

Introduction to the course. Managing the Application Life Cycle

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Agenda

- Introduction to the Course
- Tools
- Resources
- Practice task

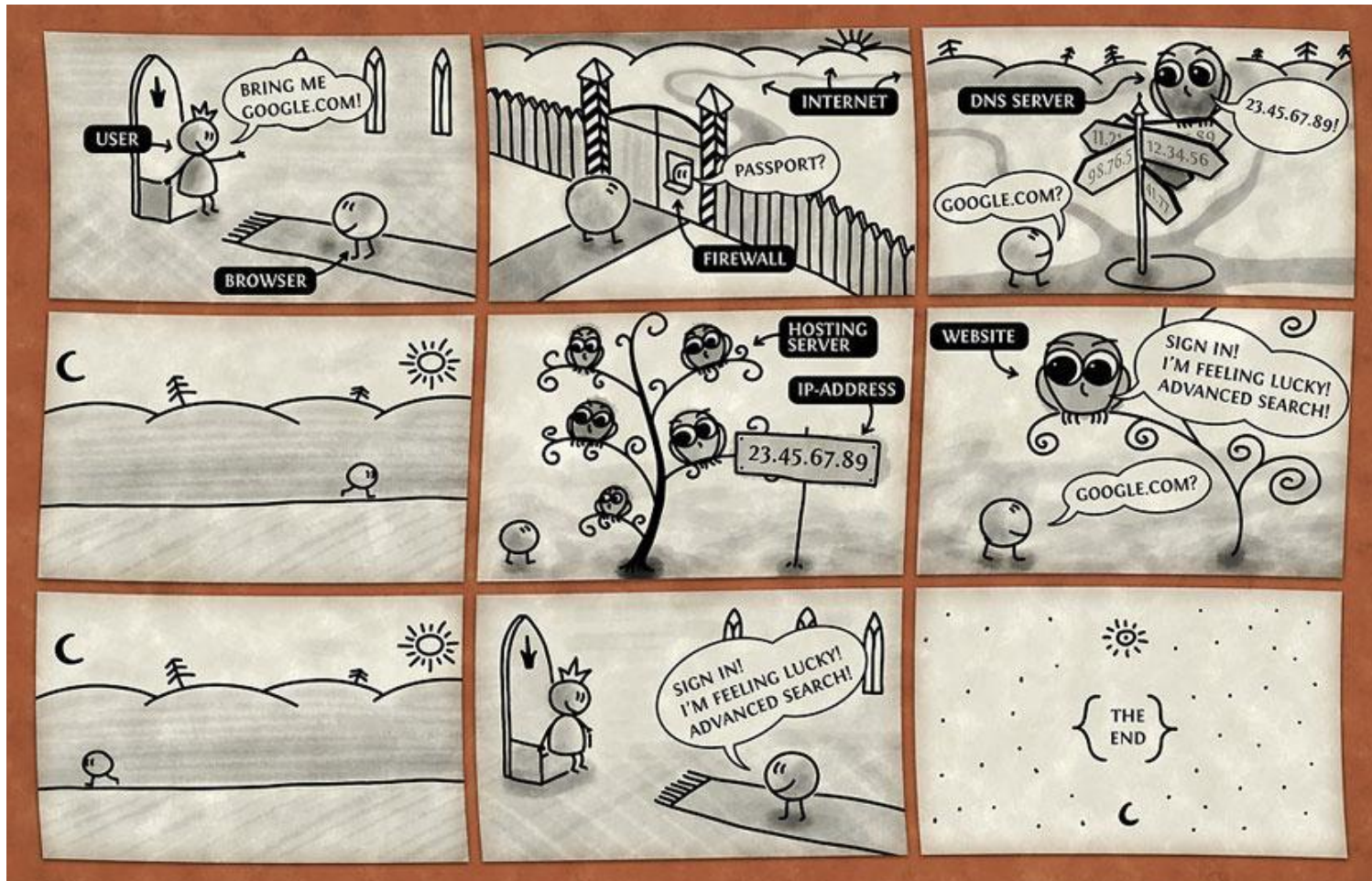
Introduction to the Course

HTML/CSS/JavaScript

- HTML – Hypertext Markup Language
- CSS – Cascading Style Sheets
- JavaScript – Programming Language



How do browsers work



Detailed article: <http://www.html5rocks.com/ru/tutorials/internals/howbrowserswork/>

Project – Personal Website

The screenshot shows a web browser window displaying a personal website for Bill Gates. The browser's address bar shows the URL <https://www.gatesnotes.com/globalpages/bio>. The website header includes the logo "gatesnotes" and the tagline "The blog of Bill Gates". Navigation links for "Personal", "Books", and "Energy" are visible, along with a search icon and a "Sign In" button.

About Bill

Married to: Melinda French Gates
Children: Three
Career highlights: Microsoft, Bill & Melinda Gates Foundation

1955—
Born
Seattle, WA.

1967
Enrolled at Lakeside School. First used computer.

1968
Began programming with Paul Allen in the computer center.

1973
Entered Harvard University.

Bill Gates is a technologist, business leader, and philanthropist. He grew up in Seattle, Washington, with an amazing and supportive family who encouraged his interest in computers at an early age. He dropped out of college to start Microsoft with his childhood friend Paul Allen. He married Melinda French in 1994 and they have three children. Today, Bill and Melinda Gates co-chair the charitable foundation bearing their names and are working together to give their wealth back to society.

Bill grew up in Seattle with his two sisters. His dad, William H. Gates II,

Tools

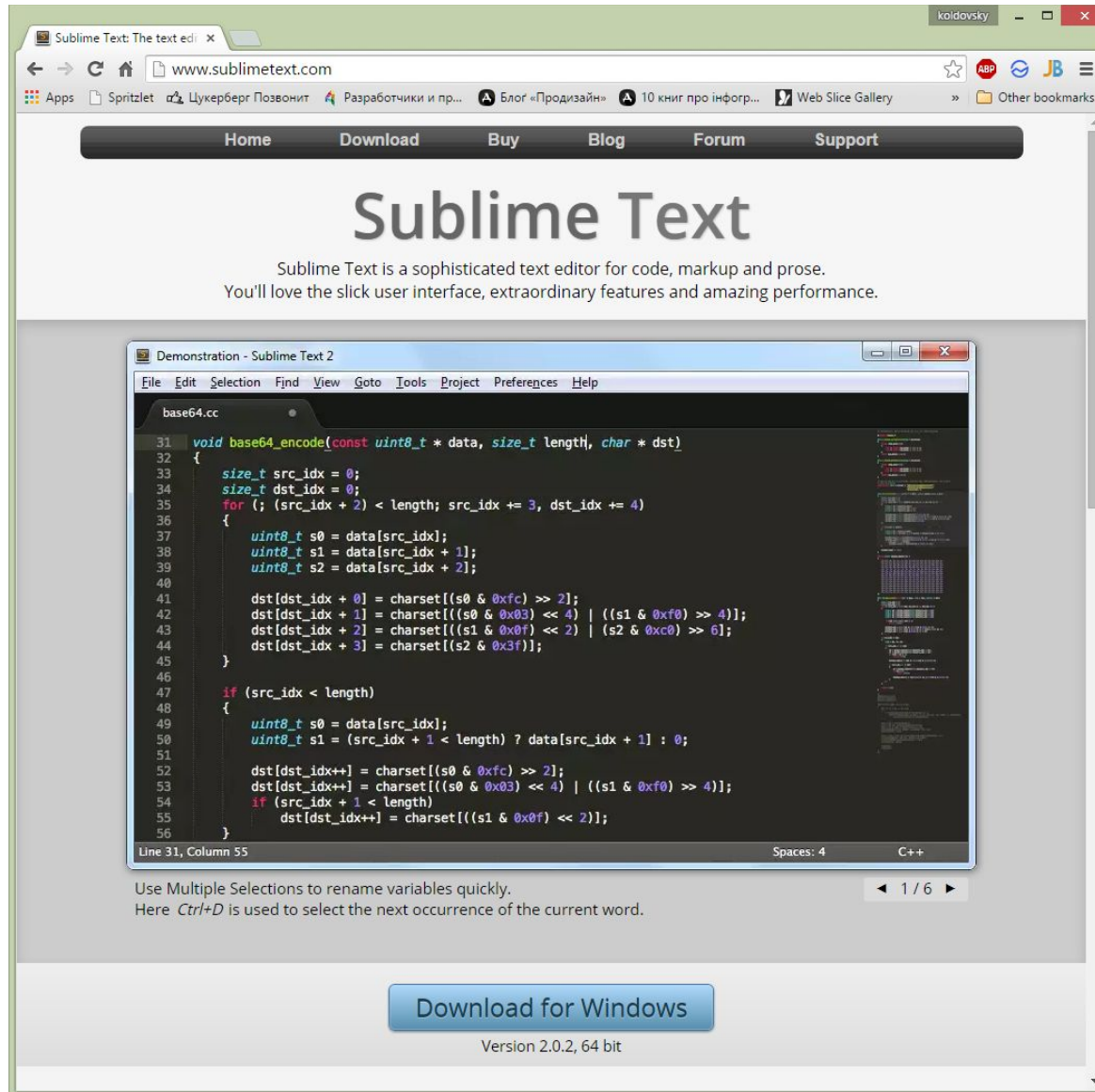
Mockups - NinjaMock

The screenshot displays the NinjaMock web application interface. The browser address bar shows the URL <https://ninjamock.com/Designer/Workplace/2469765/Page1>. The application title is "Project 'Weather Forecast'".

The interface is divided into several sections:

- Elements Panel (Left):** Contains a search bar "Search element (F3)..." and a "Basic" category with elements like "Label" and "Link". Below this are "Heading 1", "Heading 2", and "Heading 3" options, followed by a "Logo" element and a list of items (Item 1, Sub-item 1, Item 2, Sub-item 2).
- Properties Panel (Right):** Contains a search bar "Search property (Shift+F3)..." and sections for "Application" (Default font family: TomsHandw..., Sketchy lines: checked), "Page" (Page name: Page 1, Device: Browser, Background: X, Master page: X < None, Screen orientation: Portrait, Page Status: In progress, Width: 1024, Height: 768).
- Central Canvas:** Shows a hand-drawn mockup of a weather forecast. The text "Weather Forecast" is at the top. Below it is a rectangular frame containing a sun, mountains, and a lake. Underneath the frame, the text "Condition, Temp" and "City" is written.
- Outliner (Bottom Left):** Shows a "Pages: Default group" with a thumbnail for "Page 1".
- Bottom Bar:** Includes a "Saved." indicator, a "You are working online" status, and "feedback" and "help!" icons.

Sublime Text



The screenshot shows the Sublime Text website in a browser window. The browser's address bar displays `www.sublimetext.com`. The website's navigation menu includes `Home`, `Download`, `Buy`, `Blog`, `Forum`, and `Support`. The main heading is `Sublime Text`, followed by the text: `Sublime Text is a sophisticated text editor for code, markup and prose. You'll love the slick user interface, extraordinary features and amazing performance.`

A demonstration window titled `Demonstration - Sublime Text 2` is open, showing a C++ code editor with the following code:

```
base64.cc
31 void base64_encode(const uint8_t * data, size_t length, char * dst)
32 {
33     size_t src_idx = 0;
34     size_t dst_idx = 0;
35     for (; (src_idx + 2) < length; src_idx += 3, dst_idx += 4)
36     {
37         uint8_t s0 = data[src_idx];
38         uint8_t s1 = data[src_idx + 1];
39         uint8_t s2 = data[src_idx + 2];
40
41         dst[dst_idx + 0] = charset[(s0 & 0xfc) >> 2];
42         dst[dst_idx + 1] = charset[((s0 & 0x03) << 4) | ((s1 & 0xf0) >> 4)];
43         dst[dst_idx + 2] = charset[((s1 & 0x0f) << 2) | (s2 & 0xc0) >> 6];
44         dst[dst_idx + 3] = charset[(s2 & 0x3f)];
45     }
46
47     if (src_idx < length)
48     {
49         uint8_t s0 = data[src_idx];
50         uint8_t s1 = (src_idx + 1 < length) ? data[src_idx + 1] : 0;
51
52         dst[dst_idx++] = charset[(s0 & 0xfc) >> 2];
53         dst[dst_idx++] = charset[((s0 & 0x03) << 4) | ((s1 & 0xf0) >> 4)];
54         if (src_idx + 1 < length)
55             dst[dst_idx++] = charset[((s1 & 0x0f) << 2)];
56     }
}
```

Below the code editor, there is a note: `Use Multiple Selections to rename variables quickly. Here Ctrl+D is used to select the next occurrence of the current word.` A navigation bar shows `< 1 / 6 >`.

A `Download for Windows` button is present, with the text `Version 2.0.2, 64 bit` below it.

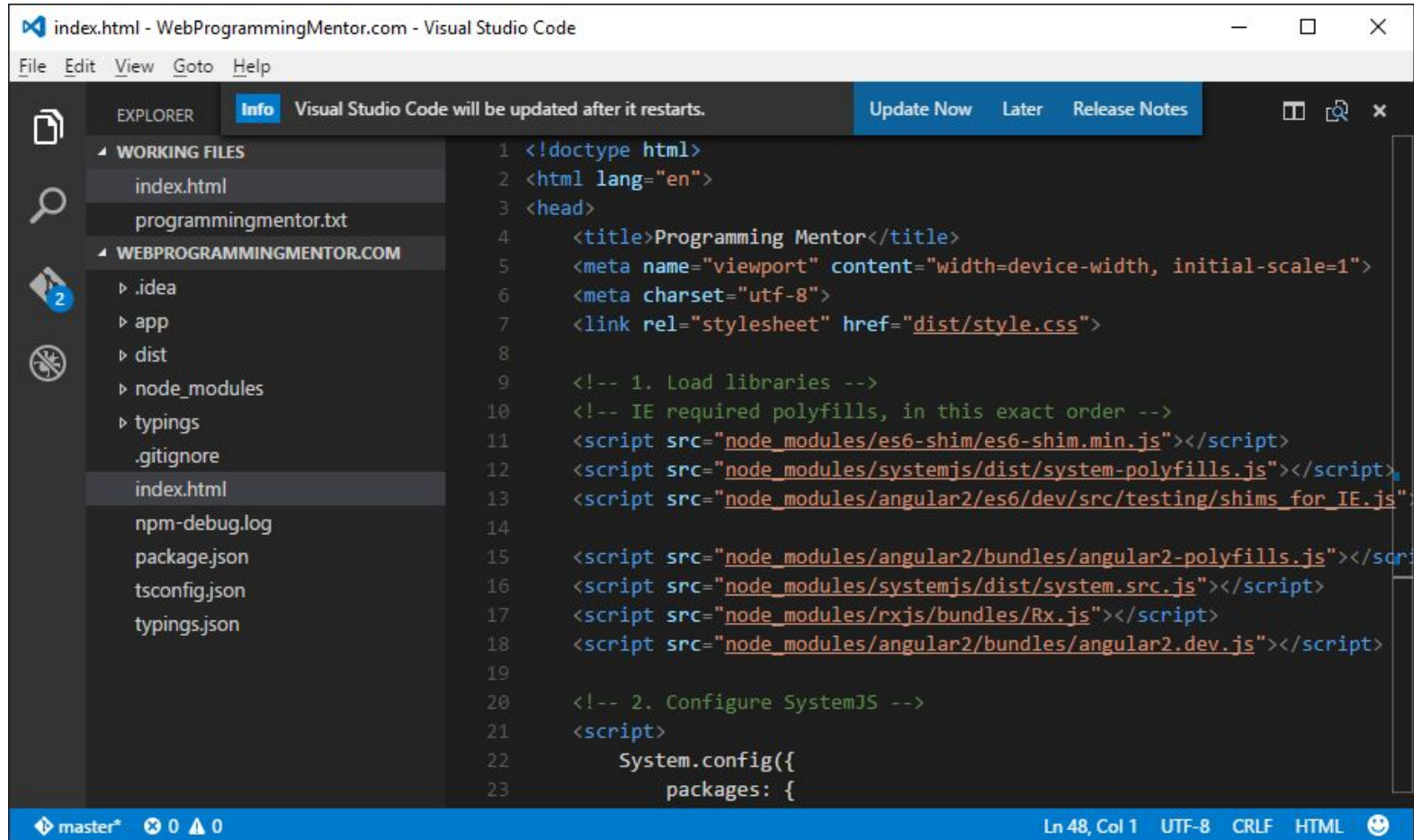
Brackets

The image shows a screenshot of the Brackets website in a browser window. The browser's address bar shows 'brackets.io'. The website's navigation menu includes 'Brackets', 'Contribute', 'API Docs', 'Blog', and 'Support'. The main content area features the text 'A modern, open source text editor that understands web design.' Below this is a blue button labeled 'Download Brackets 1.3 + Extract (Preview) by Adobe'. Underneath the button are links for 'Download Brackets without Extract' and 'Other Downloads'.

Below the website screenshot is a screenshot of the Brackets IDE interface. The interface shows a file explorer on the left, a code editor in the center, and a preview window on the right. A blue arrow points from the text 'You can use Code Hints to extract PSD Layers' to a code hint box in the editor. The code hint box lists 'All Font Styles' and 'Font Family: Source Sans Pro'. The preview window shows a website with the text 'Brackets is fun to hack on and easy to contribute to.' and a grid of small images.

With focused visual tools and preprocessor support, Brackets is a modern text editor that makes it easy to design in the browser. Try Creative Cloud Extract (preview) for Brackets.

MS Visual Studio Code



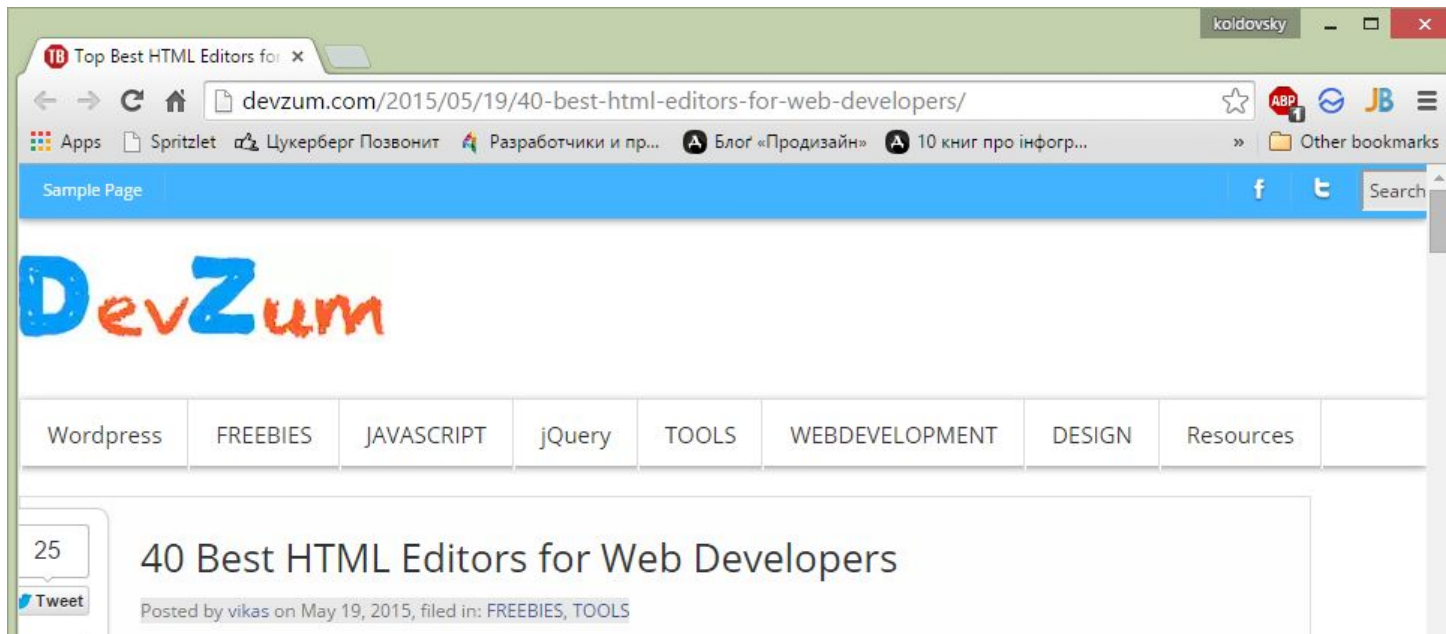
The screenshot shows the Visual Studio Code interface with a project named 'WebProgrammingMentor.com'. The Explorer sidebar on the left displays the file structure, including 'WORKING FILES' (index.html, programmingmentor.txt) and 'WEBPROGRAMMINGMENTOR.COM' (folders like .idea, app, dist, node_modules, typings; files like .gitignore, index.html, npm-debug.log, package.json, tsconfig.json, typings.json). The main editor area shows the content of 'index.html', which is an HTML document with a head section containing title, viewport, and charset meta tags, and a link to a stylesheet. The body contains several script tags for loading libraries and polyfills, followed by a SystemJS configuration block.

```
1 <!doctype html>
2 <html lang="en">
3 <head>
4   <title>Programming Mentor</title>
5   <meta name="viewport" content="width=device-width, initial-scale=1">
6   <meta charset="utf-8">
7   <link rel="stylesheet" href="dist/style.css">
8
9   <!-- 1. Load libraries -->
10  <!-- IE required polyfills, in this exact order -->
11  <script src="node_modules/es6-shim/es6-shim.min.js"></script>
12  <script src="node_modules/systemjs/dist/system-polyfills.js"></script>
13  <script src="node_modules/angular2/es6/dev/src/testing/shims_for_IE.js">
14
15  <script src="node_modules/angular2/bundles/angular2-polyfills.js"></script>
16  <script src="node_modules/systemjs/dist/system.src.js"></script>
17  <script src="node_modules/rxjs/bundles/Rx.js"></script>
18  <script src="node_modules/angular2/bundles/angular2.dev.js"></script>
19
20  <!-- 2. Configure SystemJS -->
21  <script>
22    System.config({
23      packages: {
```

At the bottom of the editor, the status bar shows 'master*' with 0 errors and 0 warnings, and the current cursor position is 'Ln 48, Col 1' in 'UTF-8' encoding with 'CRLF' line endings and 'HTML' language mode.

And more...

- 40 Best HTML Editors for Web Developers:
<http://devzum.com/2015/05/19/40-best-html-editors-for-web-developers/>



Cloud 9

The screenshot displays the Cloud9 IDE interface. The top browser window shows the URL `https://ide.c9.io/koldovsky1/weather_sample`. The main editor area is open to `index.html`, containing the following HTML code:

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <meta charset="utf-8" />
5     <title>Сайт прогнозу погоди</title>
6
7     <!-- The stylesheet -->
8     <link rel="stylesheet" href="assets/css/styles.css" />
9
10    <!-- Google Fonts -->
11
```

The terminal window at the bottom shows the execution of the following Git commands:

```
sts.
koldovsky1@weather_sample:~/workspace (gh-pages) $ git status
On branch gh-pages
Your branch is up-to-date with 'origin/gh-pages'.

nothing to commit, working directory clean
koldovsky1@weather_sample:~/workspace (gh-pages) $ git add .
koldovsky1@weather_sample:~/workspace (gh-pages) $ git commit -m "Added favicon, API key"
[gh-pages dfd098c] Added favicon, API key
 2 files changed, 1 insertion(+), 1 deletion(-)
 create mode 100644 favicon.ico
koldovsky1@weather_sample:~/workspace (gh-pages) $ git push origin gh-pages
Counting objects: 14, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 813 bytes | 0 bytes/s, done.
Total 6 (delta 1), reused 0 (delta 0)
To git@github.com:koldovsky/WeatherSample.git
 2e433b9..dfd098c  gh-pages -> gh-pages
koldovsky1@weather_sample:~/workspace (gh-pages) $ git status
On branch gh-pages
Your branch is up-to-date with 'origin/gh-pages'.
```

Validators

Validators help to check your work

- HTML validator:

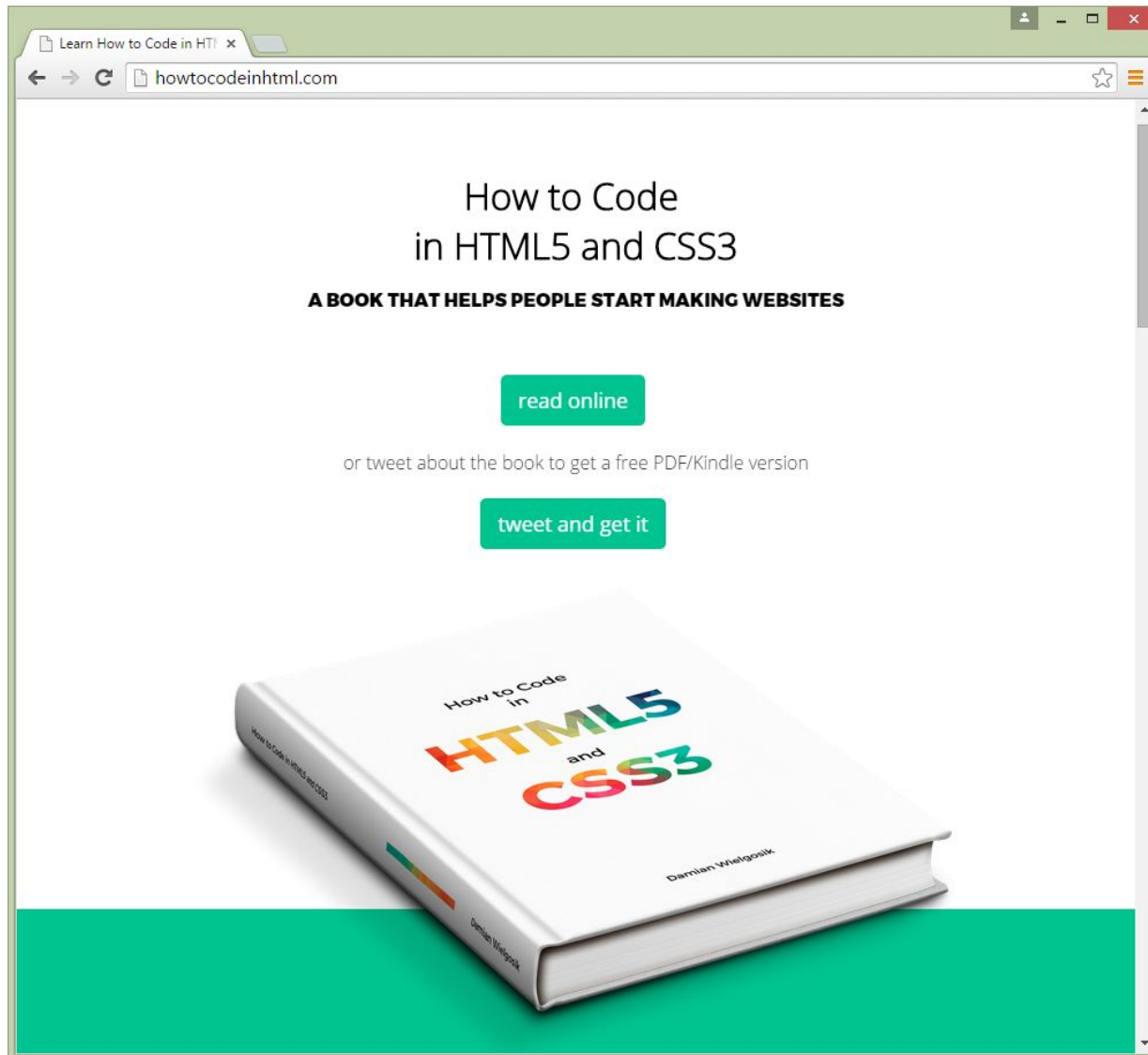
<http://validator.w3.org>

- CSS validator:

<http://jigsaw.w3.org/css-validator>

Resources

http://howtocodeinhtml.com



http://w3schools.com

The screenshot shows the W3Schools website in a browser window. The browser's address bar displays 'www.w3schools.com'. The website's header features the 'w3schools.com' logo and the tagline 'THE WORLD'S LARGEST WEB DEVELOPER SITE'. A green navigation bar contains links for 'TUTORIALS', 'REFERENCES', and 'EXAMPLES', along with search and home icons. A left sidebar lists various topics: HTML/CSS, JavaScript, and HTML Graphics, each with sub-links. The main content area is titled 'HTML' and includes the text 'The language for building web pages.' Below this are two buttons: 'LEARN HTML' and 'HTML REFERENCE'. To the right, an 'HTML Example' box contains a code snippet for a basic HTML document structure. At the bottom of the page, the text 'CSS Example:' is visible, followed by the letters 'CSS'.

W3schools.com THE WORLD'S LARGEST WEB DEVELOPER SITE

TUTORIALS - REFERENCES - EXAMPLES

HTML/CSS

- Learn HTML
- Learn CSS
- Learn Bootstrap
- Learn W3.CSS

JavaScript

- Learn JavaScript
- Learn jQuery
- Learn jQueryMobile
- Learn AppML
- Learn AngularJS
- Learn AJAX
- Learn JSON

HTML Graphics

- Learn Canvas
- Learn SVG
- Learn Icons
- Learn Google Maps

Server Side

HTML

The language for building web pages.

LEARN HTML

HTML REFERENCE

HTML Example:

```
<!DOCTYPE html>
<html>
<title>HTML Tutorial</title>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Try it Yourself

CSS Example:

CSS

overapi.com/html

HTML Cheat Sheet | OverAPI.com

overapi.com/html/

OverAPI.com Python jQuery NodeJS PHP Java Ruby Javascript More »

Search

Resource

Online
Official Website

Download
HTML/XML in one page
HTML Cheat Sheet [.pdf]
HTML quick reference [.pdf]
HTML & XHTML Tag Quick Reference [.pdf]
HTML5 Canvas Cheat Sheet [.pdf]

Related
Characters
CSS
JavaScript
XHTML

Attributes

Core
class
id
style
title

Language
dir
lang
xml:lang

Keyboard
accesskey
tabindex

Basic Tags

Basic
<!DOCTYPE>
<html>
<body>
<h1> to <h6>
<p>

<hr />

Images

<map>
<area />

Links
<a>
<link />

Lists

<dir>
<dl>
<dt>
<dd>
<menu>

Entities

Character

"	"
&	&
<	<
>	>
@	@

Formatting

Format
<acronym>
<abbr>
<address>

<bdo>

<big>
<blockquote>
<center>
<cite>
<code>

<dfn>

<i>
<ins>
<kbd>
<pre>
<q>
<s>
<samp>
<small>
<strike>

<sub>
<sup>
<tt>
<u>
<var>
<xmp>

Status 2XX

2XX: Successful
200 OK

Status 1XX

1XX: Information
100 Continue
The server has received the request headers, and the client should proceed to send the request body.

Form/Table

Forms
<form>
<input />
<textarea>
<button>
<select>
<optgroup>
<option>
<label>
<fieldset>
<legend>

Tables
<table>
<caption>
<th>
<tr>
<td>
<thead>
<tbody>
<tfoot>
<col />
<colgroup>

Frames
<frame />
<frameset>
<noframes>
<iframe>

Others

Styles
<style>
<div>

Meta Info
<head>
<title>
<meta>
<base />
<basefont />

Programming
<script>
<noscript>
<applet>
<object>
<param />

HTML Events

<body>Events
onload
Script to be run when a document unloads

Form Events
onblur
onchange
onfocus
onreset
onselect
onsubmit

Image Events

websitesetup.org/html5-cheat-sheet/



HTML 5 NEW TAG TAG NOT SUPPORTED IN HTML 5

| | |
|---------------------------------|--|
| <code><!...--></code> | Define a comment |
| <code><!DOCTYPE></code> | Defines the document type |
| <code><a></code> | Defines a hyperlink
href, hreflang, media, ping, rel, target, type |
| <code><abbr></code> | Defines an abbreviation |
| <code><acronym></code> | Used to define an embedded acronyms |
| <code><address></code> | Defines an address element |
| <code><applet></code> | Used to define an embedded applet |
| <code><area></code> | Defines an area inside an image map
alt, coords, href, hreflang, media, ping, rel, shape, target, type |
| <code><article></code> | Defines an article
cite, pdate |
| <code><aside></code> | Defines content aside from the page content |
| <code><audio></code> | Defines sound content
autobuffer, autoplay, controls, src |
| <code></code> | Defines bold text |
| <code><base></code> | Defines a base URL for all the links in a page
href, target |
| <code><basefont></code> | Used to define a default font-color, font-size, or font-family for all the document |
| <code><bdo></code> | Defines the direction of text display
dir |
| <code><big></code> | Used to make text bigger |
| <code><blockquote></code> | Defines a long quotation
cite |
| <code><body></code> | Defines the body element |
| <code>
</code> | Inserts a single line break |
| <code><button></code> | Defines a push button
autofocus, disabled, form, formaction, formenctype, formmethod, formnovalidate, formtarget, name, type, value |
| <code><canvas></code> | Defines graphics
height, width |
| <code><caption></code> | Defines a table caption |
| <code><center></code> | Used to center align text and content |
| <code><cite></code> | Defines a citation |
| <code><code></code> | Defines computer code text
autobuffer, autoplay, controls, src |
| <code><col></code> | Defines attributes for table columns |
| <code><colgroup></code> | Defines groups of table columns
span |
| <code><command></code> | Defines a command button
checked, disabled, icon, label, radiogroup, type |

| | |
|---------------------------------------|--|
| <code><datalist></code> | Defines a dropdown list |
| <code><dd></code> | Defines a definition description |
| <code></code> | Defines deleted text
cite, datetime |
| <code><details></code> | Defines details of an element
open |
| <code><dialog></code> | Defines a dialog (conversation) |
| <code><dfn></code> | Defines a definition term |
| <code><dir></code> | Used to define a directory list |
| <code><div></code> | Defines a section in a document |
| <code><dl></code> | Defines a definition list |
| <code><dt></code> | Defines a definition term |
| <code></code> | Defines emphasized text |
| <code><embed></code> | Defines external interactive content or plugin
height, src, type, width |
| <code><fieldset></code> | Defines a fieldset
disabled, form, name |
| <code><figure></code> | Defines a group of media content, and their caption |
| <code></code> | Used to define font face, font size, and font color of text |
| <code><footer></code> | Defines a footer for a section or page |
| <code><form></code> | Defines a form
accept-charset, action, autocomplete, enctype, method, name, novalidate, target |
| <code><frame></code> | Used to define one particular window (frame) within a frameset |
| <code><frameset></code> | Used to define a frameset, which organized multiple windows (frames) |
| <code><h1> to <h6></code> | Defines header 1 to header 6 |
| <code><head></code> | Defines information about the document |
| <code><header></code> | Defines a header for a section or page |
| <code><hgroup></code> | Defines information about a section in a document |
| <code><hr></code> | Defines a horizontal rule |
| <code><html></code> | Defines an html document
manifest, xmlns |
| <code><i></code> | Defines italic text |
| <code><iframe></code> | Defines an inline sub window
height, name, sandbox, seamless, src, width |
| <code></code> | Defines an image
alt, src, height, ismap, usemap, width |
| <code><input></code> | Defines an input field
accept, alt, autocomplete, autofocus, checked, disabled, form, formaction, formenctype, formmethod, formnovalidate, formtarget, height, list, max, maxlength, min, multiple, name, pattern, placeholder, readonly, required, size, src, step, type, value, width |

| | |
|--|---|
| <code><ins></code> | Defines inserted text
cite, datetime |
| <code><keygen></code> | Defines a generated key in a form
autofocus, challenge, disabled, form, keytype, name |
| <code><kbd></code> | Defines keyboard text |
| <code><label></code> | Defines an inline sub window
for, form |
| <code><legend></code> | Defines a title in a fieldset |
| <code></code> | Defines a list item
value |
| <code><link></code> | Defines a resource reference
href, hreflang, media, rel, sizes, type |
| <code><map></code> | Defines an image map
name |
| <code><mark></code> | Defines marked text |
| <code><menu></code> | Defines a menu list
label, type |
| <code><meta></code> | Defines meta information
charset, content, http-equiv, name |
| <code><meter></code> | Defines measurement within a predefined range
high, low, max, min, optimum, value |
| <code><nav></code> | Defines navigation links |
| <code><noframes></code> | Used to display text for browsers that do not handle frames |
| <code><noscript></code> | Defines a noscript section |
| <code><object></code> | Defines an embedded object
data, form, height, name, type, usemap, width |
| <code></code> | Defines an ordered list
reversed, start |
| <code><optgroup></code> | Defines an option group
label, disabled |
| <code><option></code> | Defines an option in a drop-down list
disabled, label, selected, value |
| <code><output></code> | Defines some types of output
for, form, name |
| <code><p></code> | Defines a paragraph |
| <code><param></code> | Defines a parameter for an object
name, value |
| <code><pre></code> | Defines preformatted text |
| <code><progress></code> | Defines progress of a task of any kind
max, value |
| <code><q></code> | Defines a short quotation
cite |
| <code><rp></code> | Used in ruby annotations to define what to show browsers that do not support the ruby element |
| <code><rt></code> | Defines explanation to ruby annotations |
| <code><ruby></code> | Defines ruby annotations |
| <code><s>, <strike></code> | Used to define strikethrough text. |

| | |
|---|--|
| <code><samp></code> | Defines sample computer code |
| <code><script></code> | Defines a definition list
async, type, charset, defer, src |
| <code><section></code> | Defines a section
cite |
| <code><select></code> | Defines a selectable list
autofocus, disabled, form, multiple, name, size |
| <code><small></code> | Defines small text |
| <code><source></code> | Defines media resources
media, src, type |
| <code></code> | Defines a section in a document |
| <code></code> | Defines strong text |
| <code><style></code> | Defines a style definition
type, media, scoped |
| <code><sub>, <sup></code> | Defines sub/super-scripted text |
| <code><table></code> | Defines a table
summary |
| <code><tbody></code> | Defines a table body
summary |
| <code><td></code> | Defines a table cell
colspan, headers, rowspan |
| <code><textarea></code> | Defines a text area
autofocus, cols, disabled, form, maxlength, name, placeholder, readonly, required, rows, wrap |
| <code><tfoot>, <thead></code> | Defines a table footer / head |
| <code><th></code> | Defines a table header
colspan, headers, rowspan, scope |
| <code><time></code> | Defines a date/tim
datetime |
| <code><title></code> | Defines the document title |
| <code><tr></code> | Defines a table row
datetime |
| <code><tt></code> | Used to define teletype text |
| <code><u></code> | Used to define underlined text |
| <code></code> | Defines an unordered list |
| <code><var></code> | Defines a variable |
| <code><video></code> | Defines a video
autobuffer, autoplay, controls, height, loop, src, width |

HTML5 TAG CHEAT SHEET Created by WebsiteSetup.org

Practice task

Practice task

- Prepare your working environment
- Open and run sample website
- Try to make changes and see updates

- Git commands:

```
git checkout -b gh-pages
```

```
git add .
```

```
git commit -m "add new file"
```

```
git push origin gh-pages
```

Homework

- Create mockup for your website
- Complete Try Git: try.github.io

Contacts

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Lviv 79053, Ukraine

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Website: www.softserveinc.com

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Fort Myers, FL 33907, USA

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Fax: 239-690-3116

Thank You!