INFO 151
Web Systems and Services

Week 3 (T2)

Dr Philip Moore
Dr Zhili Zhao

Web-Page Layout Techniques and Design

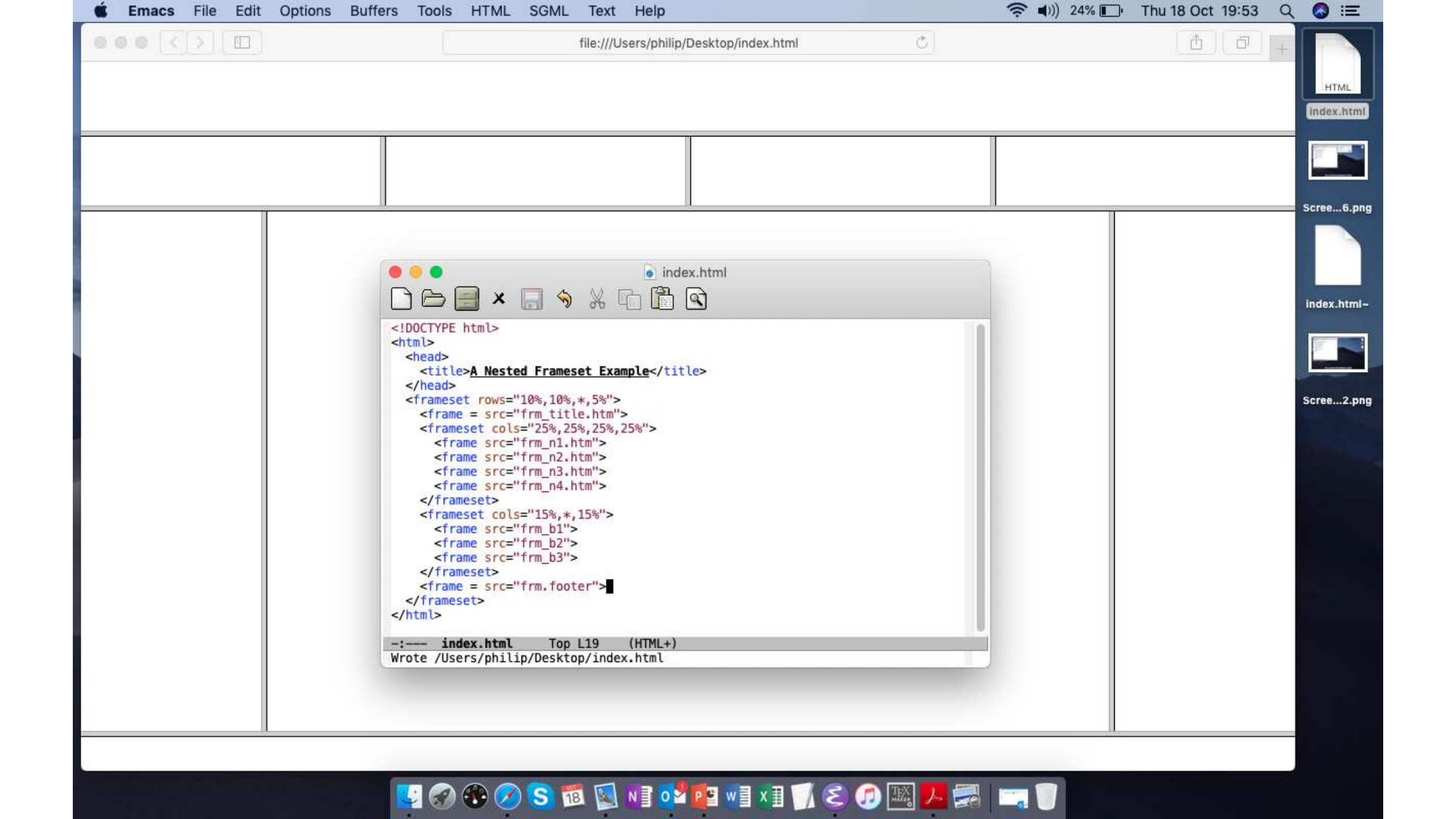
HTML Layout Techniques

- A multicolumn web-page layout may be created using 4 methods:
  - HTML tables
  - CSS float property
  - CSS flexbox
  - CSS frameworks
- The CSS float and flexbox frameworks
  - are similar to the *GridBagLayout* and *FlowLayout* page layout methods used in Java
- Details of the layout techniques can be found in the course resources

HTML Layout using Frames and Tables

HTML Layout using Frames and Tables

- HTML frames
  - Recall we have covered this method in week 2
  - This method is **NOT** recommended for the reasons identified in week 2
- The `<frame>` element was not designed to be a layout tool
- The purpose of the `<table>` element is to display tabular data
- Additionally for frames:
  - There are problems with printing and bookmarking
  - These problems are the result of GUI ***focus*** issues
    - In computing the ***focus*** indicates the component of the GUI selected to receive input (or output)
  - While a user may wish to print or bookmark a web-page the ***focus*** may be on a specific ***frame*** resulting in an error (the users needs may not be implemented)


Emacs File Edit Options Buffers Tools HTML SGML Text Help
24% Thu 18 Oct 19:53
file:///Users/philip/Desktop/index.html
index.html
<!DOCTYPE html>
<html>
<head>
<title>A Nested Frameset Example</title>
</head>
<frameset rows="10%,10%,*,5%">
<frame = src="frm_title.htm">
<frameset cols="25%,25%,25%,25%">
<frame src="frm_n1.htm">
<frame src="frm_n2.htm">
<frame src="frm_n3.htm">
<frame src="frm_n4.htm">
</frameset>
<frameset cols="15%,*,15%">
<frame src="frm_b1">
<frame src="frm_b2">
<frame src="frm_b3">
</frameset>
<frame = src="frm.footer">
</frameset>
</html>
-:--- index.html Top L19 (HTML+)
Wrote /Users/philip/Desktop/index.html
index.html
Scree...6.png
index.html~
Scree...2.png

HTML Layout using CSS float

HTML Layout using CSS float

- The CSS float property specifies
  - How an element should float.
  - What elements can float beside the cleared element and on which side (left (or) right)
- The floating process must be known and understood to remember how the float and clear properties function
- It is common to create entire web layouts using the CSS float property
- Advantages
  - CSS float is a simple method to learn and implement
- Disadvantages
  - Floating elements are tied to the document flow
  - Document flows may impact the flexibility
- Full details of the CSS float property can be found in the course resources

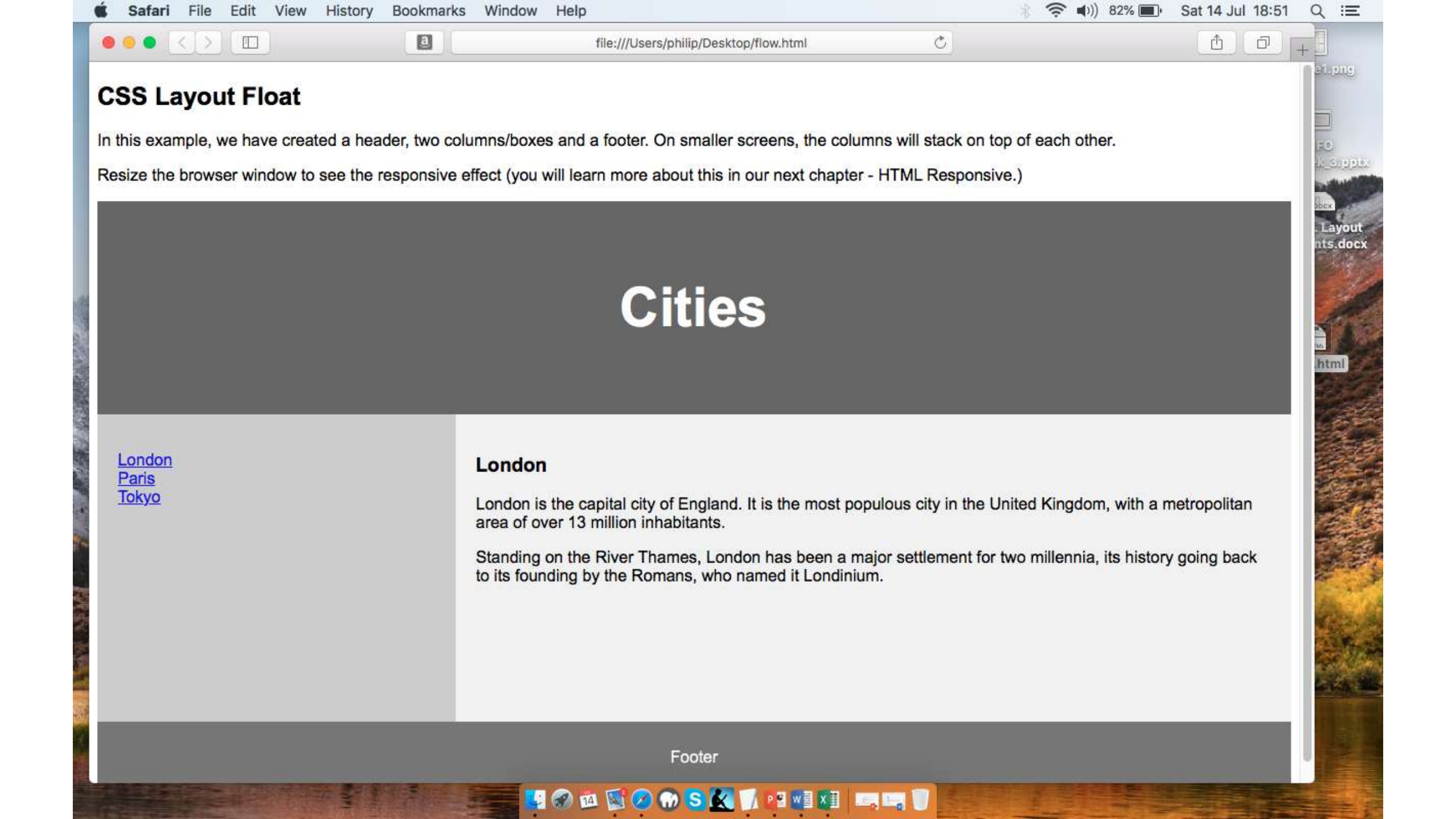
CSS Float Properties

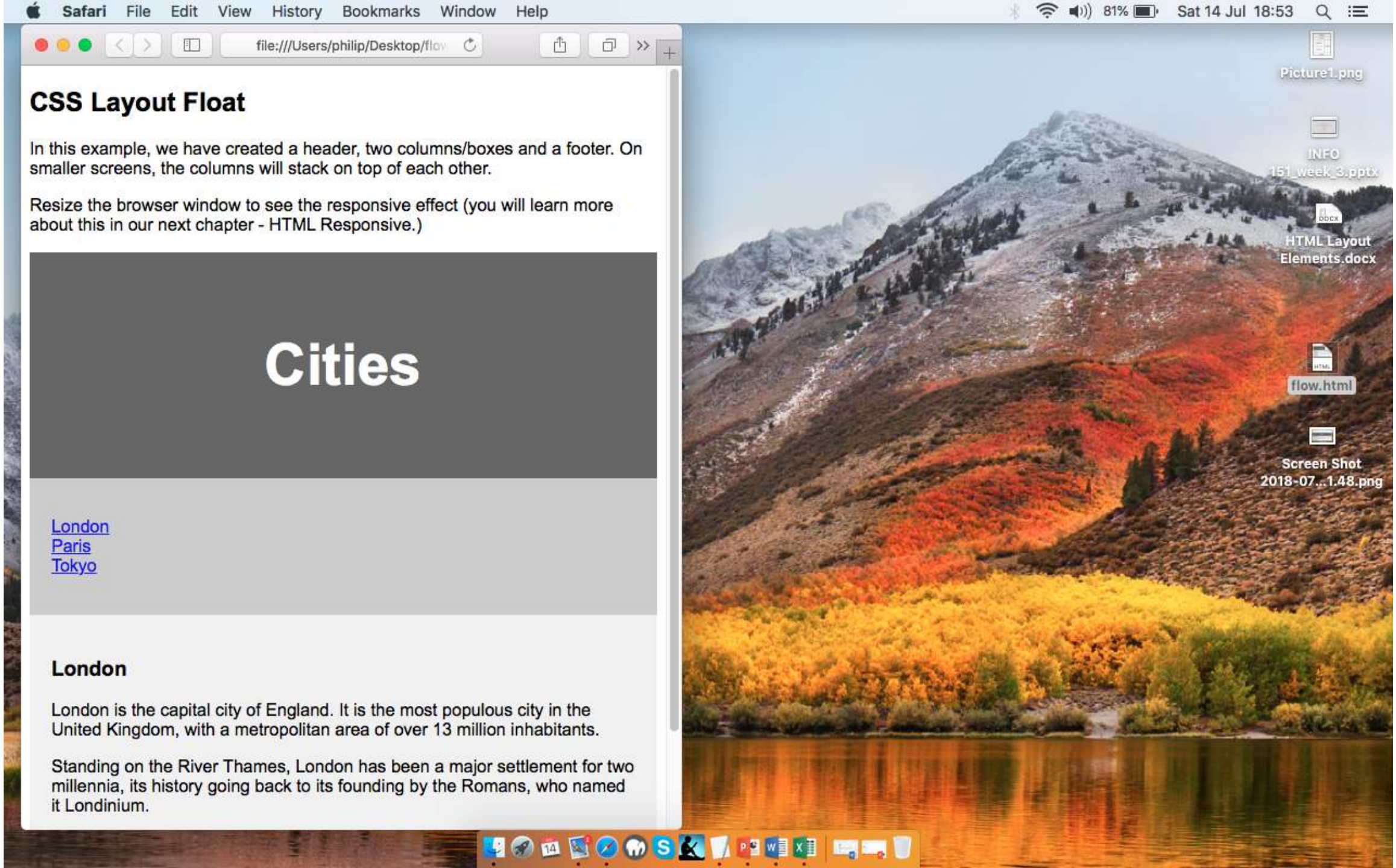
Full details of the CSS float property can be found at w3schools.com

Property	Description
box-sizing	Defines how the width and height of an element are calculated: should they include padding and borders, or not
clear	Specifies what elements can float beside the cleared element and on which side
float	Specifies how an element should float
overflow	Specifies what happens if content overflows an element's box
overflow-x	Specifies what to do with the left/right edges of the content if it overflows the element's content area
overflow-y	Specifies what to do with the top/bottom edges of the content if it overflows the element's content area

A CSS Float Example

- From the following slides we can see that
  - The profile (the width) of the web-page dynamically changes
  - Changing the profile of the web-page also re-locates the sections in the web-page
  - This is achieved by ‘dragging’ the edges of the web-page to a desired size
  - The height of the web-page will also change – as the width is reduced the height also changes
- This capability to change profile has benefits:
  - The user may change the profile ‘on-the-fly’ when viewing the web-page
  - The web-page will dynamically change to suit the GUI


Safari File Edit View History Bookmarks Window Help
82% Sat 14 Jul 18:51
file:///Users/philip/Desktop/flow.html
CSS Layout Float
In this example, we have created a header, two columns/boxes and a footer. On smaller screens, the columns will stack on top of each other.
Resize the browser window to see the responsive effect (you will learn more about this in our next chapter - HTML Responsive.)
Cities
London
Paris
Tokyo
London
London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.
Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.
Footer


Safari File Edit View History Bookmarks Window Help
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file:///Users/philip/Desktop/flow
CSS Layout Float
In this example, we have created a header, two columns/boxes and a footer. On smaller screens, the columns will stack on top of each other.
Resize the browser window to see the responsive effect (you will learn more about this in our next chapter - HTML Responsive.)
Cities
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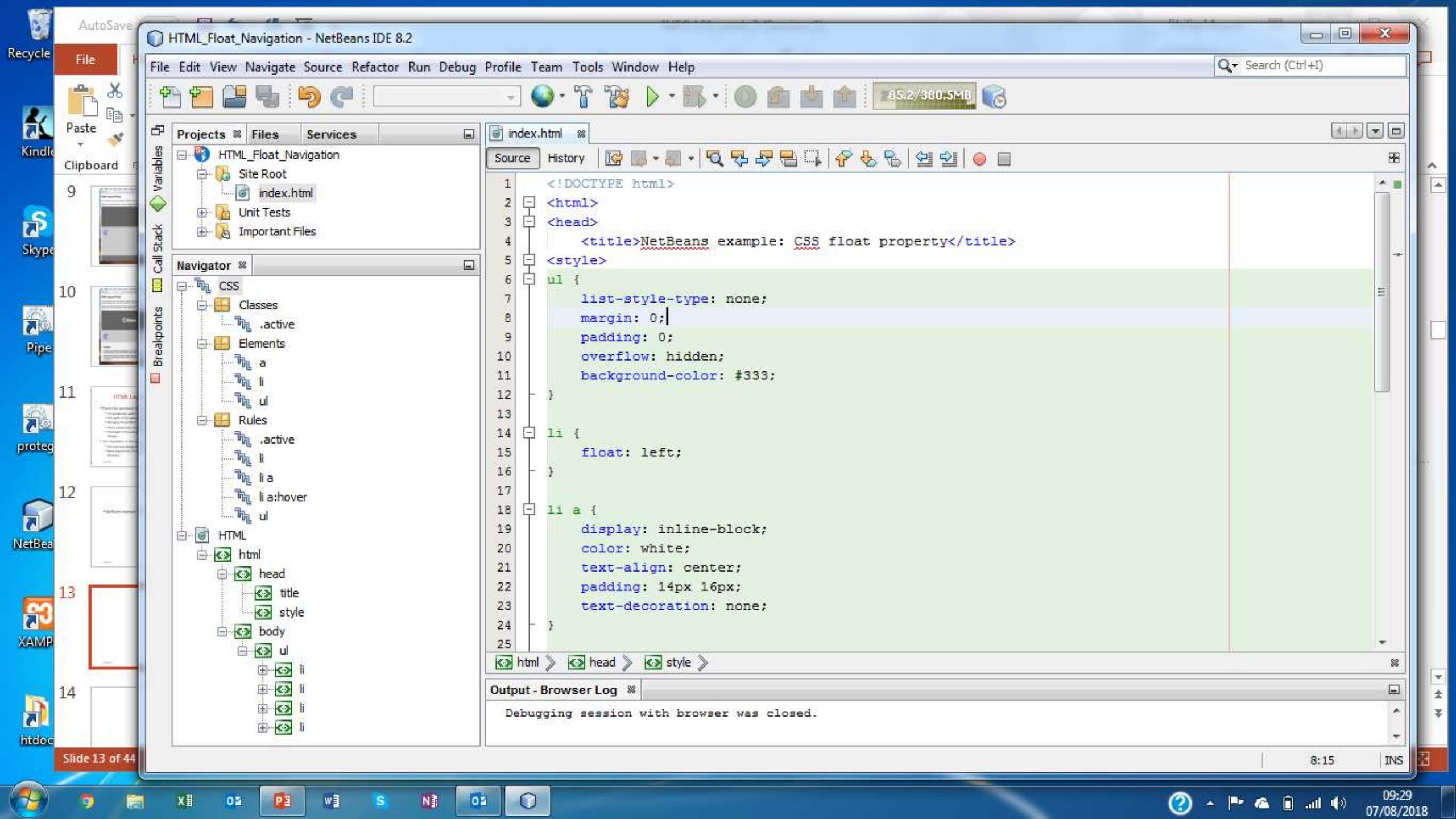
Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.
Picture1.png
INFO 151_week_3.pptx
HTML Layout Elements.docx
flow.html
Screen Shot 2018-07...1.48.png

A CSS float Example in NetBeans the IDE

- The following slides show CSS float implemented in the NetBeans IDE
  - An example using the HTML CSS float layout
- We can see from the NetBeans IDE
  - The Projects, Navigator and Browser Dom information and elements
- The HTML and style rules that define the output are shown in the NetBeans editor
- The output shows
  - the navigator bar formatted with the ***Home*** link changing colour (red to black) when in ***mouseover***
  - The width of the navigator bar changes dynamically to match the browser


HTML_Float_Navigation - NetBeans IDE 8.2
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Search (Ctrl+I)
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Projects
Files
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HTML_Float_Navigation
Site Root
index.html
Unit Tests
Important Files
Navigator
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li a
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ul
HTML
html
head
title
style
body
ul
li
li
li
li
Variables
Call Stack
Breakpoints
index.html
Source
History
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>NetBeans example: CSS float property</title>
5 <style>
6 ul {
7 list-style-type: none;
8 margin: 0;
9 padding: 0;
10 overflow: hidden;
11 background-color: #333;
12 }
13
14 li {
15 float: left;
16 }
17
18 li a {
19 display: inline-block;
20 color: white;
21 text-align: center;
22 padding: 14px 16px;
23 text-decoration: none;
24 }
25
html
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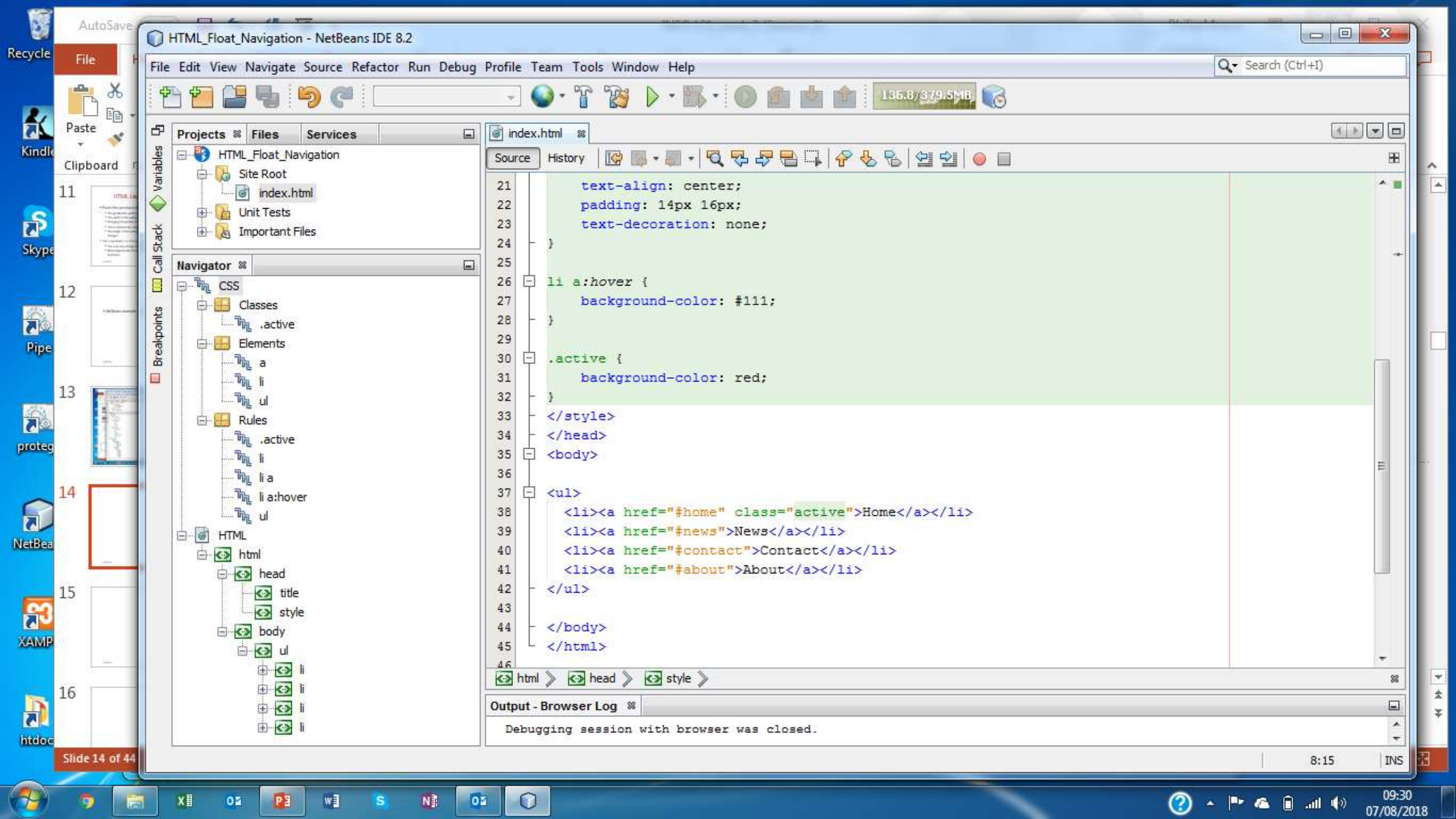
Output - Browser Log
Debugging session with browser was closed.
8:15
INS


HTML_Float_Navigation - NetBeans IDE 8.2
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21 text-align: center;
22 padding: 14px 16px;
23 text-decoration: none;
24 }
25
26 li a:hover {
27 background-color: #111;
28 }
29
30 .active {
31 background-color: red;
32 }
33 </style>
34 </head>
35 <body>
36
37
38 Home
39 News
40 Contact
41 About
42
43
44 </body>
45 </html>
html head style
Output - Browser Log
Debugging session with browser was closed.
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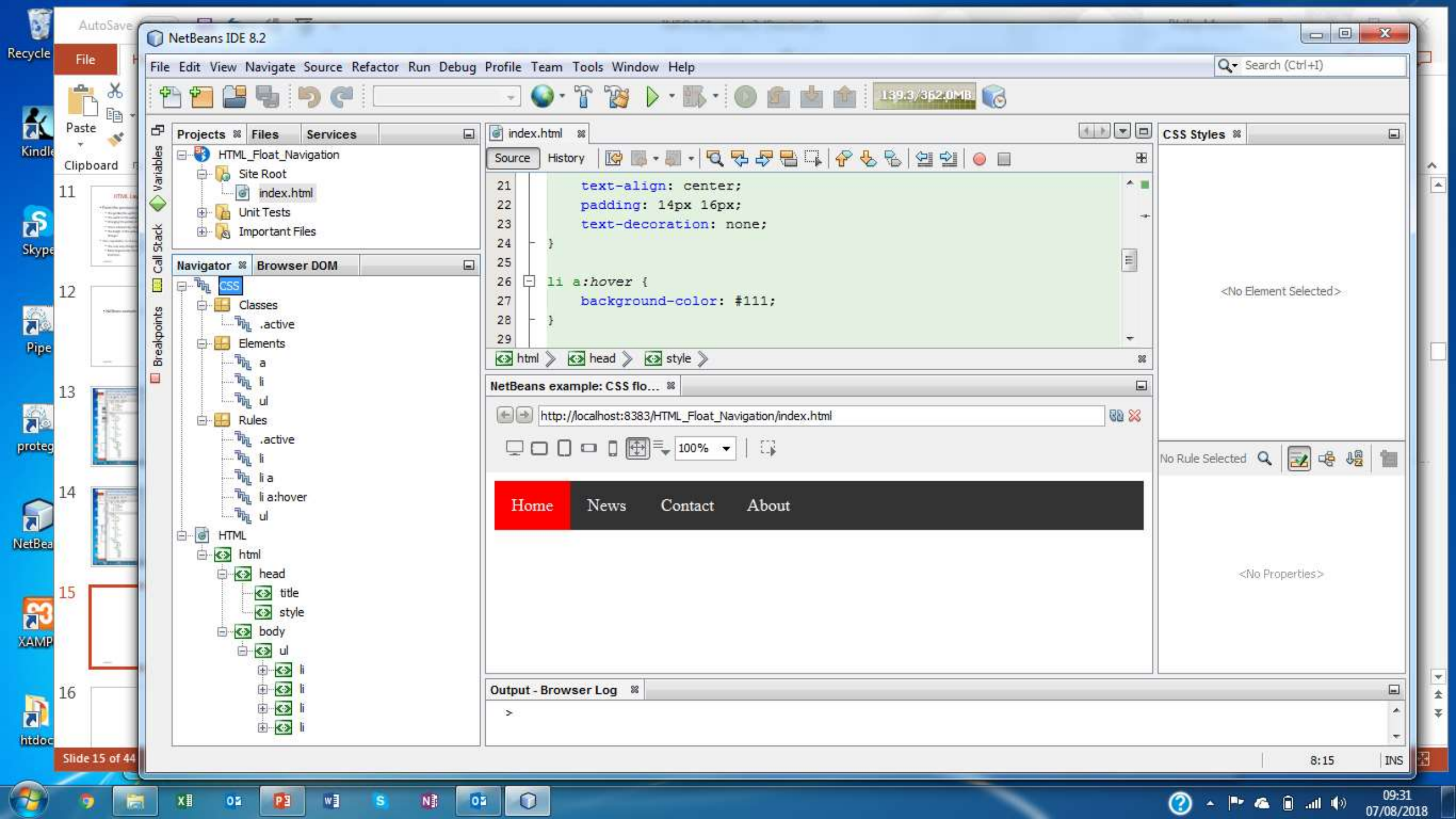
NetBeans IDE 8.2
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21 text-align: center;
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23 text-decoration: none;
24 }
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26 li a:hover {
27 background-color: #111;
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NetBeans example: CSS flo...
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Home News Contact About
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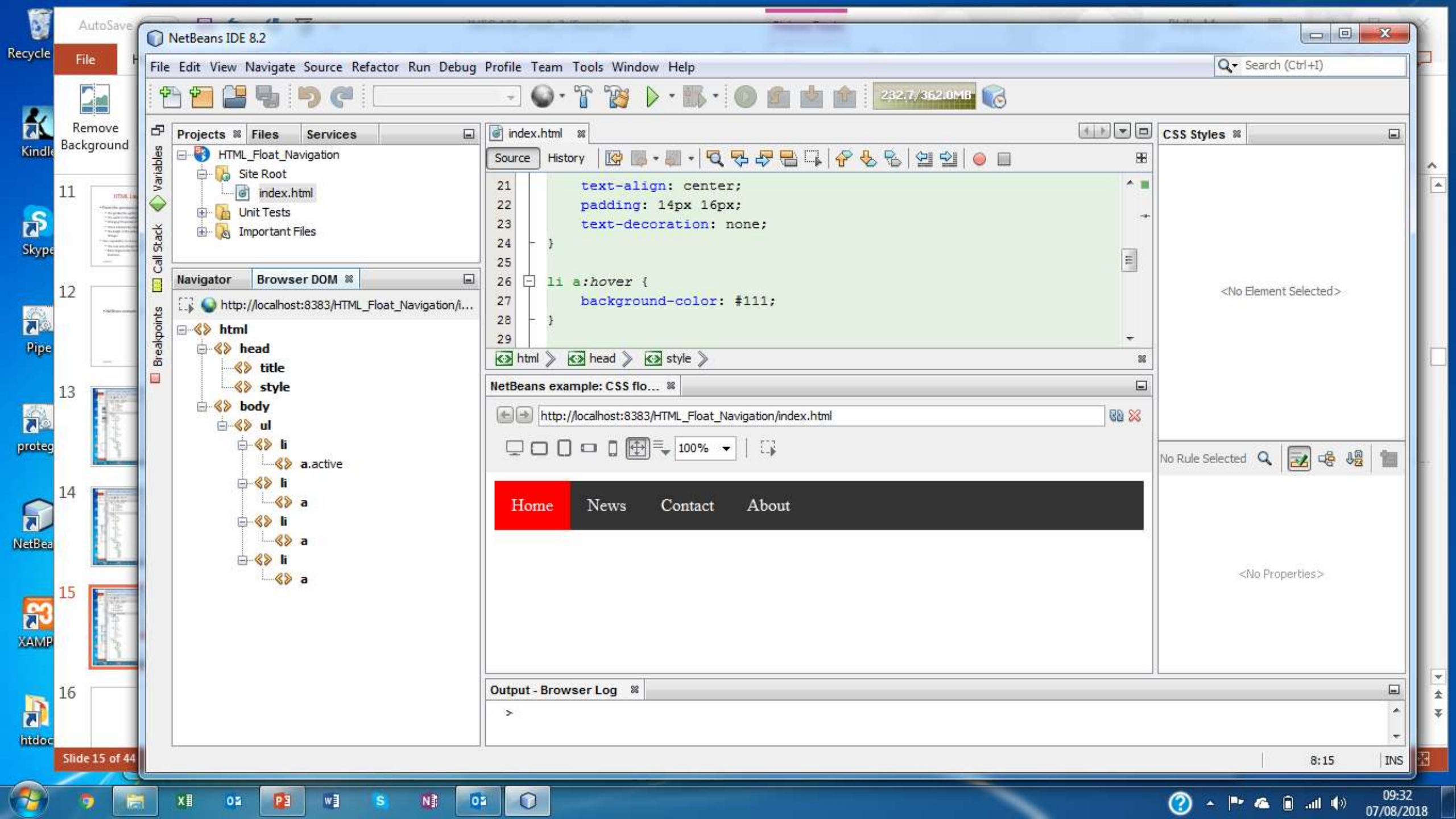
8:15 INS
Slide 15 of 44
09:31
07/08/2018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22 padding: 14px 16px;
23 text-decoration: none;
24 }
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26 li a:hover {
27 background-color: #111;
28 }
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No Rule Selected
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NetBeans example: CSS flo...
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100%
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Contact
About
Output - Browser Log
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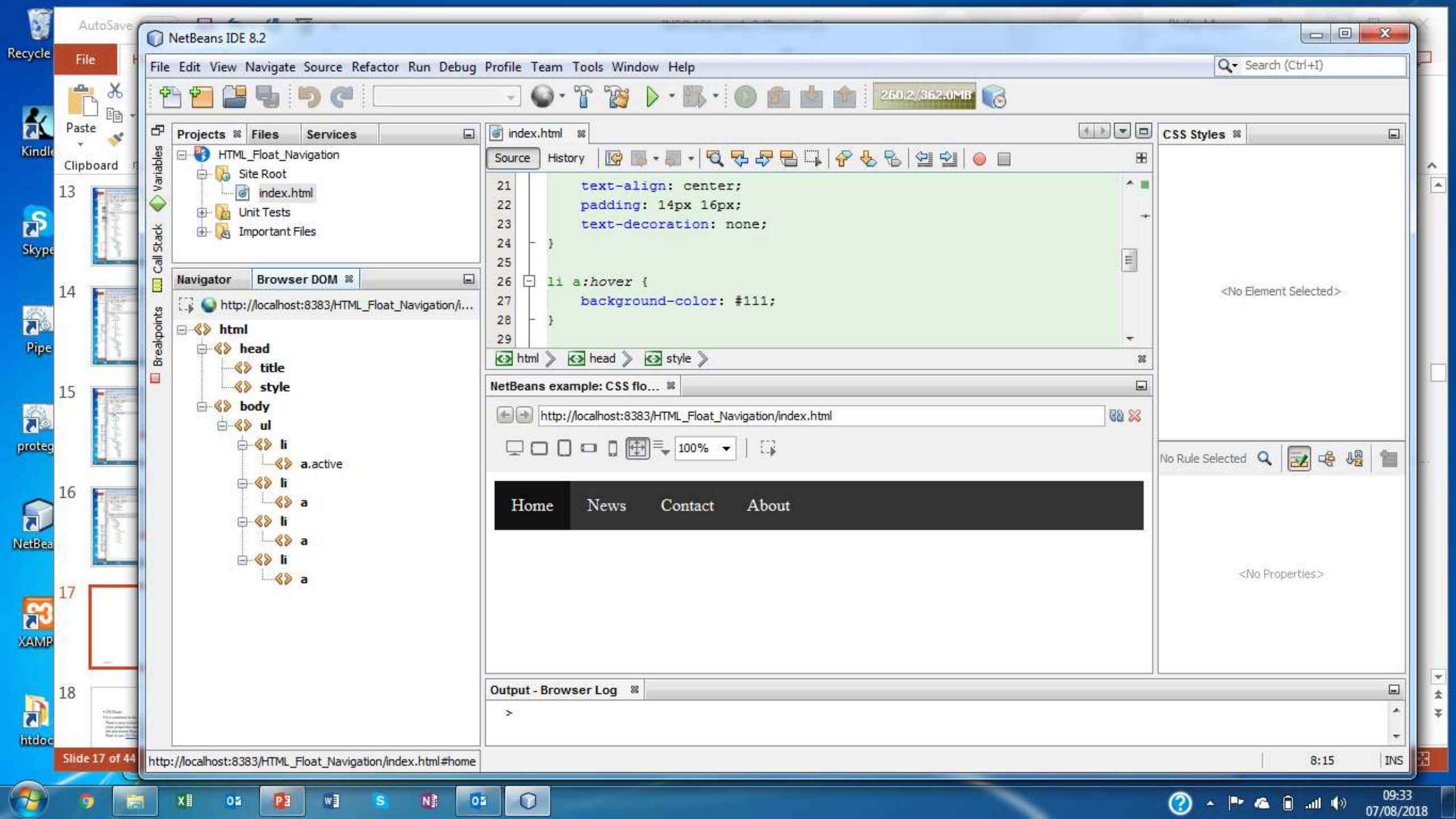
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Unit Tests
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Source History
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22 padding: 14px 16px;
23 text-decoration: none;
24 }
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26 li a:hover {
27 background-color: #111;
28 }
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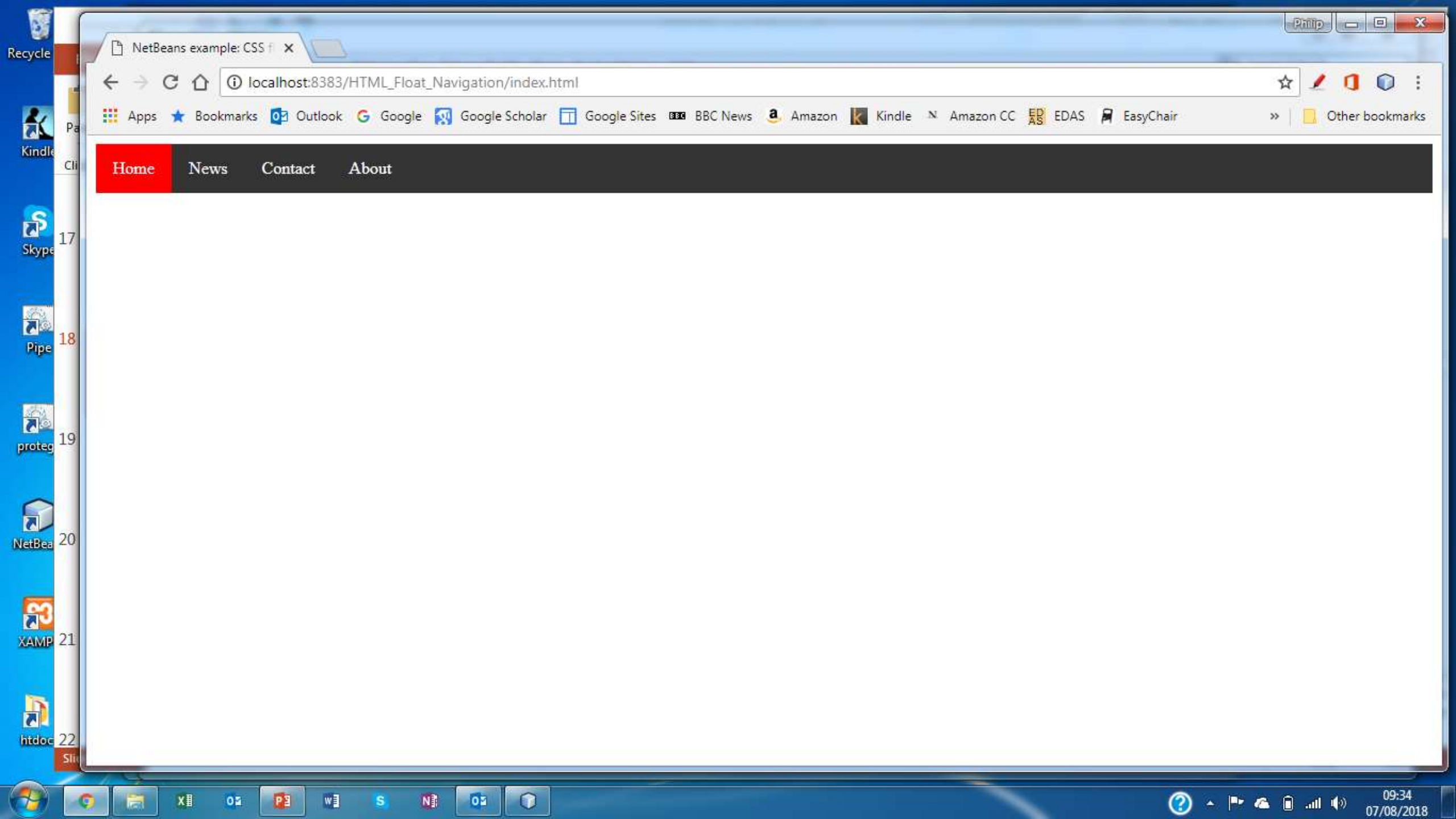
html head style
CSS Styles
<No Element Selected>
No Rule Selected
<No Properties>
NetBeans example: CSS flo...
http://localhost:8383/HTML_Float_Navigation/index.html
100%
Home News Contact About
Output - Browser Log
>
http://localhost:8383/HTML_Float_Navigation/index.html#home
8:15
INS
Slide 17 of 44
09:33
07/08/2018


NetBeans example: CSS
localhost:8383/HTML_Float_Navigation/index.html
Apps
Bookmarks
Outlook
Google
Google Scholar
Google Sites
BBC News
Amazon
Kindle
Amazon CC
EDAS
EasyChair
Other bookmarks
Home
News
Contact
About
09:34
07/08/2018

CSS flexbox

HTML Layout using CSS flexbox

- CSS flexbox is a new layout mode in CSS3
- Advantages
  - Use of flexbox ensures that elements behave predictably when
    - The web-page layout must accommodate different interfaces and screen sizes
    - The web-page layout must present the optimal layout on different devices
- Disadvantages
  - CSS flexbox is not supported by older browsers (IE10 and earlier)
- Details of CSS flexbox may be found in the course resources

CSS Flexbox Properties

Full details of the CSS flexbox properties can be found at w3schools.com

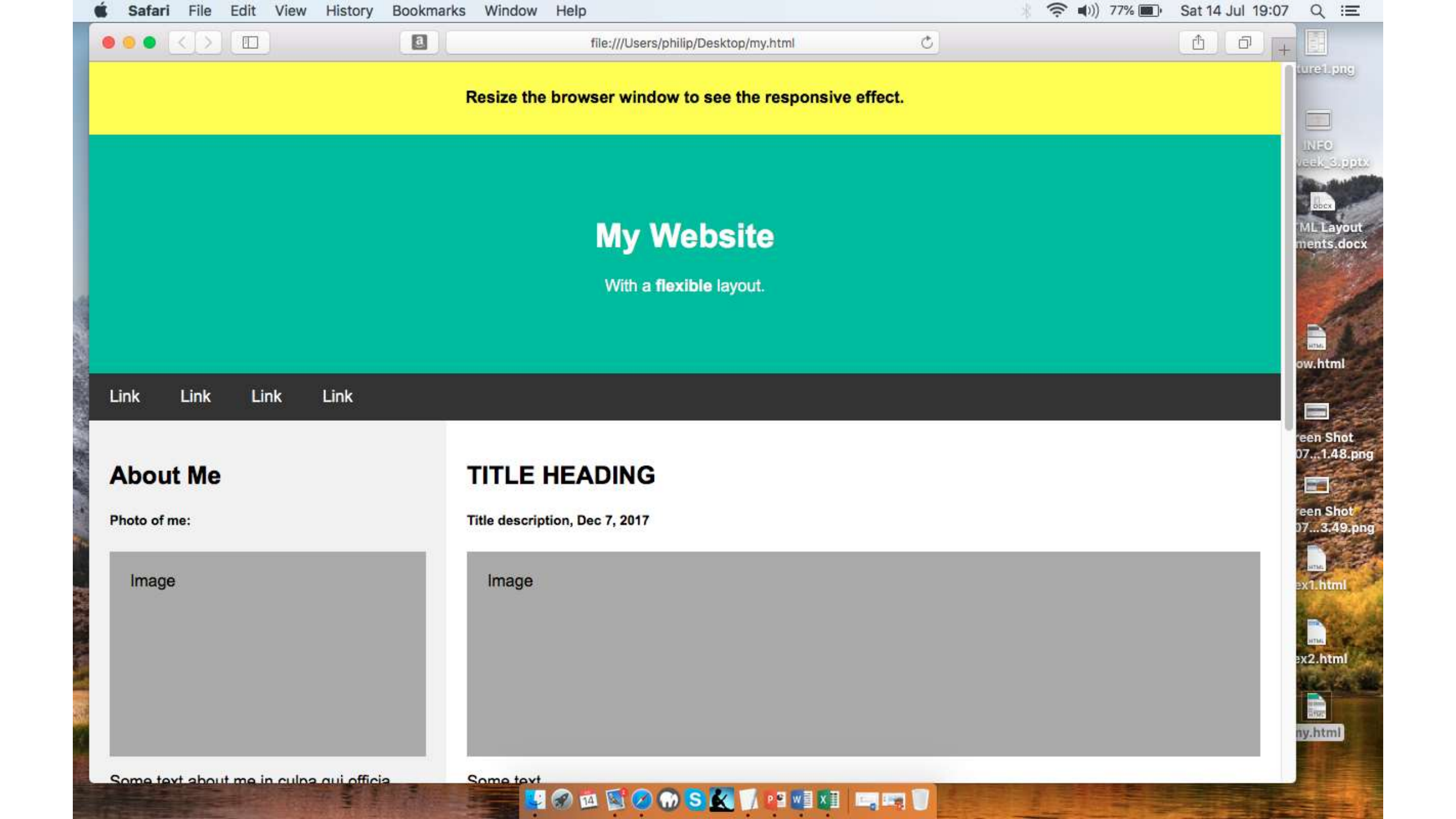
Value	Description
flex-grow	A number specifying how much the item will grow relative to the rest of the flexible items
flex-shrink	A number specifying how much the item will shrink relative to the rest of the flexible items
flex-basis	The length of the item. Legal values: "auto", "inherit", or a number followed by "%", "px", "em" or any other length unit
auto	Same as 1 1 auto.
initial	Same as 0 1 auto. Read about *initial*
none	Same as 0 0 auto.
inherit	Inherits this property from its parent element. Read about *inherit*

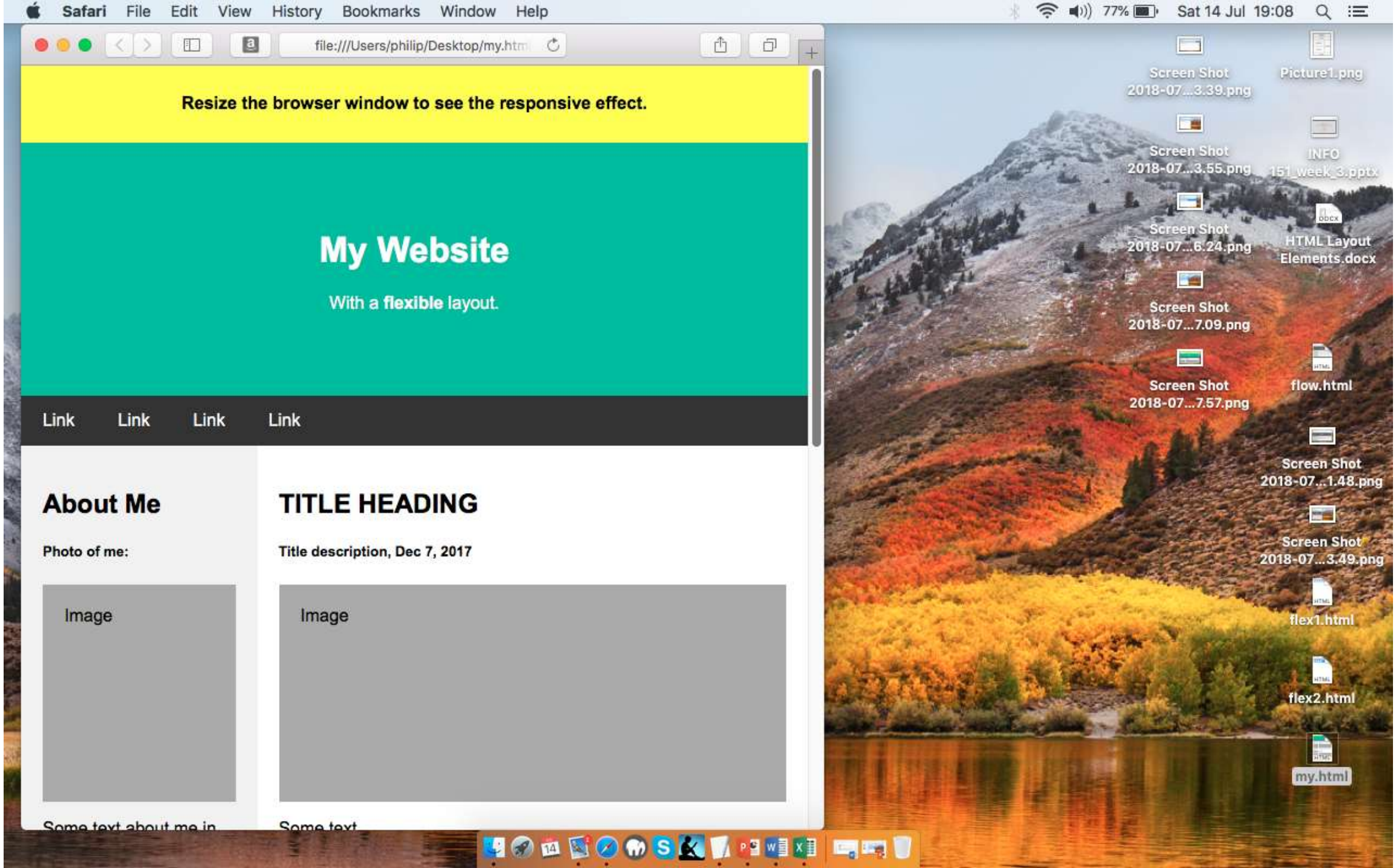
CSS Properties used in flexbox

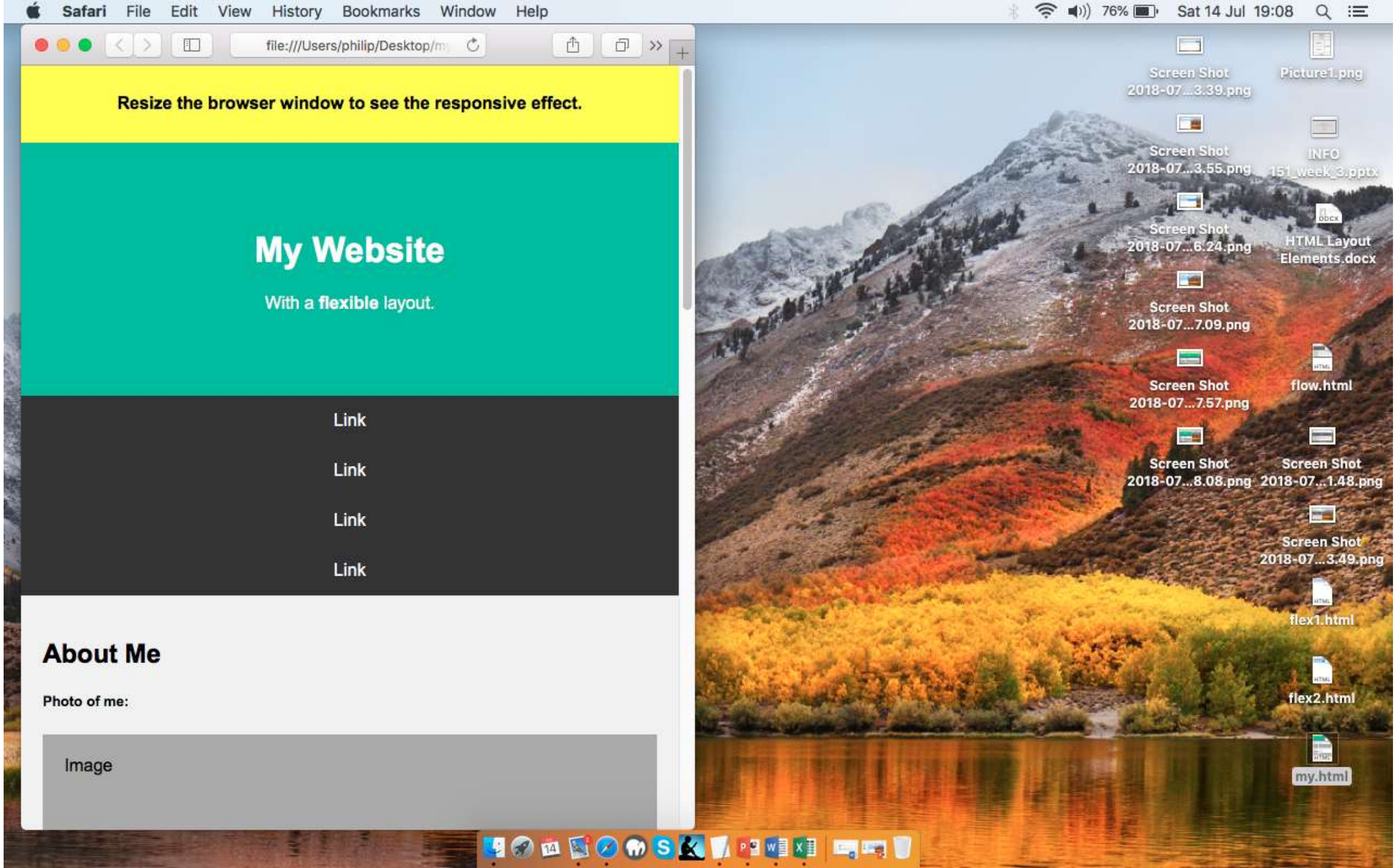
Property	Description
display	Specifies the type of box used for an HTML element
flex-direction	Specifies the direction of the flexible items inside a flex container
justify-content	Horizontally aligns the flex items when the items do not use all available space on the main-axis
align-items	Vertically aligns the flex items when the items do not use all available space on the cross-axis
flex-wrap	Specifies whether the flex items should wrap or not, if there is not enough room for them on one flex line
align-content	Modifies the behavior of the flex-wrap property. It is similar to align-items, but instead of aligning flex items, it aligns flex lines
flex-flow	A shorthand propert for flex-direction and flex-wrap
order	Specifies the order of a flexible item relative to the rest of the flex items inside the same container
align-self	Used on flex items. Overrides the container's align-items property
flex	Specifies the length of a flex item, relative to the rest of the flex items inside the same container

HTML Layout using CSS flexbox

- From the following slides we can see that
  - The profile (the width) of the web-page dynamically changes
  - Changing the profile of the web-page also redefines he sections defined in the web-page
  - This is achieved by ‘dragging’ the edges of the web-page to a desired size
  - The height of the web-page will also change dynamically
- As for the *CSS float* the capability to change profile has a number of benefits
  - The user may change the profile ‘on-the-fly’ when viewing the web-page
  - Again: the layout of the webpage can be changed to suit different devices and interfaces

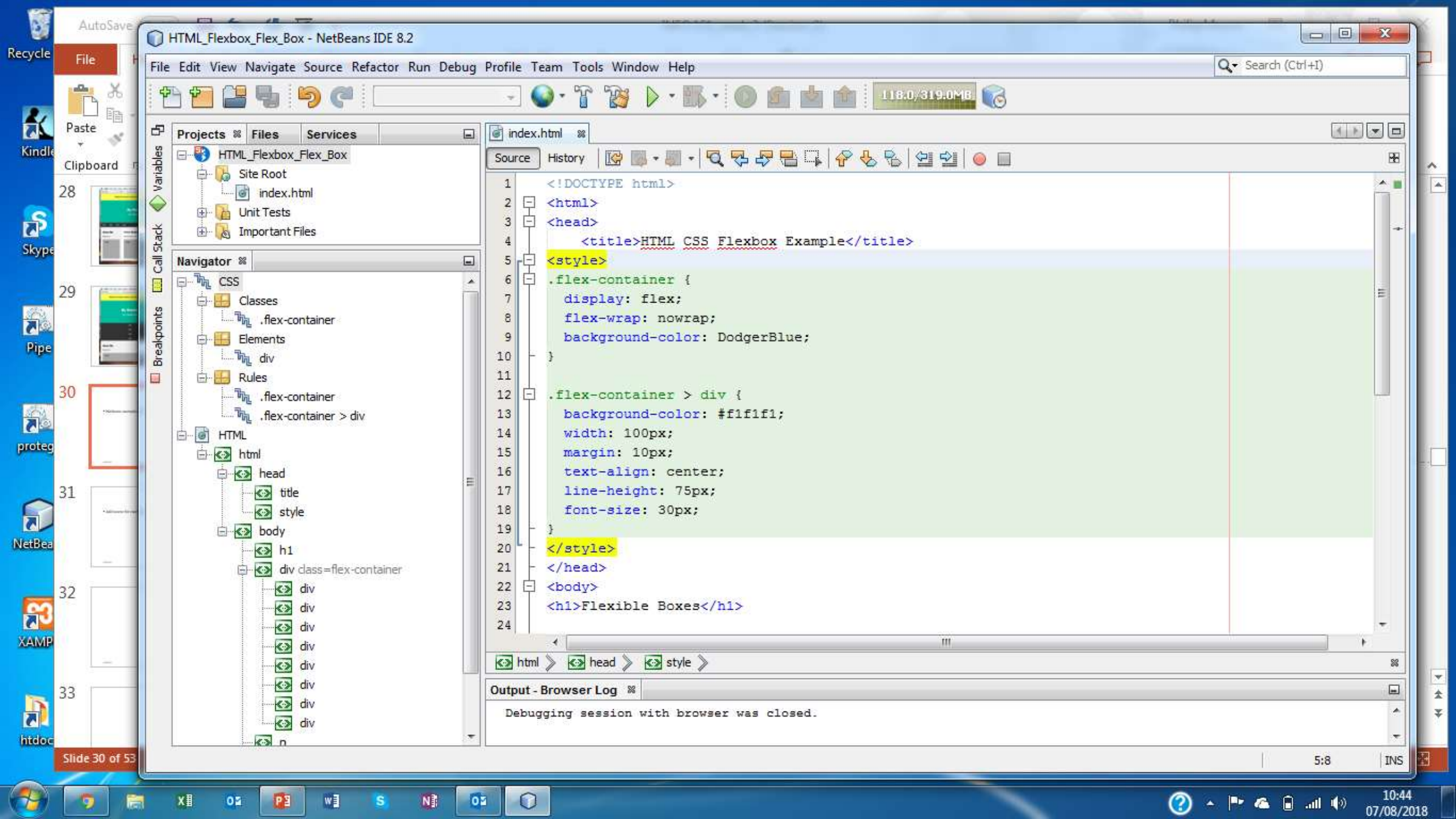

Safari File Edit View History Bookmarks Window Help
77% Sat 14 Jul 19:07
file:///Users/philip/Desktop/my.html
Resize the browser window to see the responsive effect.
My Website
With a flexible layout.
Link Link Link Link
About Me
Photo of me:
Image
Some text about me in culpa qui officia
TITLE HEADING
Title description, Dec 7, 2017
Image
Some text


Safari File Edit View History Bookmarks Window Help
77% Sat 14 Jul 19:08
file:///Users/philip/Desktop/my.htm
Resize the browser window to see the responsive effect.
My Website
With a flexible layout.
Link Link Link Link
About Me
Photo of me:
Image
Some text about me in
TITLE HEADING
Title description, Dec 7, 2017
Image
Some text
Screen Shot 2018-07...3.39.png
Picture1.png
Screen Shot 2018-07...3.55.png
INFO 151_week_3.pptx
Screen Shot 2018-07...6.24.png
HTML Layout Elements.docx
Screen Shot 2018-07...7.09.png
Screen Shot 2018-07...7.57.png
flow.html
Screen Shot 2018-07...1.48.png
Screen Shot 2018-07...3.49.png
flex1.html
flex2.html
my.html


Safari File Edit View History Bookmarks Window Help
76% Sat 14 Jul 19:08
file:///Users/philip/Desktop/my
Resize the browser window to see the responsive effect.
My Website
With a flexible layout.
Link
Link
Link
Link
About Me
Photo of me:
Image
Screen Shot 2018-07...3.39.png
Picture1.png
Screen Shot 2018-07...3.55.png
INFO 151_week_3.pptx
Screen Shot 2018-07...6.24.png
HTML Layout Elements.docx
Screen Shot 2018-07...7.09.png
Screen Shot 2018-07...7.57.png
flow.html
Screen Shot 2018-07...8.08.png
Screen Shot 2018-07...1.48.png
Screen Shot 2018-07...3.49.png
flex1.html
flex2.html
my.html

A CSS *flexbox* Example in NetBeans IDE

- The following slides show an example of the CSS flexbox layout implemented in the NetBeans IDE
- We can see from the NetBeans IDE
  - The Projects, Navigator and Browser Dom information and elements
- The HTML and style rules that define the output are shown in the NetBeans editor
- The output shows
  - The dynamically changing output to match the web-browser profile
  - The width and size of the elements change dynamically to match the width of the display


HTML_Flexbox_Flex_Box - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+I)
118.0/319.0MB
Projects
Files
Services
HTML_Flexbox_Flex_Box
Site Root
index.html
Unit Tests
Important Files
Navigator
CSS
Classes
.flex-container
Elements
div
Rules
.flex-container
.flex-container > div
HTML
html
head
title
style
body
h1
div class=flex-container
div
div
div
div
div
div
div
div
p
index.html
Source
History
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>HTML CSS Flexbox Example</title>
5 <style>
6 .flex-container {
7 display: flex;
8 flex-wrap: nowrap;
9 background-color: DodgerBlue;
10 }
11
12 .flex-container > div {
13 background-color: #f1f1f1;
14 width: 100px;
15 margin: 10px;
16 text-align: center;
17 line-height: 75px;
18 font-size: 30px;
19 }
20 </style>
21 </head>
22 <body>
23 <h1>Flexible Boxes</h1>
24
html
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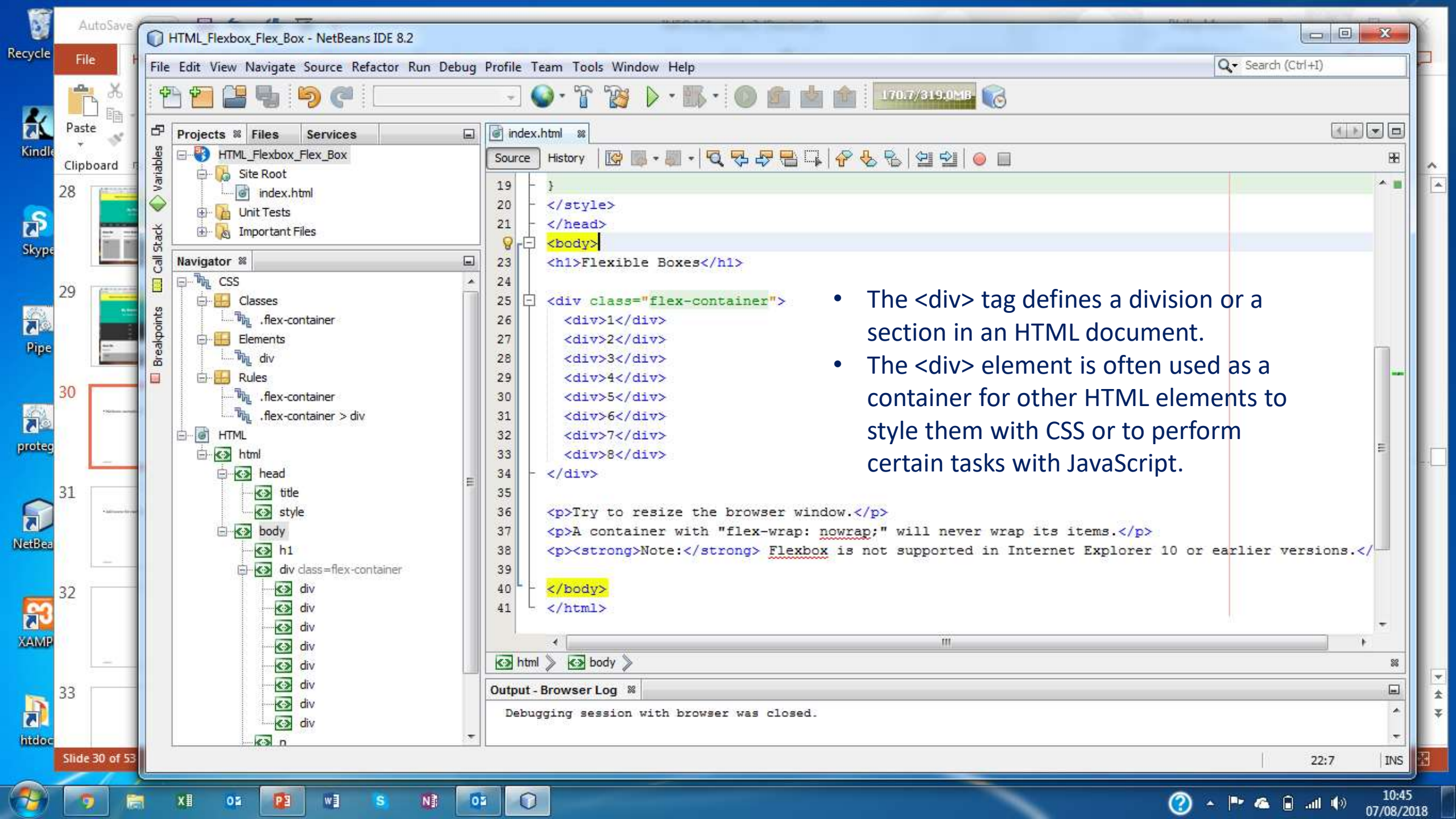
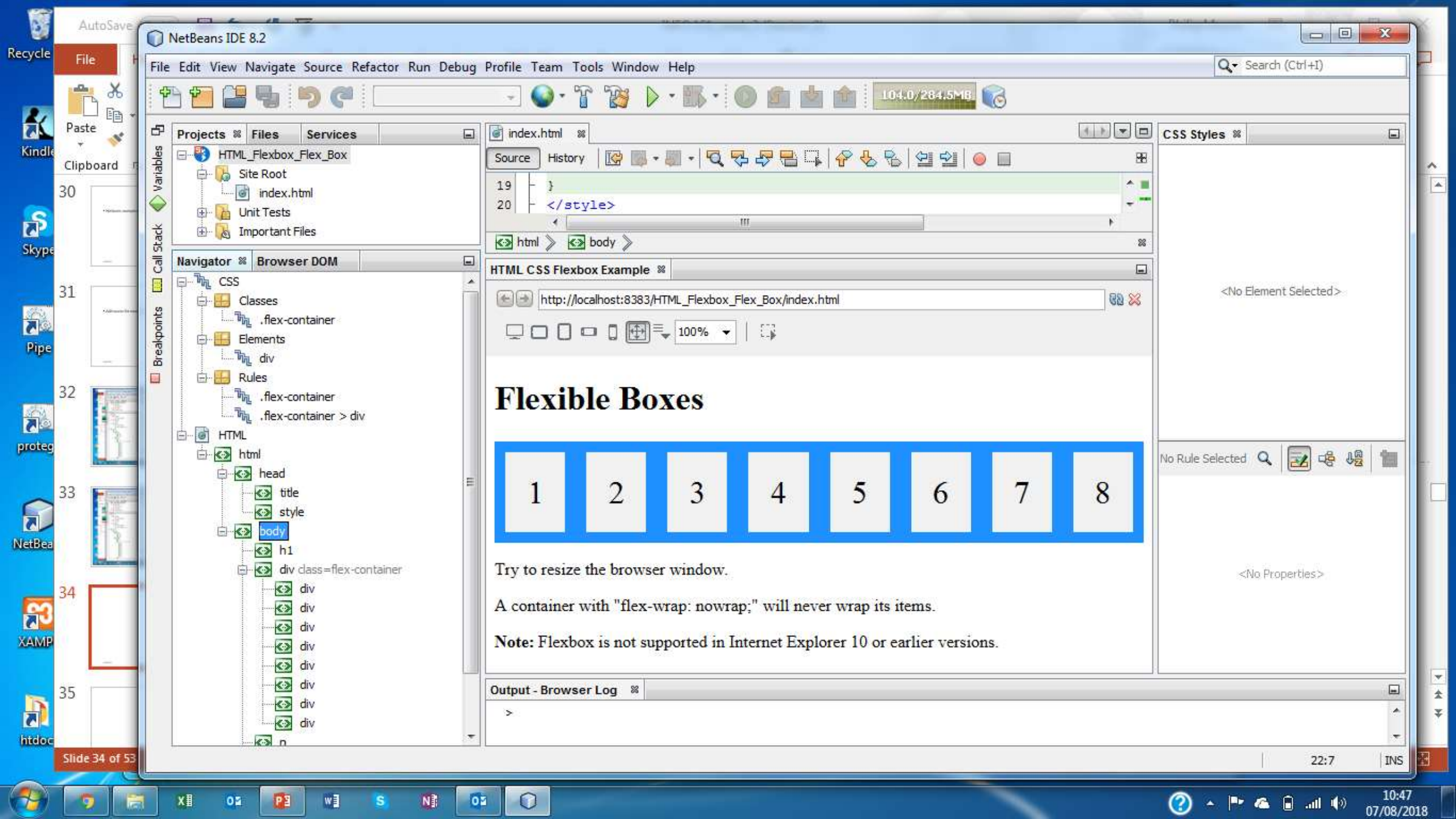
Output - Browser Log
Debugging session with browser was closed.
5:8
INS



- The tag defines a division or a section in an HTML document.
- The element is often used as a container for other HTML elements to style them with CSS or to perform certain tasks with JavaScript.


NetBeans IDE 8.2
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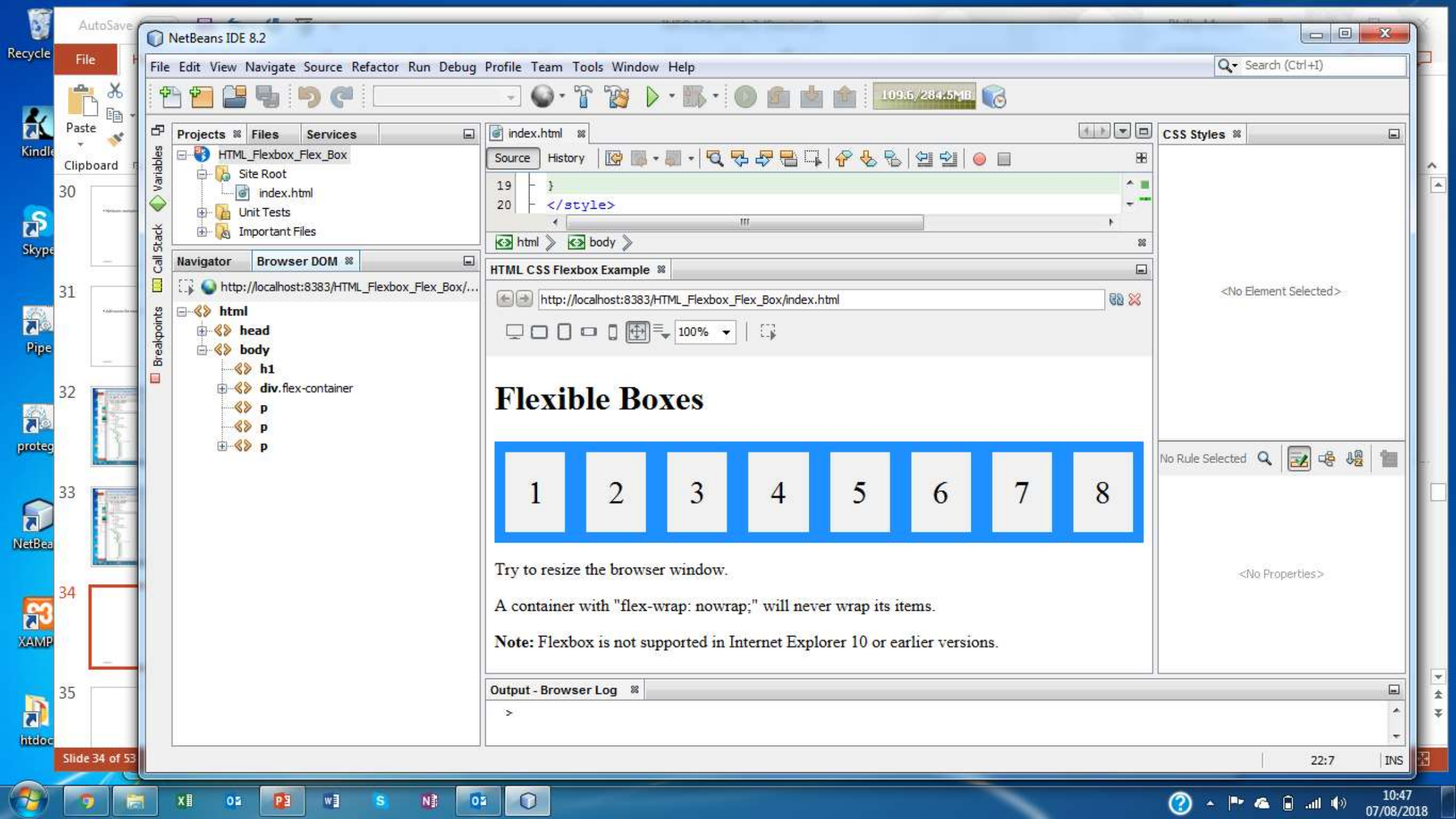
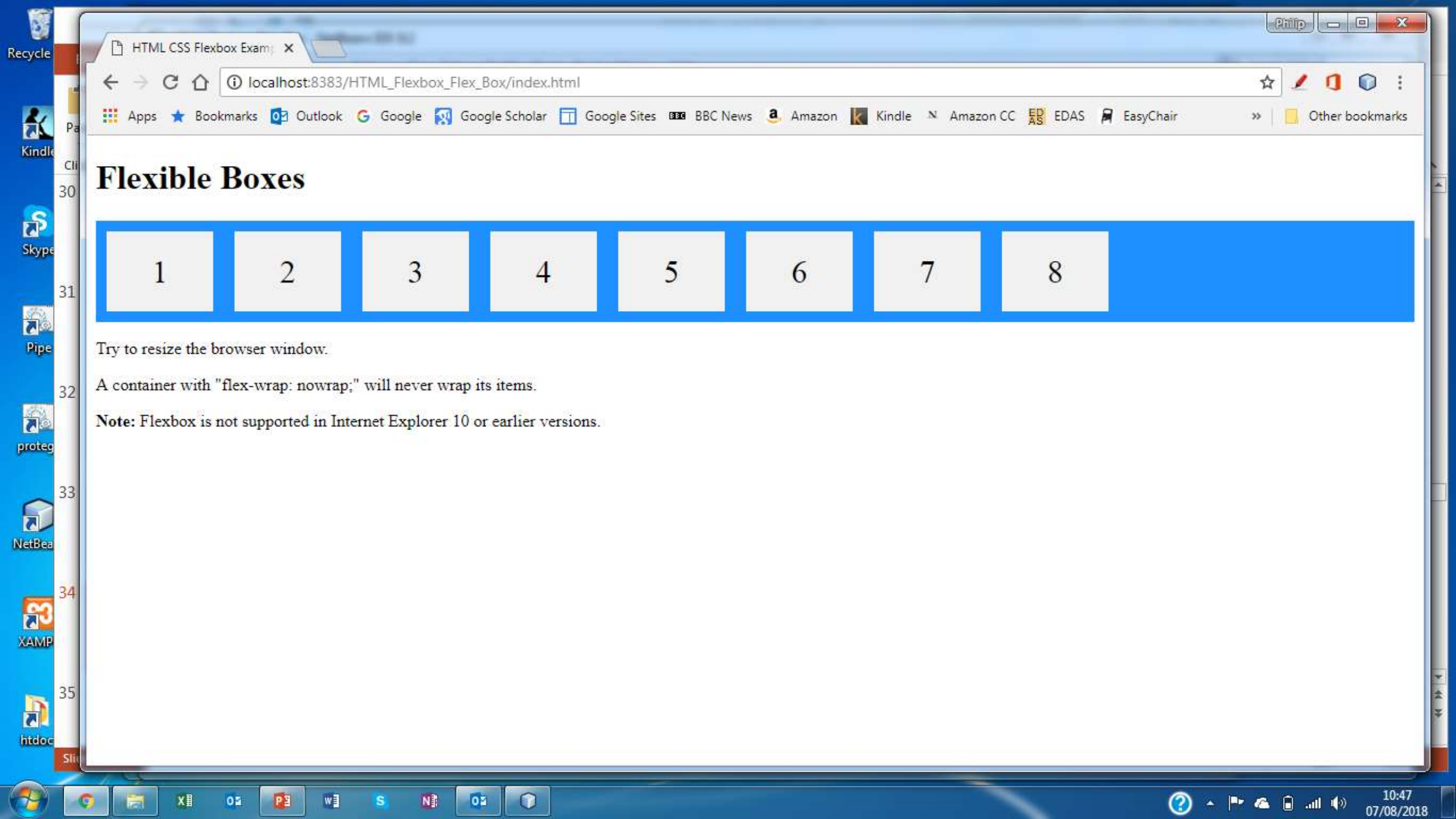
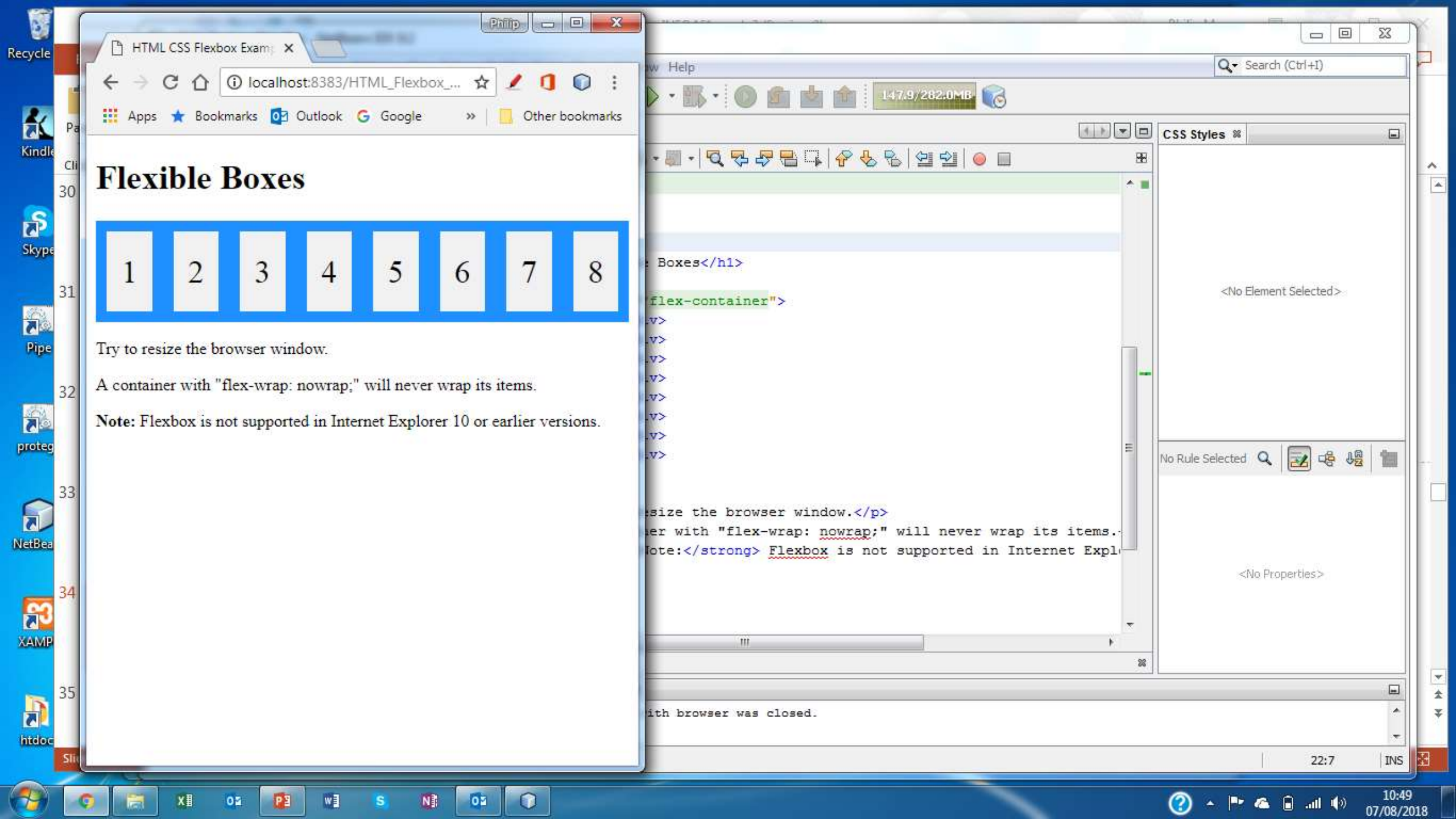
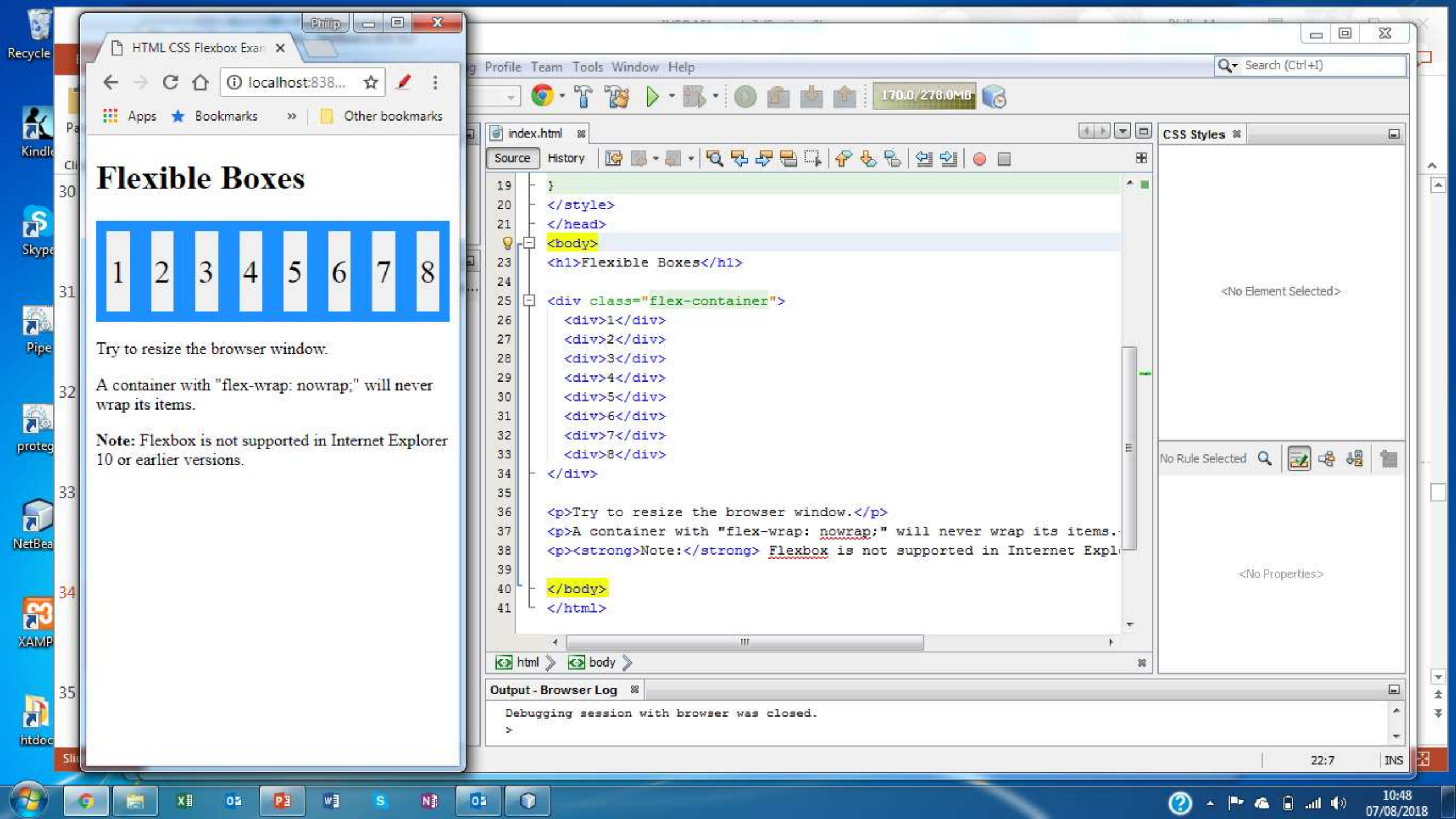
Projects Files Services
HTML_Flexbox_Flex_Box
Site Root
index.html
Unit Tests
Important Files
Navigator Browser DOM
CSS
Classes
.flex-container
Elements
div
Rules
.flex-container
.flex-container > div
HTML
html
head
title
style
body
h1
div class=flex-container
div
index.html
Source History
19 }
20 </style>
html body
HTML CSS Flexbox Example
http://localhost:8383/HTML_Flexbox_Flex_Box/index.html
100%
Flexible Boxes
1 2 3 4 5 6 7 8
Try to resize the browser window.
A container with "flex-wrap: nowrap;" will never wrap its items.
Note: Flexbox is not supported in Internet Explorer 10 or earlier versions.
CSS Styles
<No Element Selected>
No Rule Selected
<No Properties>
Output - Browser Log
22:7
INS
Slide 34 of 53
10:47
07/08/2018


NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+I)
109.6/284.5MB
Projects Files Services
HTML_Flexbox_Flex_Box
Site Root
index.html
Unit Tests
Important Files
Navigator Browser DOM
http://localhost:8383/HTML_Flexbox_Flex_Box/...
html
head
body
h1
div.flex-container
p
p
p
index.html
Source History
19 }
20 </style>
html body
HTML CSS Flexbox Example
http://localhost:8383/HTML_Flexbox_Flex_Box/index.html
100%
Flexible Boxes
1 2 3 4 5 6 7 8
Try to resize the browser window.
A container with "flex-wrap: nowrap;" will never wrap its items.
Note: Flexbox is not supported in Internet Explorer 10 or earlier versions.
CSS Styles
<No Element Selected>
No Rule Selected
<No Properties>
Output - Browser Log
22:7
INS
Slide 34 of 53
10:47
07/08/2018


HTML CSS Flexbox Exam
localhost:8383/HTML_Flexbox_Flex_Box/index.html
Apps
Bookmarks
Outlook
Google
Google Scholar
Google Sites
BBC News
Amazon
Kindle
Amazon CC
EDAS
EasyChair
Other bookmarks
Flexible Boxes
1
2
3
4
5
6
7
8
Try to resize the browser window.
A container with "flex-wrap: nowrap;" will never wrap its items.
Note: Flexbox is not supported in Internet Explorer 10 or earlier versions.


HTML CSS Flexbox Exam
localhost:8383/HTML_Flexbox_...
Apps
Bookmarks
Outlook
Google
Other bookmarks
Flexible Boxes
1
2
3
4
5
6
7
8
Try to resize the browser window.
A container with "flex-wrap: nowrap;" will never wrap its items.
Note: Flexbox is not supported in Internet Explorer 10 or earlier versions.
CSS Styles
<No Element Selected>
No Rule Selected
<No Properties>
22:7
INS
10:49
07/08/2018


HTML CSS Flexbox Exar
localhost:838...
Apps
Bookmarks
Other bookmarks
Flexible Boxes
1 2 3 4 5 6 7 8
Try to resize the browser window.
A container with "flex-wrap: nowrap;" will never wrap its items.
Note: Flexbox is not supported in Internet Explorer 10 or earlier versions.
index.html
Source
History
19 }
20 </style>
21 </head>
<body>
23 <h1>Flexible Boxes</h1>
25
26 1
27 2
28 3
29 4
30 5
31 6
32 7
33 8
34
36 Try to resize the browser window.
37 A container with "flex-wrap: nowrap;" will never wrap its items.
38 Note: Flexbox is not supported in Internet Expl
40 </body>
41 </html>
CSS Styles
<No Element Selected>
No Rule Selected
<No Properties>
html
body
Output - Browser Log
Debugging session with browser was closed.
22:7
INS

HTML Layout using a CSS framework

What is a Framework?

- Recall that in Week #1 we introduced the concept of a programming framework
- NetBeans has a built-in framework of pre-programmed code modules (*application programming interfaces* (or API's)
- The aim of such a framework is to promote modular computer programming using re-usable code modules
- The CSS framework operates on the same principle where regularly used components are available in pre-programmed HTML CSS components

HTML Layout using a CSS framework

- What is a CSS framework?
  - CSS frameworks provide a basic structure for designing consistent solutions
  - Addresses common recurring issues across front end web development.
  - CSS frameworks provide generic functionality which can be overridden to create domain-specific applications
  - There are many existing CSS Frameworks that offer Responsive Design.
- A typical CSS framework is the W3.CSS framework
- The W3.CSS enables development of web-sites across a range of devices and interfaces

W3.CSS

- W3.CSS is a modern CSS framework with built-in responsiveness
  - Smaller and faster than other CSS frameworks
  - Easier to learn, and easier to use than other CSS frameworks
  - Better cross-browser compatibility than other CSS frameworks
  - Uses standard CSS only (No jQuery or JavaScript library)
  - Supports modern responsive mobile first design by default
  - Provides CSS equality for all browsers: Chrome, Firefox, Edge, IE, Safari, Opera, ...
  - Provides CSS equality for all devices: desktop, laptop, tablet, and mobile
  - Speeds up and simplifies web development

W3.CSS Examples

- W3.CSS cover the majority of HTML elements – examples include
  - W3.CSS Navigation
  - W3.CSS Sidebar
  - W3.CSS Panels
  - W3.CSS Text
  - W3.CSS Round
  - W3.CSS Buttons
  - W3.CSS Tables
  - W3.CSS Lists
- The following slides demonstrate the implementation of these elements using W3.CSS

W3.CSS - Navigation

Run »

Result Size: 620 x 441

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h2>Navigation Bars</h2>
  <p>The <strong>w3-bar</strong> class is a container for displaying
HTML elements horizontally.</p>
  <p>The <strong>w3-bar-item</strong> class defines the container
elements.</p>
  <p>It it a perfect tool for creating navigation bars:</p>
</div>

<div class="w3-bar w3-black">
  <a href="#" class="w3-bar-item w3-button">Home</a>
  <a href="#" class="w3-bar-item w3-button">Link 1</a>
  <a href="#" class="w3-bar-item w3-button">Link 2</a>
  <a href="#" class="w3-bar-item w3-button">Link 3</a>
</div>

</body>
```

Navigation Bars

The **w3-bar** class is a container for displaying HTML elements horizontally.

The **w3-bar-item** class defines the container elements.

It it a perfect tool for creating navigation bars:

Home Link 1 Link 2 Link 3

W3.CSS - Sidebar

Run »

Result Size: 620 x 441

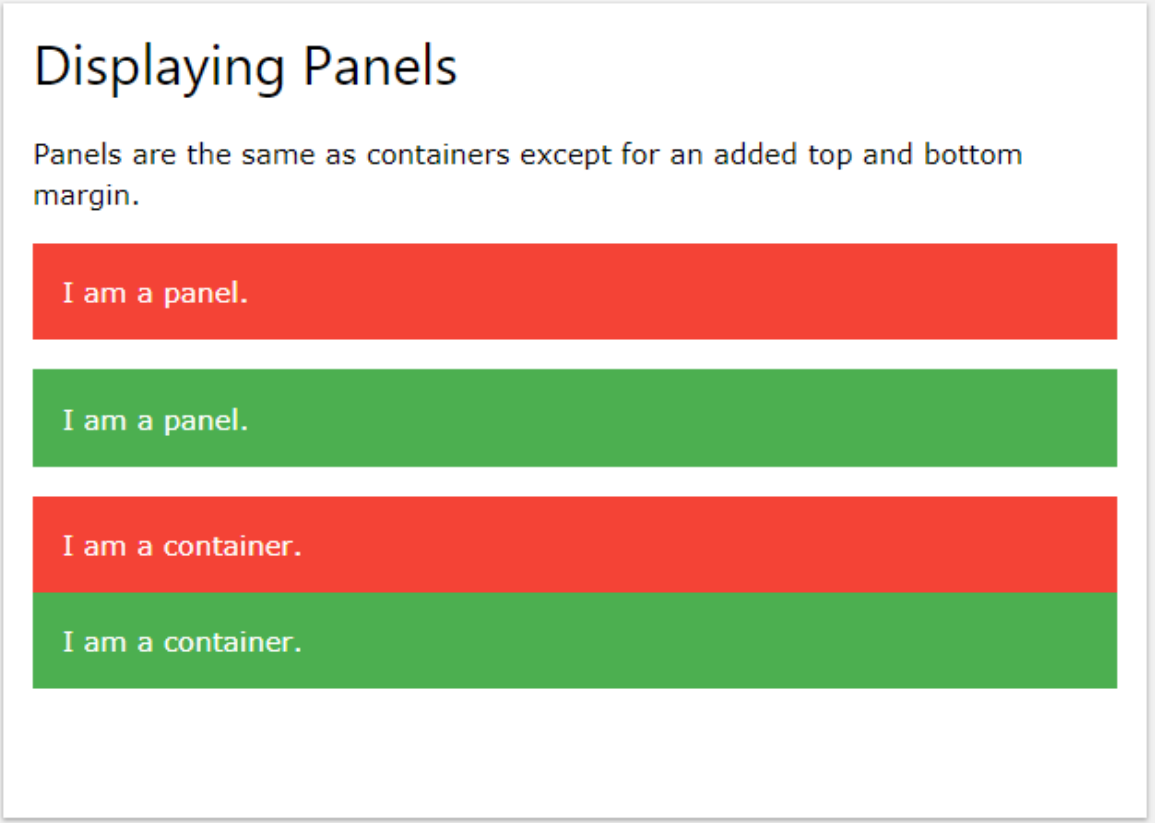
```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<!-- Sidebar -->
<div class="w3-sidebar w3-light-grey w3-bar-block" style="width:25%">
  <h3 class="w3-bar-item">Menu</h3>
  <a href="#" class="w3-bar-item w3-button">Link 1</a>
  <a href="#" class="w3-bar-item w3-button">Link 2</a>
  <a href="#" class="w3-bar-item w3-button">Link 3</a>
</div>

<!-- Page Content -->
<div style="margin-left:25%">

<div class="w3-container w3-teal">
  <h1>My Page</h1>
</div>

<img src="img_car.jpg" alt="Car" style="width:100%">
```

W3.CSS - Panels

Run »

Result Size: 620 x 441

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h2>Displaying Panels</h2>
  <p>Panels are the same as containers except for an added top and
bottom margin.</p>

  <div class="w3-panel w3-red">
    <p>I am a panel.</p>
  </div>
  <div class="w3-panel w3-green">
    <p>I am a panel.</p>
  </div>

  <div class="w3-container w3-red">
    <p>I am a container.</p>
  </div>
  <div class="w3-container w3-green">
    <p>I am a container.</p>
```



W3.CSS - Text

Run »

Result S

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h1>Heading 1 (36px)</h1>
  <h2>Heading 2 (30px)</h2>
  <h3>Heading 3 (24px)</h3>
  <h4>Heading 4 (20px)</h4>
  <h5>Heading 5 (18px)</h5>
  <h6>Heading 6 (16px)</h6>
</div>

</body>
</html>
```

Heading 1 (36px)

Heading 2 (30px)

Heading 3 (24px)

Heading 4 (20px)

Heading 5 (18px)

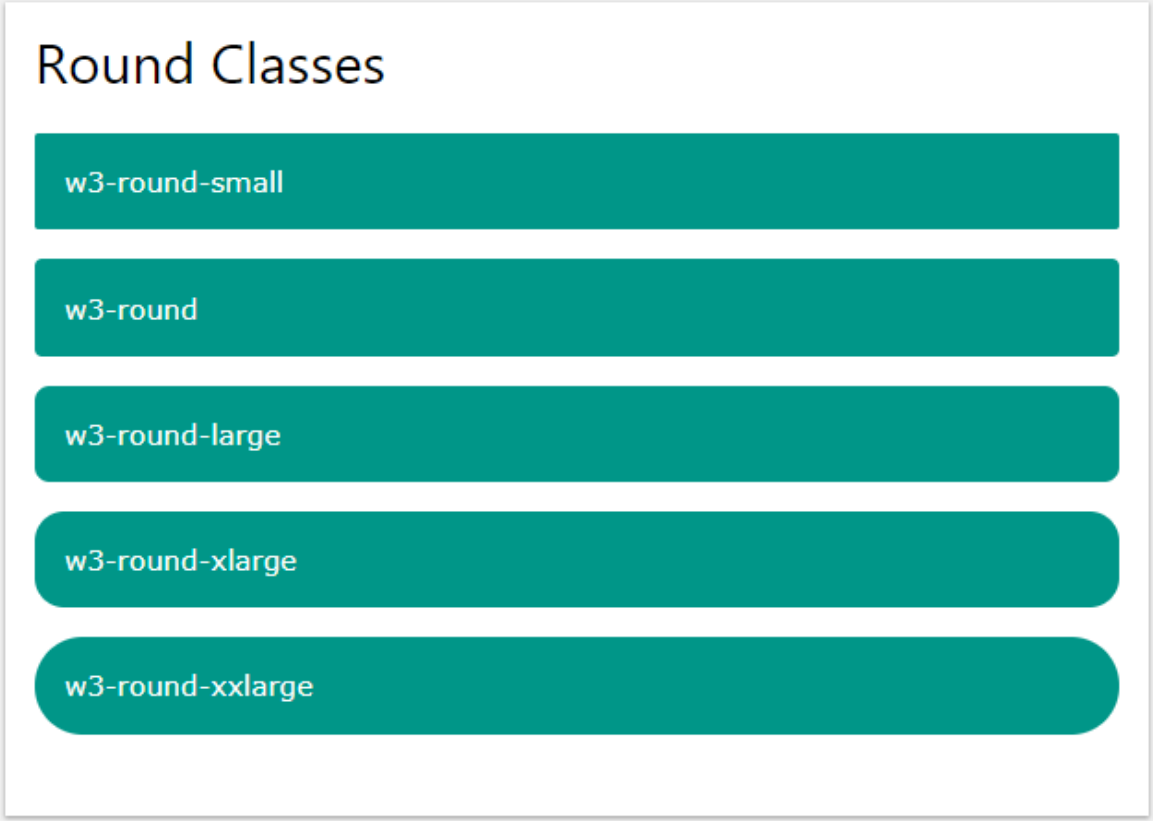
Heading 6 (16px)

W3.CSS – Round Classes

Run »

Result Size: 620 x 441

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h2>Round Classes</h2>

  <div class="w3-panel w3-round-small w3-teal">
    <p>w3-round-small</p>
  </div>

  <div class="w3-panel w3-round w3-teal">
    <p>w3-round</p>
  </div>

  <div class="w3-panel w3-round-large w3-teal">
    <p>w3-round-large</p>
  </div>

  <div class="w3-panel w3-round-xlarge w3-teal">
    <p>w3-round-xlarge</p>
```



W3.CSS - Buttons

Run »

Result Size: 620 x 441

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h2>Buttons (w3-button)</h2>
  <input type="button" class="w3-button w3-black" value="Input Button">
  <button class="w3-button w3-black">Button Button</button>
  <a href="#" class="w3-button w3-black">Link Button</a>
</div>

<div class="w3-container">
  <h2>Buttons (w3-btn)</h2>
  <input type="button" class="w3-btn w3-black" value="Input Button">
  <button class="w3-btn w3-black">Button Button</button>
  <a href="#" class="w3-btn w3-black">Link Button</a>
</div>

</body>
</html>
```

Waiting for eus.rubiconproject.com...

Buttons (w3-button)

Input Button | Button Button | Link Button

Buttons (w3-btn)

Input Button | Button Button | Link Button

W3.CSS – Basic Table

Run »

Result Size: 620 x 441

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h2>Basic Table</h2>
  <p>The w3-table class defines a basic table:</p>

  <table class="w3-table">
    <tr>
      <th>First Name</th>
      <th>Last Name</th>
      <th>Points</th>
    </tr>
    <tr>
      <td>Jill</td>
      <td>Smith</td>
      <td>50</td>
    </tr>
    <tr>
      <td>Eve</td>
```

Basic Table

The w3-table class defines a basic table:

First Name	Last Name	Points
Jill	Smith	50
Eve	Jackson	94
Adam	Johnson	67

W3.CSS – Basic List

Run »

Result Size: 620 x 441

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>

<div class="w3-container">
  <h2>Basic List</h2>
  <p>The w3-ul class creates a basic list:</p>
  <ul class="w3-ul">
    <li>Jill</li>
    <li>Eve</li>
    <li>Adam</li>
  </ul>
</div>

</body>
</html>
```

Waiting for cdn.connectad.io...

Basic List

The w3-ul class creates a basic list:

- Jill
- Eve
- Adam

Conclusions

Browser Support Reference

- We have introduced the CSS web-page layout techniques
- In previous sessions we have identified the potential variability of web browser support for HTML and HTML 5
- There may be similar problems with web-browser support variability for CSS and CSS3 style sheets
- For details of web-browser support see w3schools.com
- For specific details regarding CSS3 CSS support see
  - https://www.quanzhanketang.com/cssref/css3_browsersupport.html

Feedback

- When designing and developing a web-page (or web-site) we have in previous sessions introduced
  - Usability and security considerations and the ‘trade-off’
- A further important consideration is ‘feedback’ to users
- We have seen in this session a CSS float example where a navigation bar was created with links to other web-pages
  - In this example we saw that when the cursor *hovered* over the home link (*mousover*) the colour changed from red to black
  - This is an example of feedback which informs the user of an action
- When developing web-pages and web-sites user feedback is important

bringing it all together

- Knowing how to create HTML files and run web-pages / web-sites does not address the need for good web-site design
- Bringing it all together is the process of design where
  - The requirements are investigated
  - The appropriate features are selected
  - The features selected are combined into a web-page / web-site that is
    - Attractive / easy to use / effective in presenting the information / provides user interactive feedback
- It is the task of the designer to
  - Meet the user requirements specification
  - Provide a multi-page web-site with clear navigation that users will want to visit

Review

- In this lecture we have:
  - Introduced Web-Page Layout and Design
  - Introduced HTML layout elements
  - Introduced HTML tables
- Shown muti-column web-page layouts using the following 4 methods:
  - HTML tables
  - CSS float property
  - CSS flexbox
  - CSS framework
- Adding style and Cascading Style Sheets in web-page layout and design
- Introduced HTML / CSS layout techniques with examples implemented in the Net Beans IDE