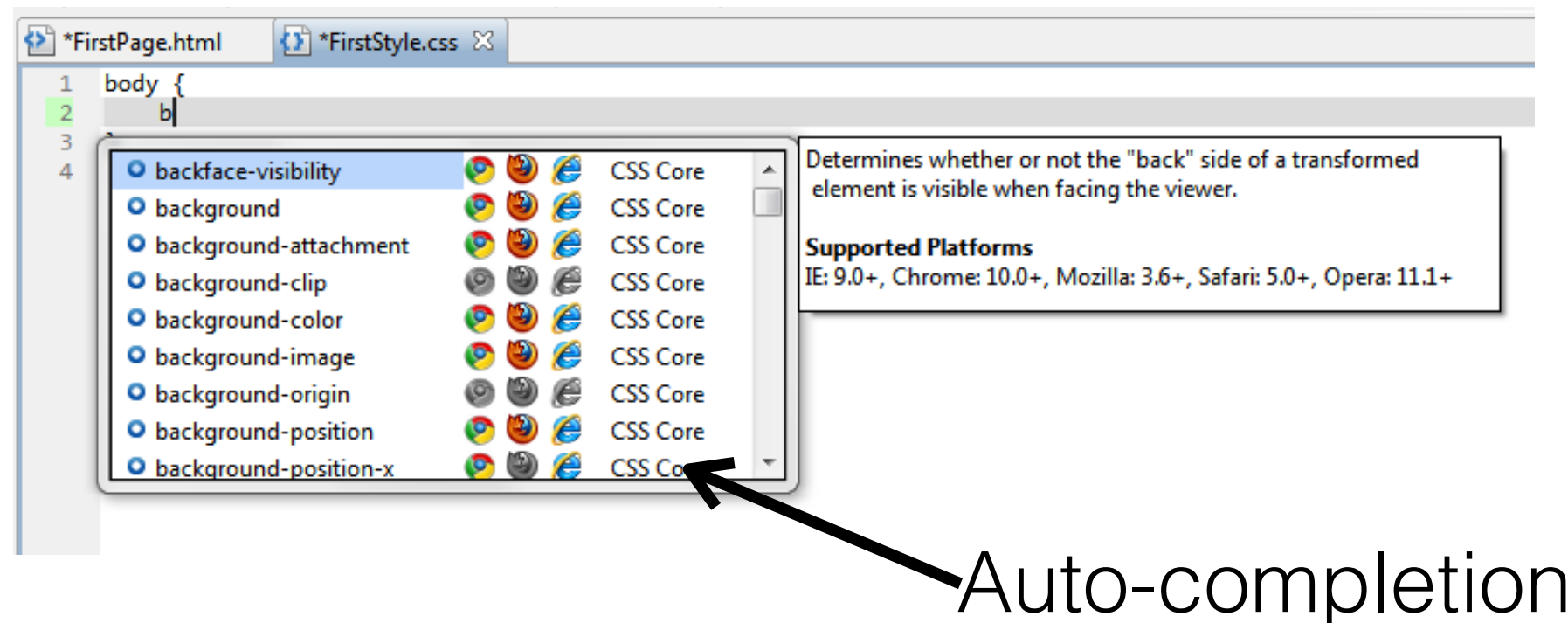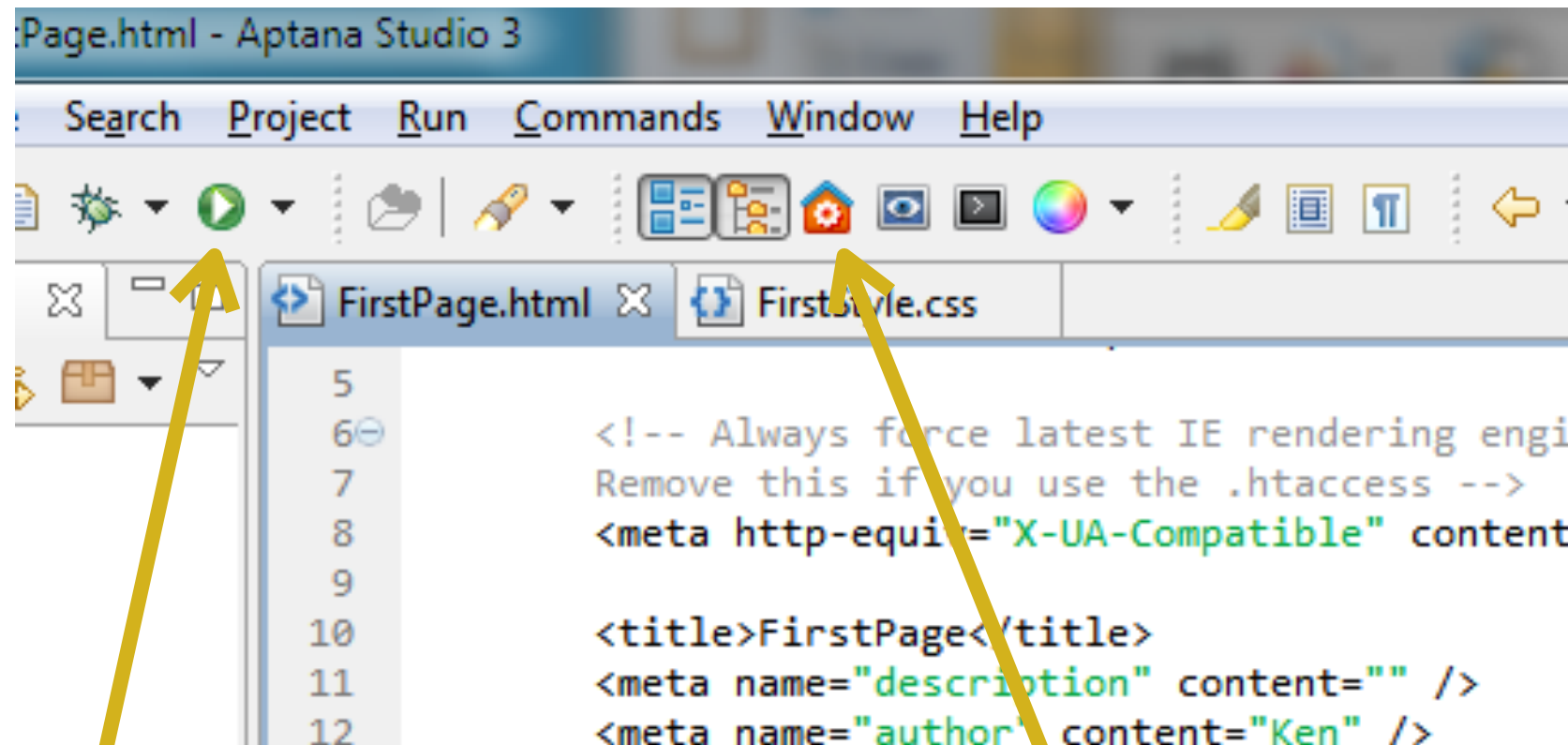

Auto-completion

Preview and Run an HTML file

- To preview an HTML file, select its tab and click on the Show Preview button.
- To run an HTML file in the default browser, select its tab and click on the Run button.


Run button

Show Preview button

Coding the head section

- The title element specifies the text that's displayed in the browser's title bar.
- The title should describe the page's content, and it should include keywords that you want the page ranked for and it is shown in the search results for a search engine.
- The title is also displayed in the tab for the web page, and it is used as the name of a favorite or bookmark for the page.
- A custom icon, called a favicon, appears to the left of URL in the address bar. It may also appears to the left of the title in a tab. And it is used in a favorite or bookmark.

```
<!doctype html>
<html lang="en-us">
   <head>
      <title>Engineering and Business Degrees in California</title>
      <link rel="shortcut icon" href="favicon.gif"/>
   </head>
   <body>
   </body>
</html>
```
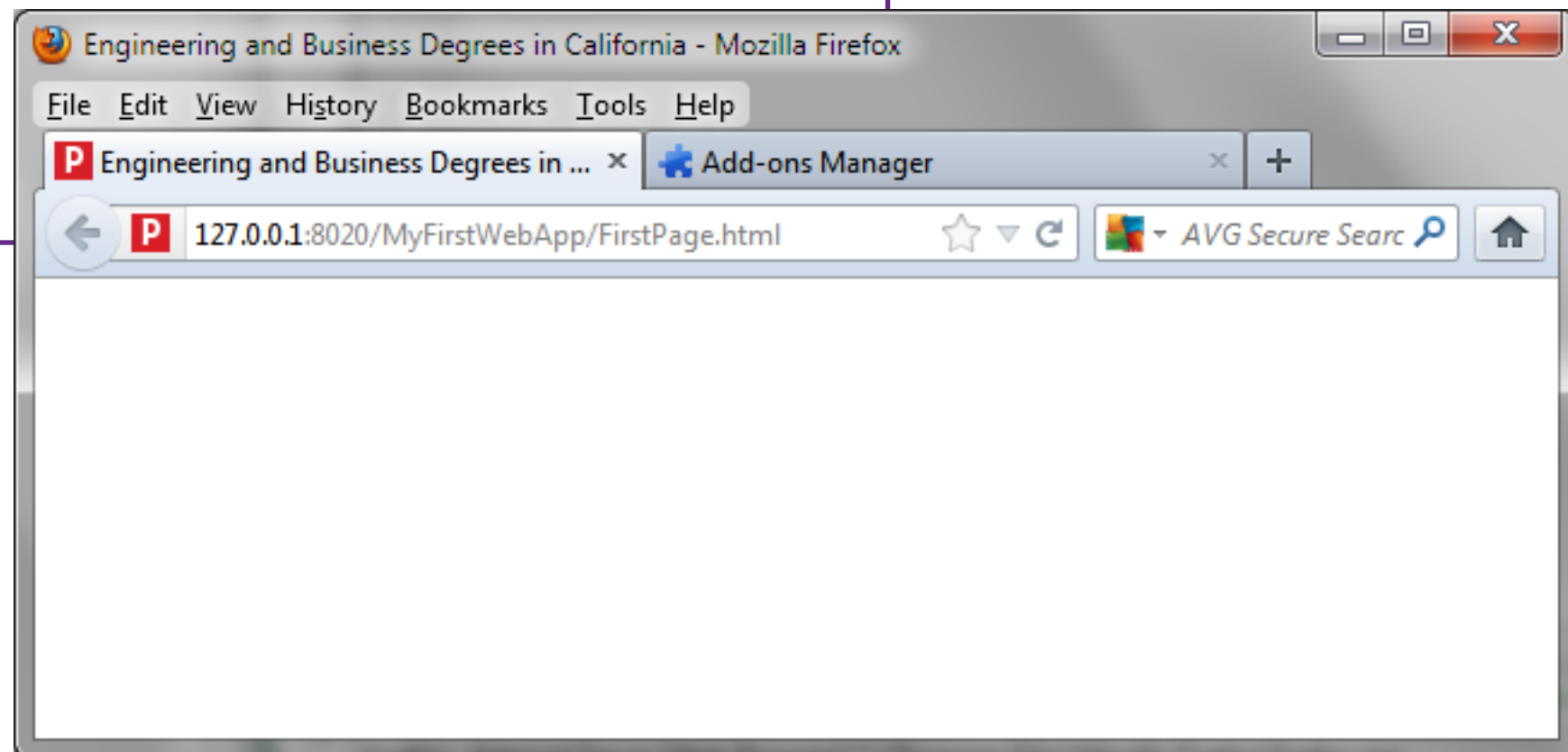
Including metadata

- The meta element provides information about the HTML document that is called metadata.
- The charset metadata is required for HTML 5 validation.
- All or part of the description metadata may be displayed in the search results of some search engines.
- Three attributes of the meta tag
  - charset
    - Specifies the type of character encoding to be used for the page. The UTF-8 is commonly used.
  - name
    - The values "description" and "keyword" can be used to specify content that is used by some search engines.
  - content
    - Specifies the value to be used for the item specified by the name attribute.
- For details, please visit http://www.w3schools.com/tags/tag_meta.asp

```
<!doctype html>
<html lang="en-us">
   <head>
      <title>Engineering and Business Degrees in California</title>
      <link rel="shortcut icon" href="favicon.gif"/>
      <meta name="description" content="NPU is a University in California located in the San Francisco Bay Area Silicon Valley and offers bachelor's, master's, and doctorate degrees in business administration and computer science.">
      <meta name="keywords" content="United States university, silicon valley career, international students, USA ">
      <meta charset="UTF-8">
   </head>
   <body>
   </body>
</html>
```