

This is a page that experiments with DOM
We will look at accessing parts of the page

- CIS120
- CIS122
- CIS159
- CIS250
- CIS258

I just found an element by id.

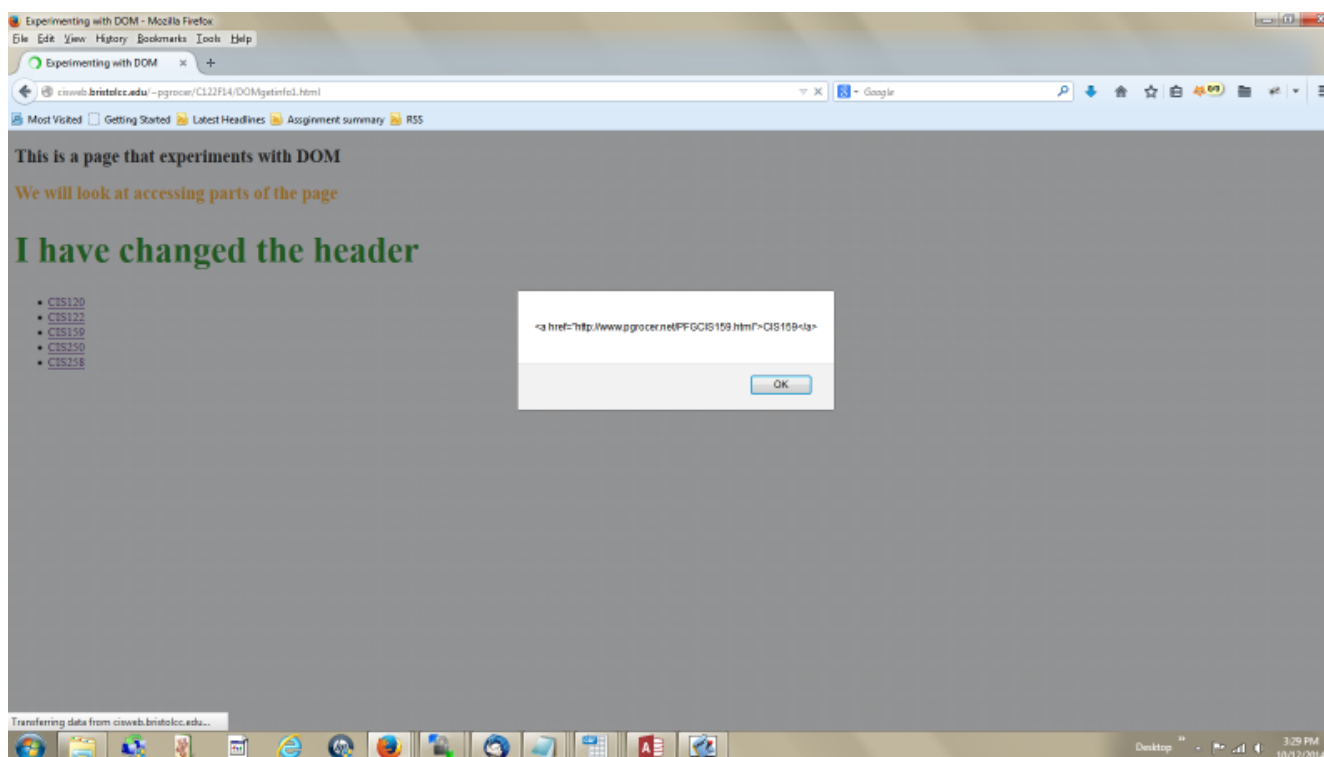
Now I am putting a <h2> header with some text into that division.

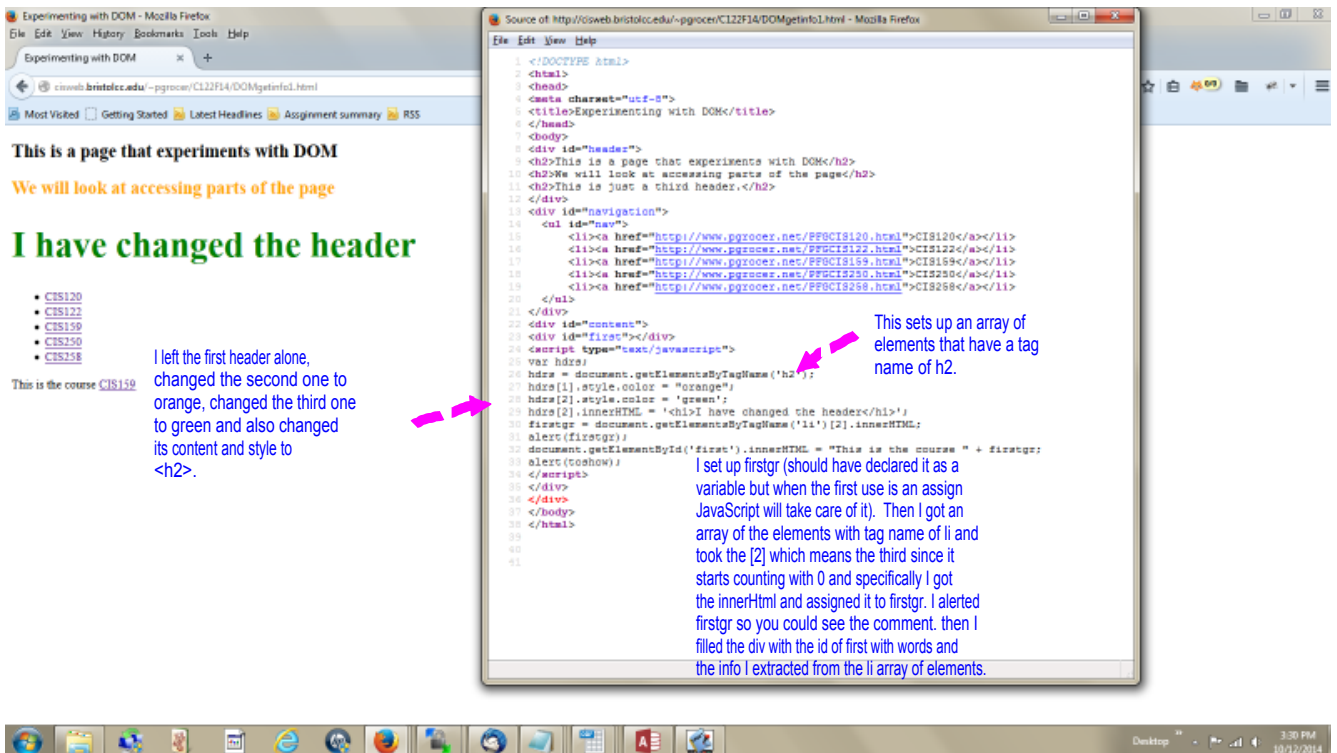
I am assigning the <div> with an id of header to my variable toSet and then assigning a color to the headers.

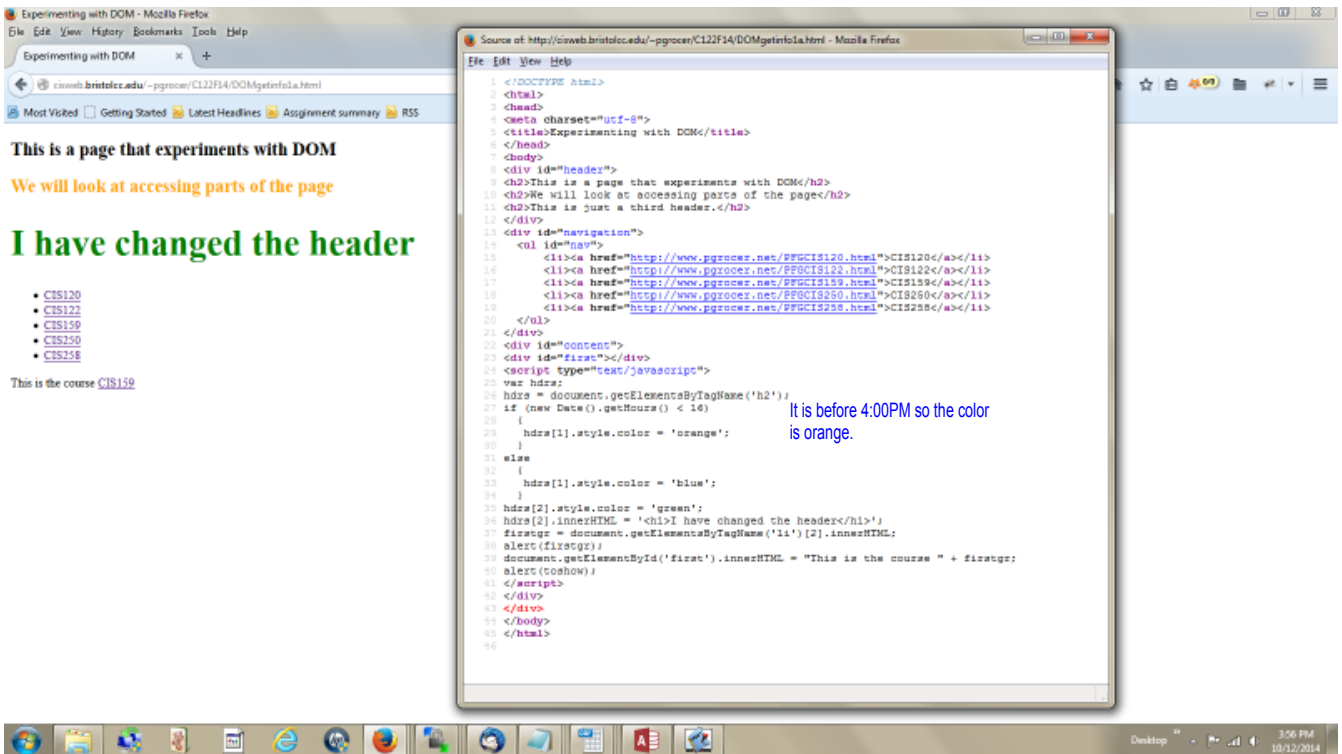
```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Experimenting with DOM</title>
6 <style type = "text/css">
7 .ans
8 {
9   color: red;
10 }
11 </style>
12 </head>
13 <body>
14 <div id="header">
15 <h1>This is a page that experiments with DOM</h1>
16 <h2>We will look at accessing parts of the page</h2>
17 </div>
18 <div id="navigation">
19   <ul id="nav">
20     <li><a href="http://www.pgrocer.net/EPGCIS120.html">CIS120</a></li>
21     <li><a href="http://www.pgrocer.net/EPGCIS122.html">CIS122</a></li>
22     <li><a href="http://www.pgrocer.net/EPGCIS159.html">CIS159</a></li>
23     <li><a href="http://www.pgrocer.net/EPGCIS250.html">CIS250</a></li>
24     <li><a href="http://www.pgrocer.net/EPGCIS258.html">CIS258</a></li>
25   </ul>
26 </div>
27 <div id="content">
28 <div id="first" class="ans"></div>
29 <script type="text/javascript">
30 var toSet;
31 document.getElementById('first').innerHTML = '<h2>I just found an element by id.</h2>';
32 toSet = document.getElementById('header');
33 toSet.style.color = 'pink';
34 document.getElementById('nav').style.background = "beige";
35 </script>
36 </div>
37 </body>
38 </html>
39
40
41
42
```

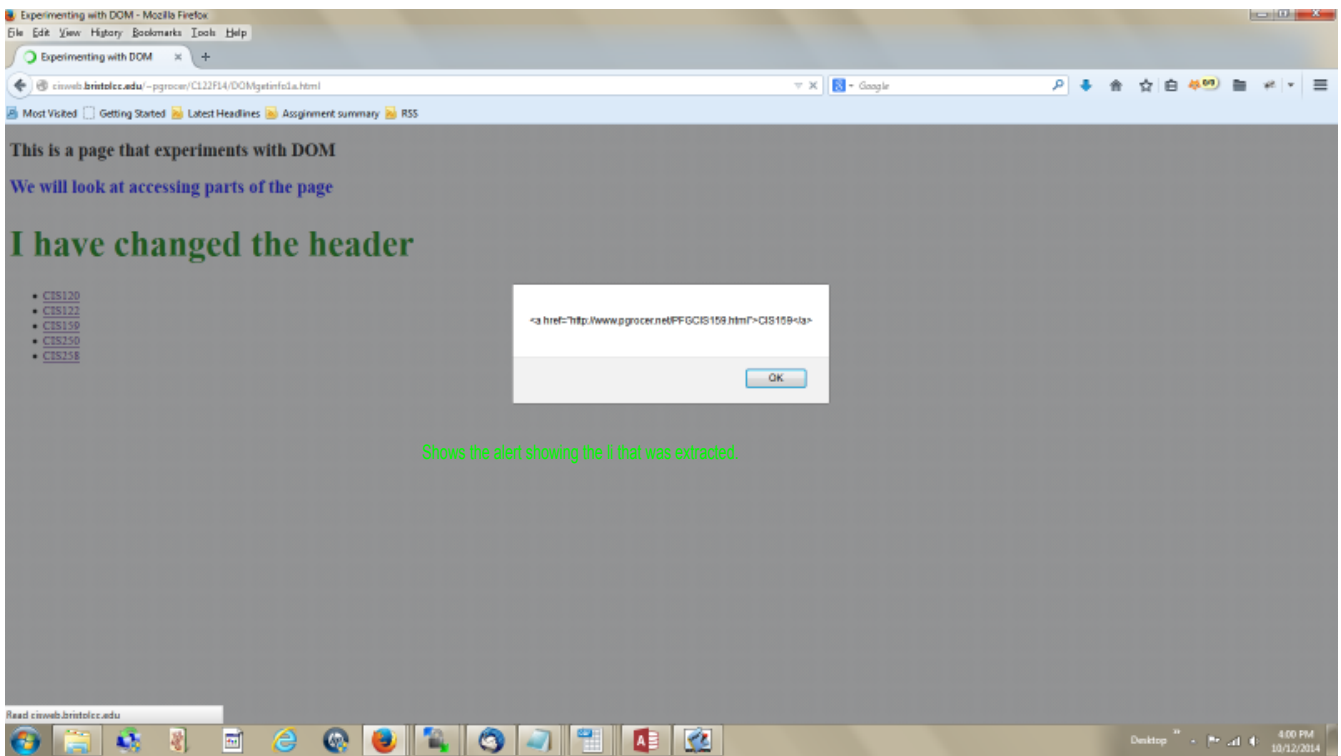
I have set up a <div> with a id of first. I also gave it a class to experiment with color. The div contains no data.

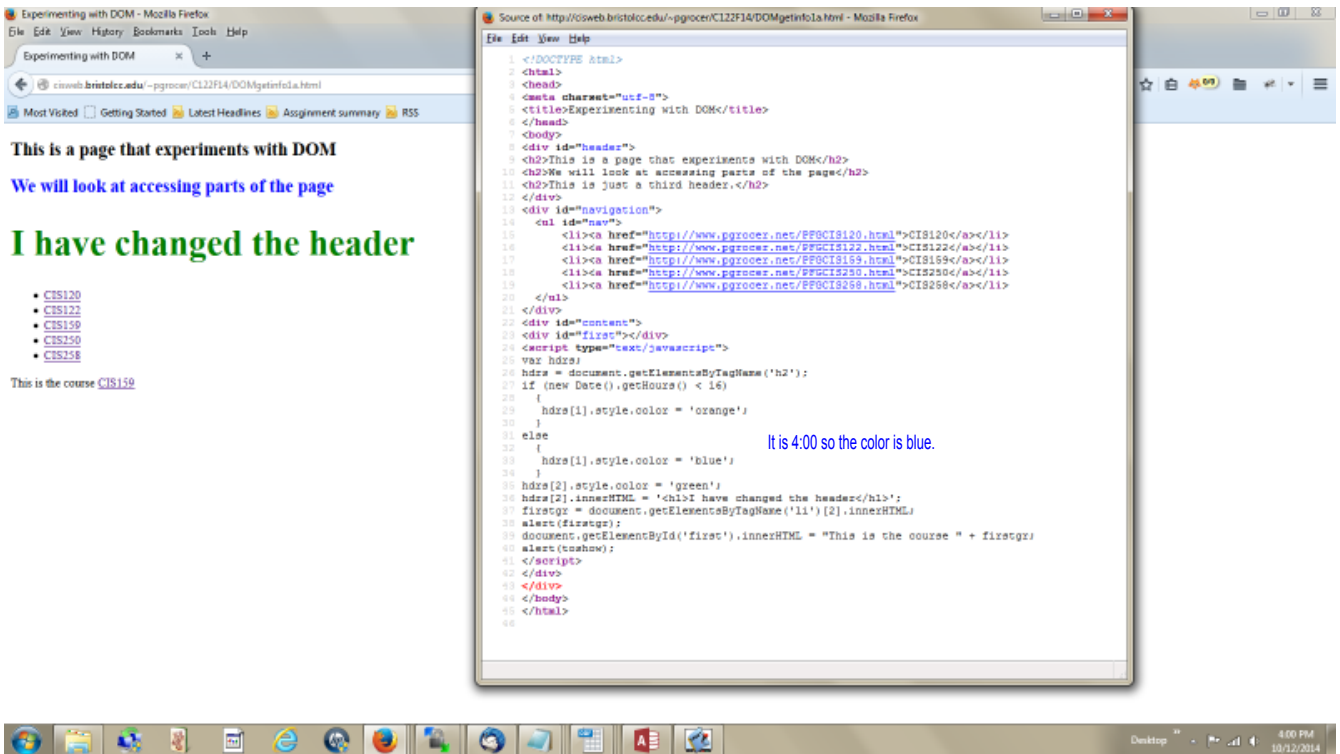
I am giving the with an id of nav a background color of beige.

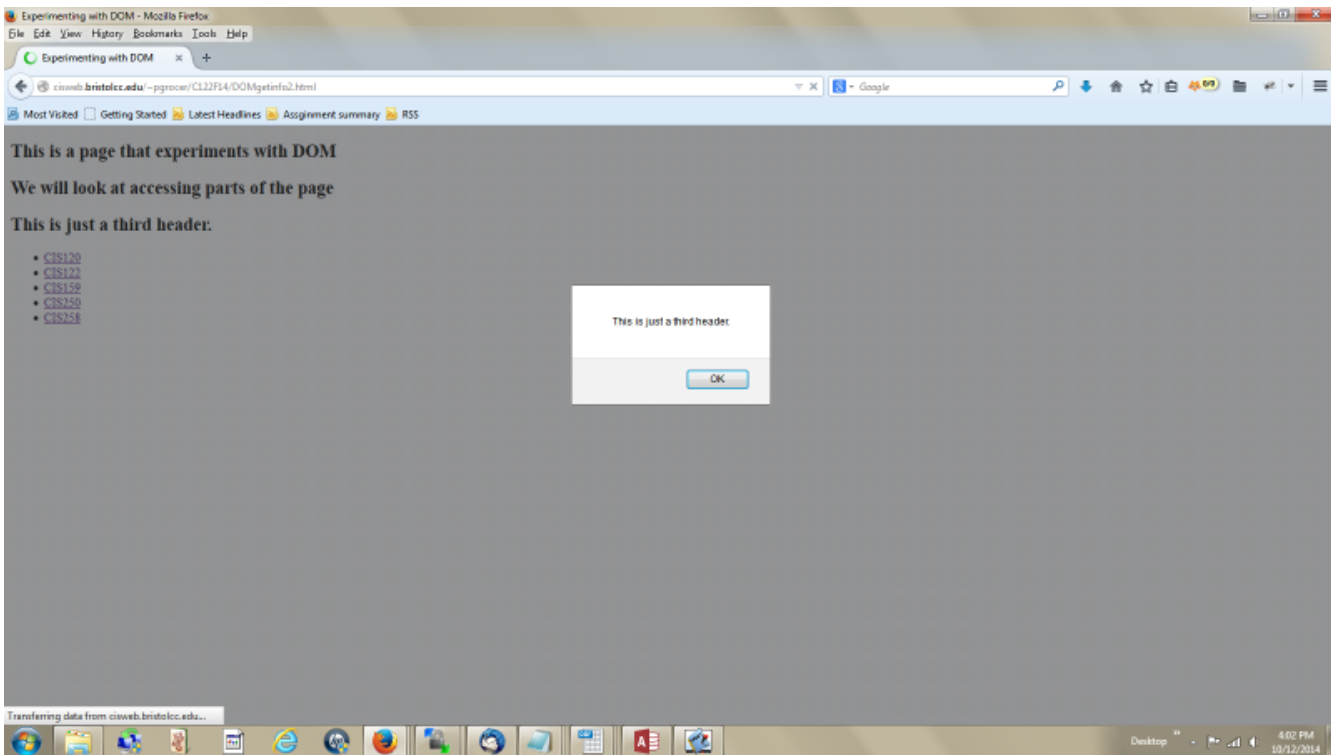


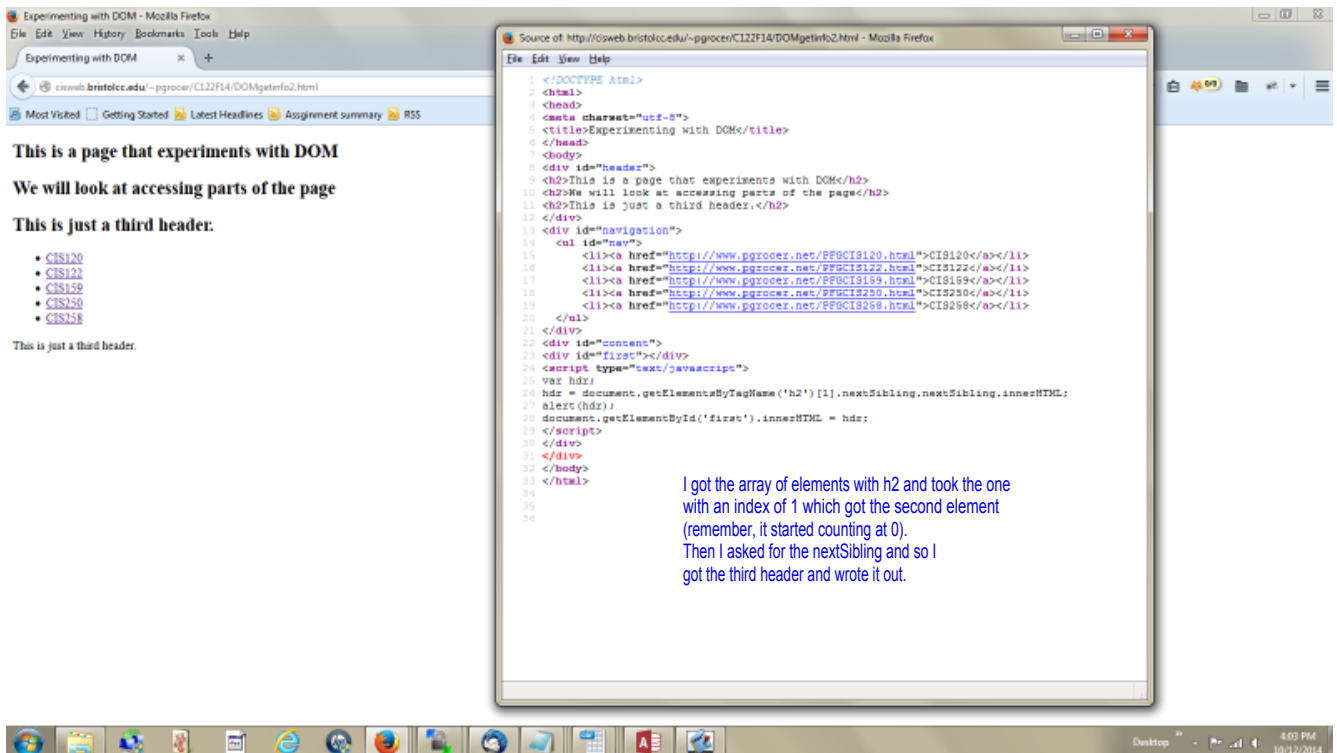












Experimenting with DOM - Mozilla Firefox

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Experimenting with DOM

csweb.bristolcc.edu/~pgrace/C122F14/DOMgetinfo2.html

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This is a page that experiments with DOM

We will look at accessing parts of the page

This is just a third header.

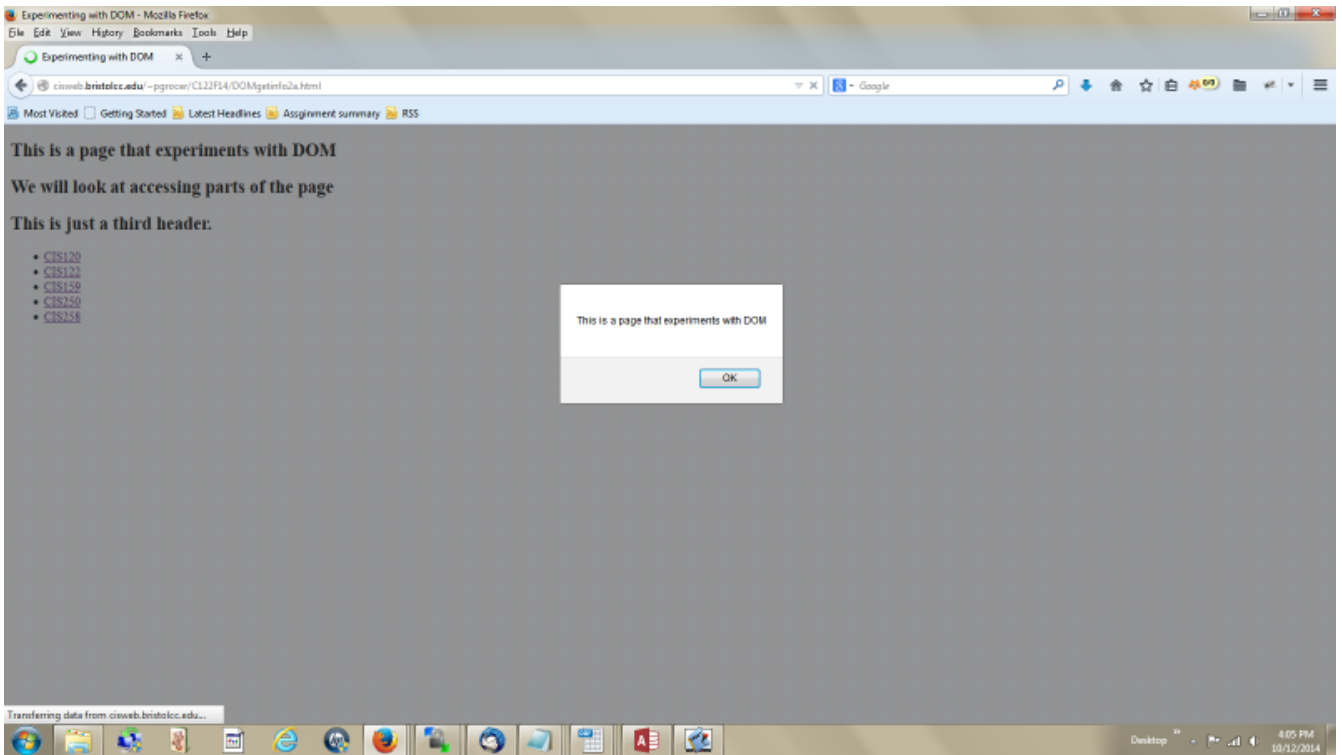
- [CIS120](#)
- [CIS122](#)
- [CIS150](#)
- [CIS250](#)
- [CIS258](#)

This is just a third header.

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Experimenting with DOM</title>
6 </head>
7 <body>
8 <div id="header">
9 <h2>This is a page that experiments with DOM</h2>
10 <h2>We will look at accessing parts of the page</h2>
11 <h2>This is just a third header.</h2>
12 </div>
13 <div id="navigation">
14 <ul id="nav">
15 <li><a href="http://www.pgrace.net/PFGCIS120.html">CIS120</a></li>
16 <li><a href="http://www.pgrace.net/PFGCIS122.html">CIS122</a></li>
17 <li><a href="http://www.pgrace.net/PFGCIS150.html">CIS150</a></li>
18 <li><a href="http://www.pgrace.net/PFGCIS250.html">CIS250</a></li>
19 <li><a href="http://www.pgrace.net/PFGCIS258.html">CIS258</a></li>
20 </ul>
21 </div>
22 <div id="content">
23 <div id="first"></div>
24 <script type="text/javascript">
25 var hdx;
26 hdx = document.getElementsByTagName('h2')[1].nextSibling.nextSibling.innerHTML;
27 alert(hdx);
28 document.getElementById('first').innerHTML = hdx;
29 </script>
30 </div>
31 </div>
32 </body>
33 </html>
```

I got the array of elements with h2 and took the one with an index of 1 which got the second element (remember, it started counting at 0). Then I asked for the nextSibling and so I got the third header and wrote it out.

Desktop 4:03 PM 10/12/2014



The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://cweb.bristolcc.edu/~pgrocer/C122F14/DOMgetinfo2a.html`. The page content includes:

This is a page that experiments with DOM

We will look at accessing parts of the page

This is just a third header.

- [CIS120](#)
- [CIS122](#)
- [CIS159](#)
- [CIS250](#)
- [CIS258](#)

Below the list, it says: "This is a page that experiments with DOM"

The source code window shows the following HTML and JavaScript:

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Experimenting with DOM</title>
6 </head>
7 <body>
8 <div id="header">
9 <h2>This is a page that experiments with DOM</h2>
10 <h2>We will look at accessing parts of the page</h2>
11 <h2>This is just a third header.</h2>
12 </div>
13 <div id="navigation">
14 <ul id="nav">
15 <li><a href="http://www.pgrocer.net/FPBCI8120.html">CIS120</a></li>
16 <li><a href="http://www.pgrocer.net/FPBCI8122.html">CIS122</a></li>
17 <li><a href="http://www.pgrocer.net/FPBCI8159.html">CIS159</a></li>
18 <li><a href="http://www.pgrocer.net/FPBCI8250.html">CIS250</a></li>
19 <li><a href="http://www.pgrocer.net/FPBCI8258.html">CIS258</a></li>
20 </ul>
21 </div>
22 <div id="content">
23 <div id="first"></div>
24 <script type="text/javascript">
25 var h2z;
26 h2z = document.getElementsByTagName('h2')[1].previousSibling.previousSibling.innerHTML;
27 alert(h2z);
28 document.getElementById('first').innerHTML = h2z;
29 </script>
30 </div>
31 </div>
32 </body>
33 </html>
34

```

Below the code, a note reads: "I got the array of elements with h2 and took the one with an index of 1 which got the second element (remember, it started counting at 0). Then I asked for the previousSibling and so I got the first header and wrote it out."

DOM Nodes | JavaScript Tutorial - Mozilla Firefox

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More references in forms... x Dr: getElementByName meth... x Basic DOM Node propertie... x dom white space - Google... x DOM Nodes | JavaScript Tu... x +

javascript:info/tutorial/dom-nodes

dom white space

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But first of all we need to know what DOM looks like and what it contains.

Another document

Let's see the DOM of a more complicated document.

```
01 <!DOCTYPE HTML>
02 <html>
03   <head>
04     <title>The document</title>
05   </head>
06   <body>
07     <div>Data</div>
08     <ul>
09       <li>Warning</li>
10       <li></li>
11     </ul>
12     <div>Top Secret</div>
13   </body>
14 </html>
```

And here is the DOM if we represent it as a tree.

```
graph TD
    HTML[HTML] --> HEAD[HEAD]
    HTML --> BODY[BODY]
    HEAD --> TITLE[TITLE]
    TITLE --> TitleText[The document]
    BODY --> DIV1[DIV]
    DIV1 --> Data[Data]
    BODY --> UL[UL]
    UL --> LI1[LI]
    LI1 --> Warning[Warning]
    UL --> LI2[LI]
    BODY --> DIV2[DIV]
    DIV2 --> TopSecret[Top Secret]
```

Information that will help with the set of example 3 programs. This shows the DOM tree and the elements of it. This is useful for navigation.

Desktop 12:37 PM 10/12/2014

Whitespace nodes

Now let's make the picture closer to reality and introduce whitespace text elements. Whitespace symbols in the HTML are recognized as the text and become text nodes. **These whitespace nodes are not shown in developer tools, but they do exist.**

The following picture shows text nodes containing whitespaces.

This shows the white space that is inserted when you put things on separate lines which gets us a space between tags.

```
graph TD
    HTML[HTML] --> HEAD[HEAD]
    HTML --> WS1[ ]
    HTML --> BODY[BODY]
    HEAD --> TITLE[TITLE]
    TITLE --> TextDoc[The document]
    BODY --> WS2[ ]
    BODY --> DIV1[DIV]
    BODY --> UL[UL]
    BODY --> WS3[ ]
    BODY --> DIV2[DIV]
    DIV1 --> TextDot[Doty]
    UL --> LI1[LI]
    UL --> WS4[ ]
    UL --> LI2[LI]
    DIV2 --> TextSecret[Top Secret]
    LI1 --> TextWarning[Warning]
```

By the way, note that last li does not have a whitespace text tag inside. That's exactly because there is no text at all inside it.

Whitespace nodes are created from spaces between nodes. So they disappear if we eliminate the space between tags.

The example below has no whitespace nodes at all.

```
<!DOCTYPE HTML><html><head><title>Title</title></head><body></body></html>
```

IE<9

Versions of IE lower than 9 differ from other browsers because they do not generate tags from whitespaces.

```
<!DOCTYPE html>
<html>
  <head>
  <body>
    Text - Empty Text Node
    <div id="header">
      Text - Empty Text Node
      <h2>
        Text - This is a page that experiments with DOM
      Text - Empty Text Node
      <h2>
        Text - We will look at accessing parts of the page
      Text - Empty Text Node
      <h2>
        Text - This is just a third header.
      Text - Empty Text Node
    Text - Empty Text Node
    <div id="navigation">
      Text - Empty Text Node
    <div id="content">
      Text - Empty Text Node
```

This shows the white space and the text with the header information.

The screenshot shows a web browser window with the URL `http://cisweb.bristolcc.edu/~pgrocer/C12F14/DOMgetinfo3a.html`. The page content is as follows:

This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

- [CIS120](#)
- [CIS122](#)
- [CIS159](#)
- [CIS250](#)
- [CIS258](#)

This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

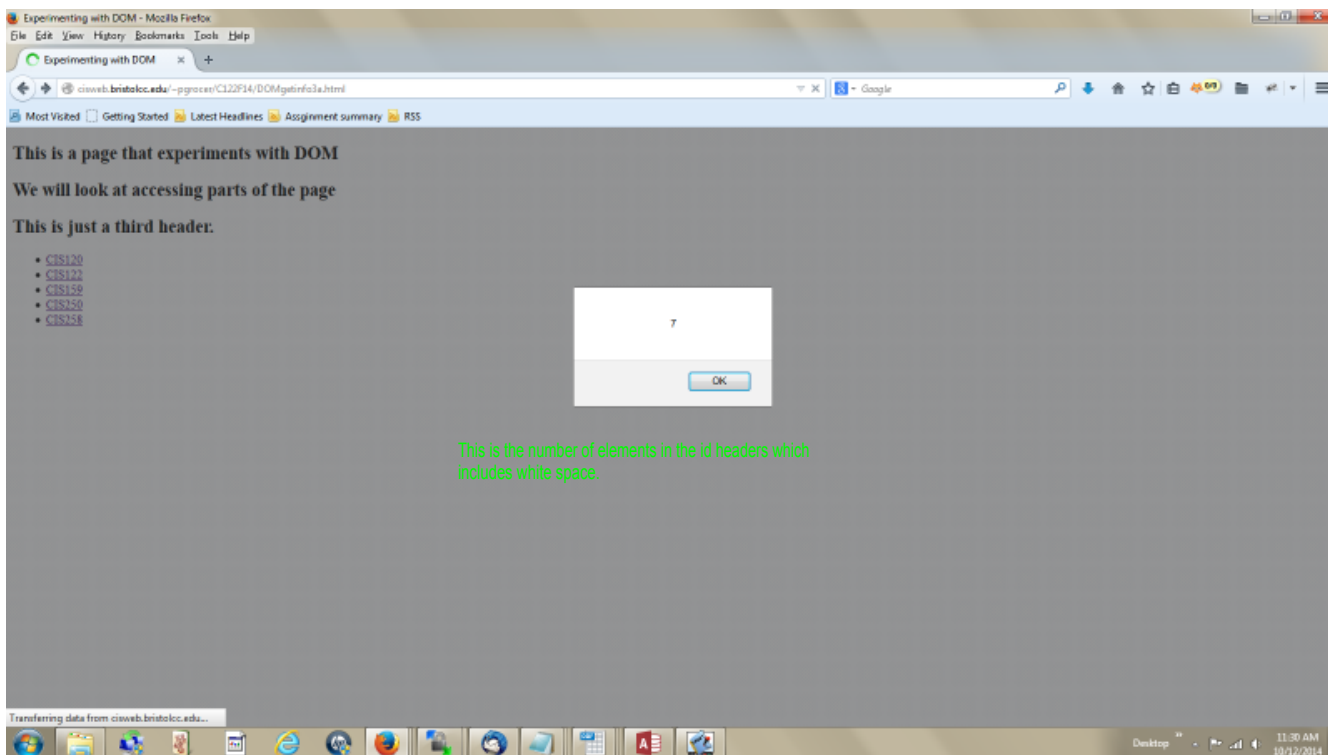
This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

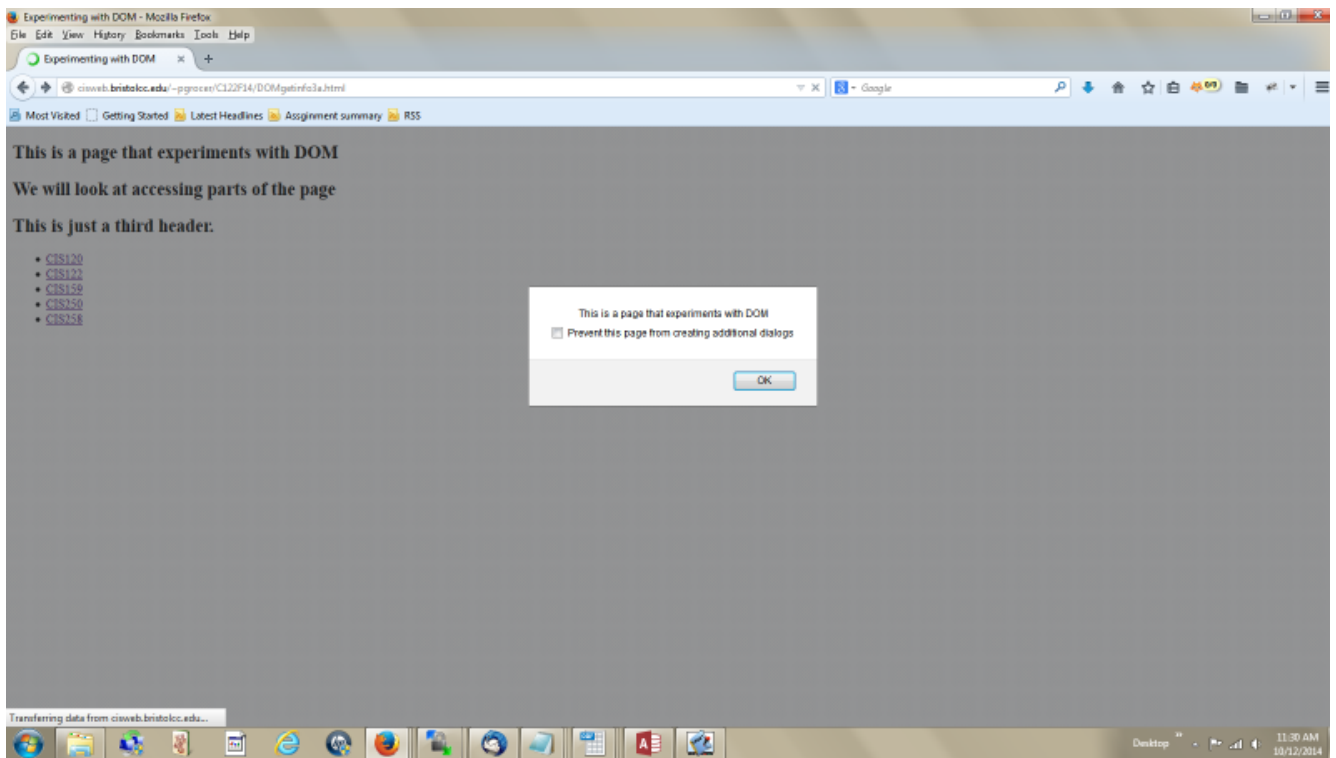
This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

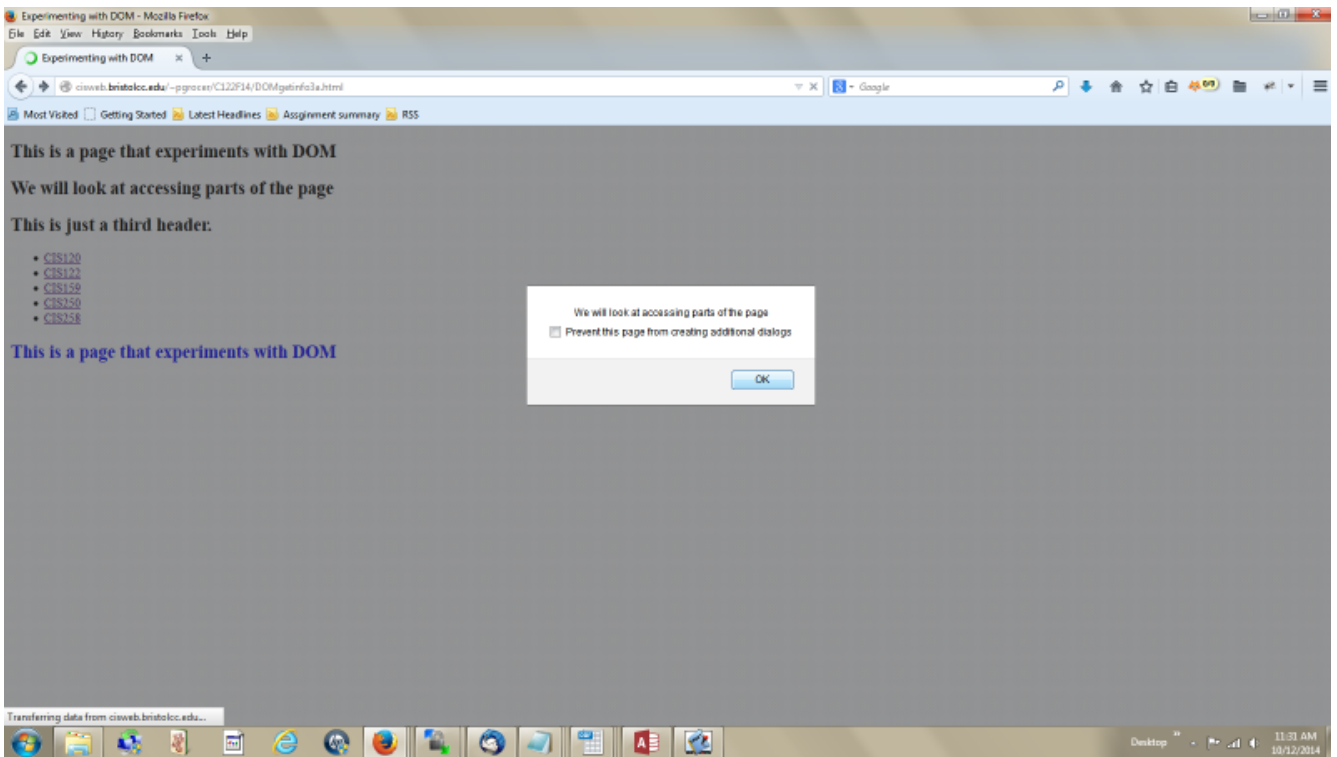
The source code on the right is as follows:

```
1 </DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Experimenting with DOM</title>
6 <style type="text/css">
7 #first
8 {
9   color: blue;
10 }
11 #second
12 {
13   color: green;
14 }
15 #third
16 {
17   color: pink;
18 }
19 </style>
20 </head>
21 <body>
22 <div id="header">
23 <h2>This is a page that experiments with DOM</h2>
24 <h2>We will look at accessing parts of the page</h2>
25 <h2>This is just a third header.</h2>
26 </div>
27 <div id="navigation">
28 <ul id="nav">
29 <li><a href="http://www.pgrocer.net/PFGCIS120.html">CIS120</a></li>
30 <li><a href="http://www.pgrocer.net/PFGCIS122.html">CIS122</a></li>
31 <li><a href="http://www.pgrocer.net/PFGCIS159.html">CIS159</a></li>
32 <li><a href="http://www.pgrocer.net/PFGCIS250.html">CIS250</a></li>
33 <li><a href="http://www.pgrocer.net/PFGCIS258.html">CIS258</a></li>
34 </ul>
35 </div>
36 <div id="content">
37 <div id="first">
38 <h2></h2>
39 <h2></h2>
40 <h2></h2>
41 </div>
42 <div id="second">
43 <h2> </h2>
44 <h2> </h2>
45 <h2> </h2>
46 </div>
47 <div id="third">
48 <h2> </h2>
49 <h2> </h2>
50 <h2> </h2>
51 </div>
52 </body>
53 </html>
```

Note I have three output areas and each has a color in the style. The `<div id="first">` has no space between the `<h2>` elements. The others have a single space meaning that have something in the `<h2>` elements.







The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://cinweb.bristol.ac.uk/~pgrocer/C12F14/DOMgetinfo3a.html`. The page content is repeated five times with different colors: blue, blue, green, green, and pink. Each repetition contains the text: "This is a page that experiments with DOM", "We will look at accessing parts of the page", and "This is just a third header.", followed by a list of links (CIS120, CIS122, CIS150, CIS1520, CIS158) and a blue link: "When we ran this we got the 7 for the length. More explanations in a few slides."

The source code window shows the following HTML and JavaScript:

```
24 <h2>He will look at accessing parts of the page</h2>
25 <h2>This is just a third header.</h2>
26 </div>
27 <div id="navigation">
28 <ul id="nav">
29 <li><a href="http://www.pgrocer.net/PPGC15120.html">CIS120</a></li>
30 <li><a href="http://www.pgrocer.net/PPGC15122.html">CIS122</a></li>
31 <li><a href="http://www.pgrocer.net/PPGC15150.html">CIS150</a></li>
32 <li><a href="http://www.pgrocer.net/PPGC15250.html">CIS250</a></li>
33 <li><a href="http://www.pgrocer.net/PPGC15258.html">CIS258</a></li>
34 </ul>
35 </div>
36 <div id="content">
37 <div id="first">
38 <h2></h2>
39 <h2></h2>
40 <h2></h2>
41 </div>
42 <div id="second">
43 <h2></h2>
44 <h2></h2>
45 <h2></h2>
46 </div>
47 <div id="third">
48 <h2></h2>
49 <h2></h2>
50 <h2></h2>
51 </div>
52 <script type="text/javascript">
53 var hdr;
54 var ct;
55 alert (document.getElementById('header').childNodes.length);
56 for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
57 {
58 alert (document.getElementById('header').childNodes[ct].childNodes[0].nodeValue);
59 document.getElementById('first').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].childNodes[0].nodeValue;
60 }
61 for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
62 {
63 alert (document.getElementById('header').childNodes[ct].firstChild.nodeValue);
64 document.getElementById('second').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].firstChild.nodeValue;
65 }
66 for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
67 {
68 alert (document.getElementById('header').childNodes[ct].firstChild.nodeValue);
69 document.getElementById('third').childNodes[ct].firstChild.nodeValue = document.getElementById('header').childNodes[ct].firstChild.nodeValue;
70 }
71 </script>
72 </div>
73 </body>
74 </html>
```

```

<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8">
<title>Experimenting with DOM</title>
<style type="text/css">
#first
{
  color: blue;
}
#second
{
  color: green;
}
#third
{
  color: pink;
}
</style>
</head>
<body>
<div id="header">
<h2>This is a page that experiments with DOM</h2>
<h2>We will look at accessing parts of the page</h2>
<h2>This is just a third header.</h2>
</div>
<div id="navigation">
  <ul id="nav">
    <li><a href="http://www.pgrocer.net/PFGCIS120.html">CIS120</a></li>
    <li><a href="http://www.pgrocer.net/PFGCIS122.html">CIS122</a></li>
    <li><a href="http://www.pgrocer.net/PFGCIS159.html">CIS159</a></li>
    <li><a href="http://www.pgrocer.net/PFGCIS250.html">CIS250</a></li>
    <li><a href="http://www.pgrocer.net/PFGCIS258.html">CIS258</a></li>
  </ul>
</div>
<div id="content">
<div id="first">
  <h2></h2>
  <h2></h2>
  <h2></h2>
</div>
<div id="second">
  <h2> </h2>
  <h2> </h2>
  <h2> </h2>
</div>
<div id="third">
  <h2> </h2>
  <h2> </h2>
  <h2> </h2>
</div>
<script type="text/javascript">
var hdr;
var ct;
alert (document.getElementById('header').childNodes.length);
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert (document.getElementById('header').childNodes[ct].childNodes[0].nodeValue)
  document.getElementById('first').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].childNodes[0].nodeValue
}
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert (document.getElementById('header').childNodes[ct].firstChild.nodeValue)
  document.getElementById('second').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].firstChild.nodeValue
}
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert (document.getElementById('header').childNodes[ct].firstChild.nodeValue)
  document.getElementById('third').childNodes[ct].firstChild.nodeValue = document.getElementById('header').childNodes[ct].firstChild.nodeValue
}
</script>
</div>
</body>
</html>

```

```

<div id="first">
  <h2></h2>
  <h2></h2>
  <h2></h2>
</div>
<div id="second">
  <h2> </h2>
  <h2> </h2>
  <h2> </h2>
</div>
<div id="third">
  <h2> </h2>
  <h2> </h2>
  <h2> </h2>
</div>
<script type="text/javascript">
var hdr;
var ct;
alert(document.getElementById('header').childNodes.length);
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert(document.getElementById('header').childNodes[ct].childNodes[0].nodeValue);
  document.getElementById('first').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].childNodes;
}
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert(document.getElementById('header').childNodes[ct].firstChild.nodeValue);
  document.getElementById('second').childNodes[ct].innerHTML = document.getElementById('header').childNodes;
}
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert(document.getElementById('header').childNodes[ct].firstChild.nodeValue);
  document.getElementById('third').childNodes[ct].firstChild.nodeValue = document.getElementById('header').childNodes[ct].firstChild.nodeValue;
}
</script>

```

The first alert gets me the number of childNodes in header. Header has 3 <h2> headers under it and it also has white space so it has: white space, text, white space, text, white space, text, white space so it returns 7.

So, this means that when I went to start the loop, I realized I only wanted the text so instead of starting at 0, I started at 1 and instead of adding 1 to each pass, I added 2. The loop continued while ct was less than the length of 7. So I got the 1, 3, 5 and when it hit 7 I ended. Note that because of the white space, the text is in locations 1, 3, 5

I will explain the alert and the line that displays on the next slide.

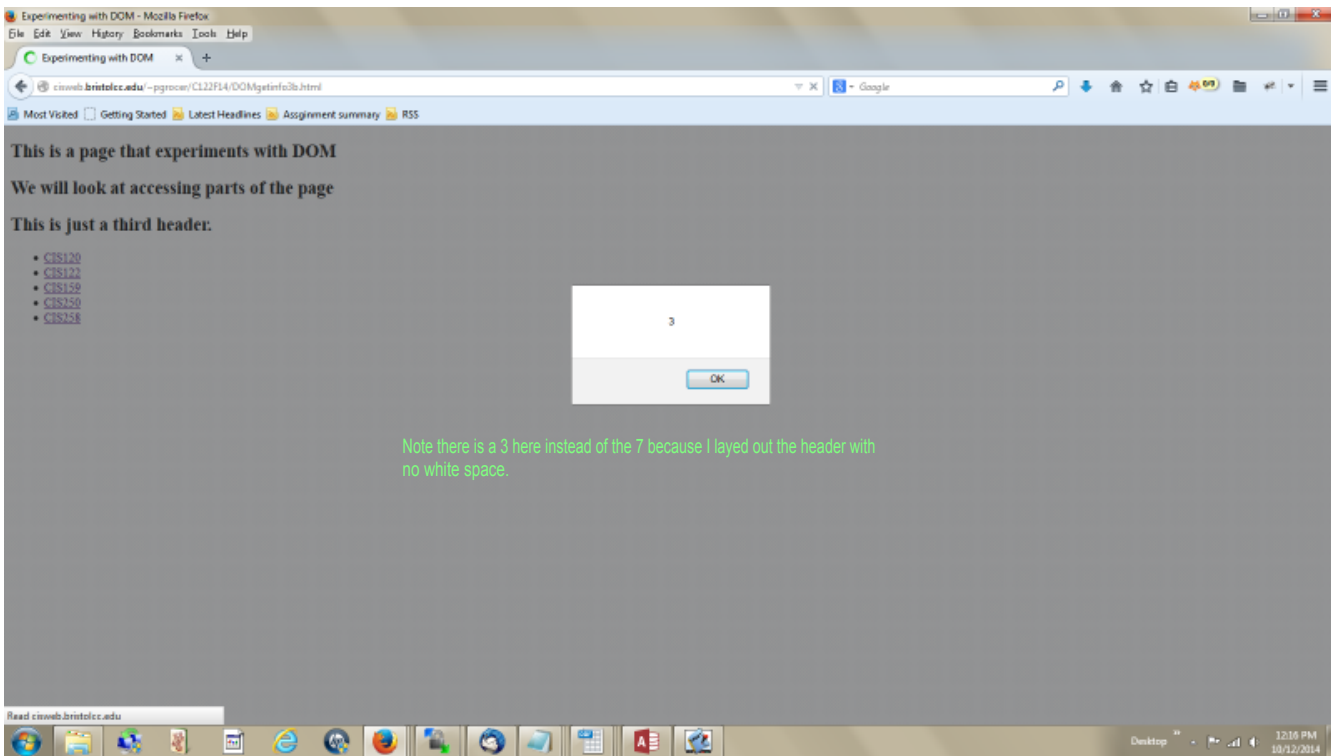
```

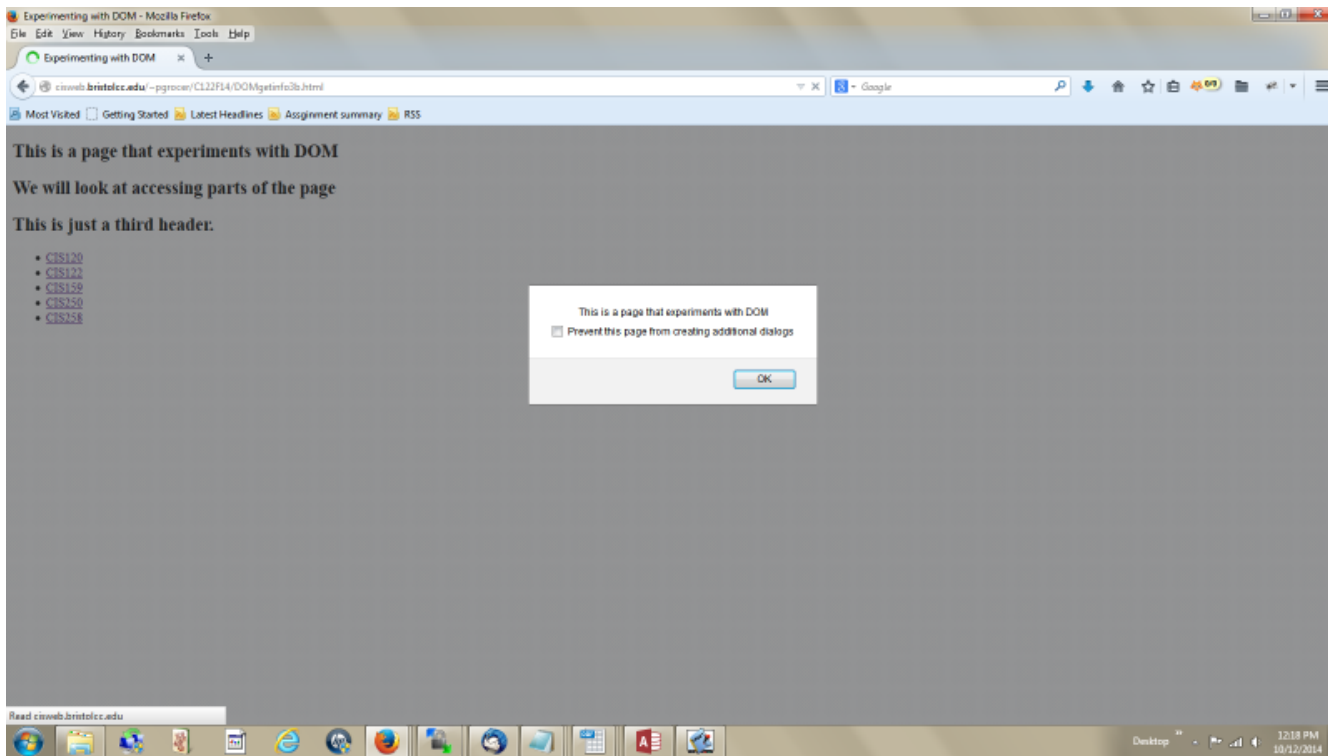
<div id="first">
  <h2></h2>
  <h2></h2>
  <h2></h2>
</div>
<div id="second">
  <h2> </h2>
  <h2> </h2>
  <h2> </h2>
</div>
<div id="third">
  <h2> </h2>
  <h2> </h2>
  <h2> </h2>
</div>
<script type="text/javascript">
var hdr;
var ct;
alert(document.getElementById('header').childNodes.length);
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert(document.getElementById('header').childNodes[ct].childNodes[0].nodeValue);
  document.getElementById('first').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].childNodes;
[0].nodeValue
}
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert(document.getElementById('header').childNodes[ct].firstChild.nodeValue);
  document.getElementById('second').childNodes[ct].innerHTML = document.getElementById('header').childNodes;
[ct].firstChild.nodeValue
}
for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2)
{
  alert(document.getElementById('header').childNodes[ct].firstChild.nodeValue);
  document.getElementById('third').childNodes[ct].firstChild.nodeValue = document.getElementById('header').childNodes[ct].firstChild.nodeValue;
}
</script>

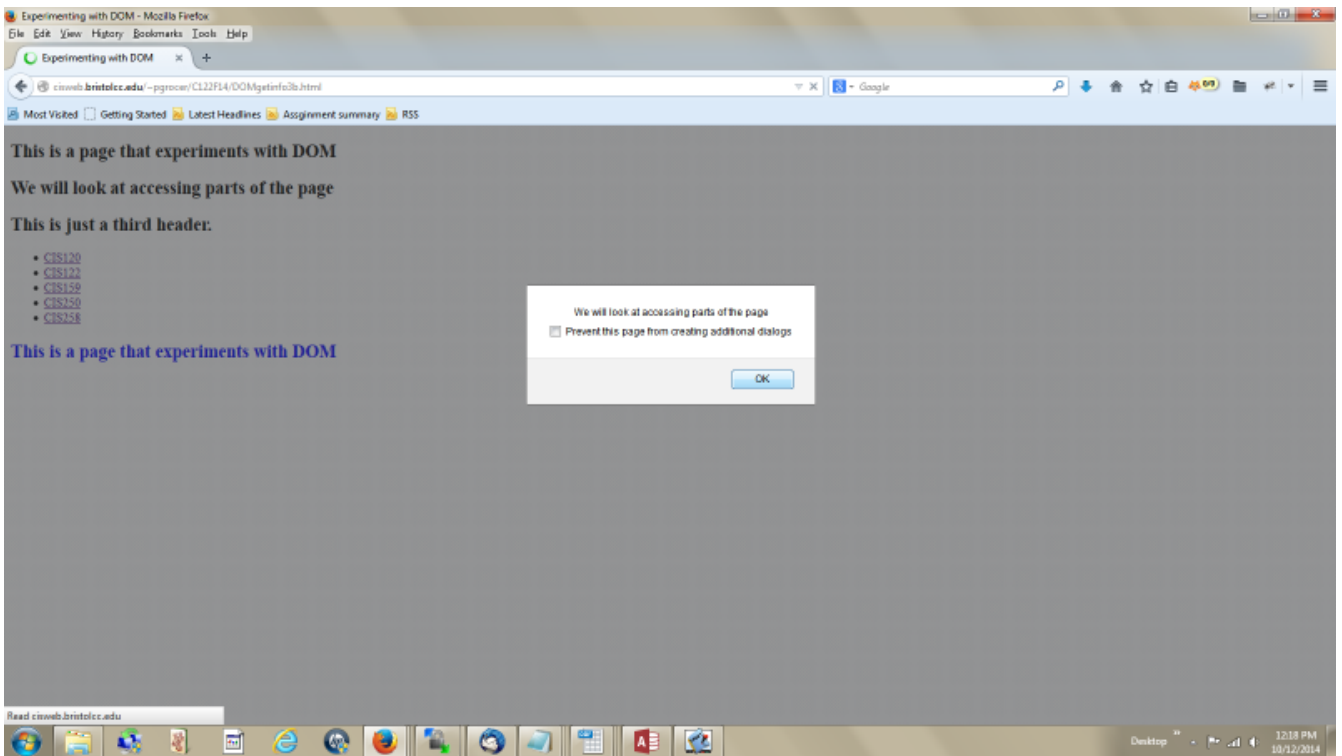
```

I am taking the collection of childNodes of the div id=header element and the children of that element is a collection of text nodes and header elements. To get to the header elements you offset by 2. The header elements have text content so they have a text childNode so I can access that text childNode in two ways. One by getting the collection of the headers childNodes (in this case there will be only one element in the collection or by using the firstChild method.

To put the information onto the page I used two approaches: innerHTML and firstChild.nodeValue. You can use the firstChild.nodeValue if there is already an existing child text node (note that in first there is no existing and in second and third there is an existing which is a space). If there is not an existing child text node then you have to use the innerHTML method which will either replace an existing an innerHTML value or create an innerHTML. innerHTML is everything between the opening and closing tag of the element.







The screenshot shows a browser window with the URL `http://cisweb.bristolcc.edu/~pgrocer/C122F14/DOMgetinfo3.html`. The page content is as follows:

This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

- [CIS120](#)
- [CIS122](#)
- [CIS159](#)
- [CIS250](#)
- [CIS258](#)

This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

This is a page that experiments with DOM
We will look at accessing parts of the page
This is just a third header.

The source code in the background is as follows:

```

1 </DOCTYPE html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Experimenting with DOM</title>
6 <style type="text/css">
7 #first
8 {
9   color: blue;
10 }
11 #second
12 {
13   color: green;
14 }
15 #third
16 {
17   color: pink;
18 }
19 </style>
20 </head>
21 <body>
22 <div id="header"><h2>This is a page that experiments with DOM</h2><h2>We will look at accessing parts of the page</h2><h2>This is just a t
23 <div id="navigation">
24 <ul id="nav">
25 <li><a href="http://www.pgrocer.net/PPGC1210.html">CIS120</a></li>
26 <li><a href="http://www.pgrocer.net/PPGC1212.html">CIS122</a></li>
27 <li><a href="http://www.pgrocer.net/PPGC12159.html">CIS159</a></li>
28 <li><a href="http://www.pgrocer.net/PPGC12250.html">CIS250</a></li>
29 <li><a href="http://www.pgrocer.net/PPGC12258.html">CIS258</a></li>
30 </ul>
31 </div>
32 <div id="content">
33 <div id="first"><h2></h2><h2></h2><h2></h2></div>
34 <div id="second"><h2></h2><h2></h2><h2></h2></div>
35 <div id="third"><h2></h2><h2></h2><h2></h2></div>
36 <script type="text/javascript">
37 var hdr;
38 var ct;
39 alert(document.getElementById('header').childNodes.length);
40 for (ct=0; ct < document.getElementById('header').childNodes.length; ct=ct+1)
41 {
42   alert(document.getElementById('header').childNodes[ct].childNodes[0].nodeValue);
43   document.getElementById('first').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].childNodes[0].nodeValue;
44 }
45 for (ct=0; ct < document.getElementById('header').childNodes.length; ct=ct+1)
46 {
47   alert(document.getElementById('header').childNodes[ct].firstChild.nodeValue);
48   document.getElementById('second').childNodes[ct].innerHTML = document.getElementById('header').childNodes[ct].firstChild.nodeValue;
49 }
50

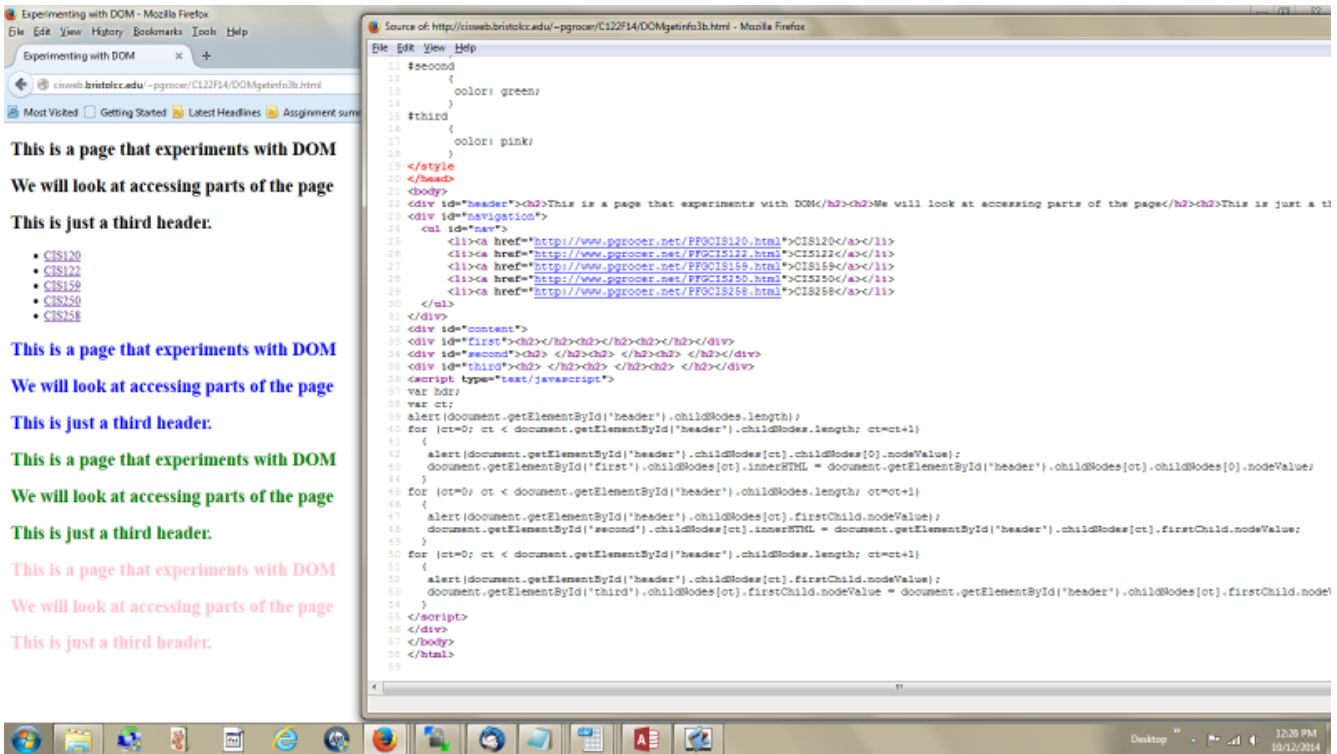
```

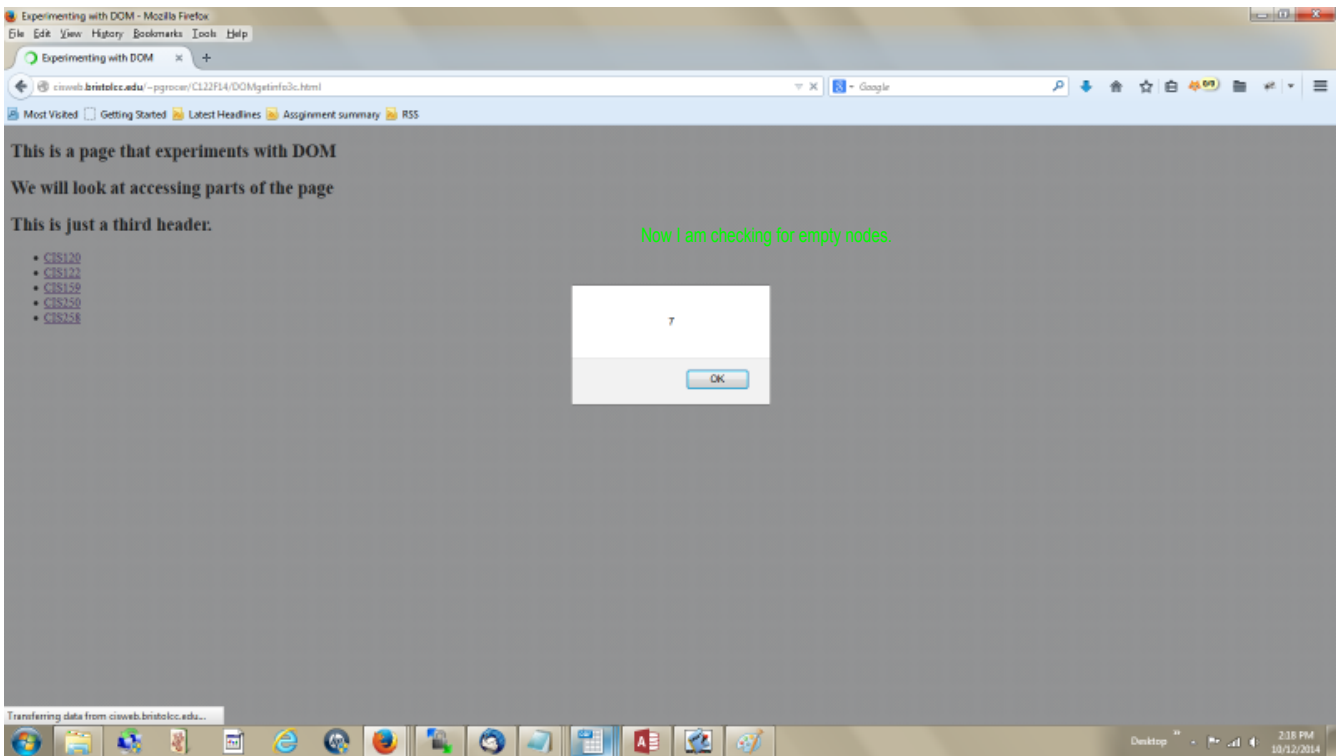
Annotations on the source code:

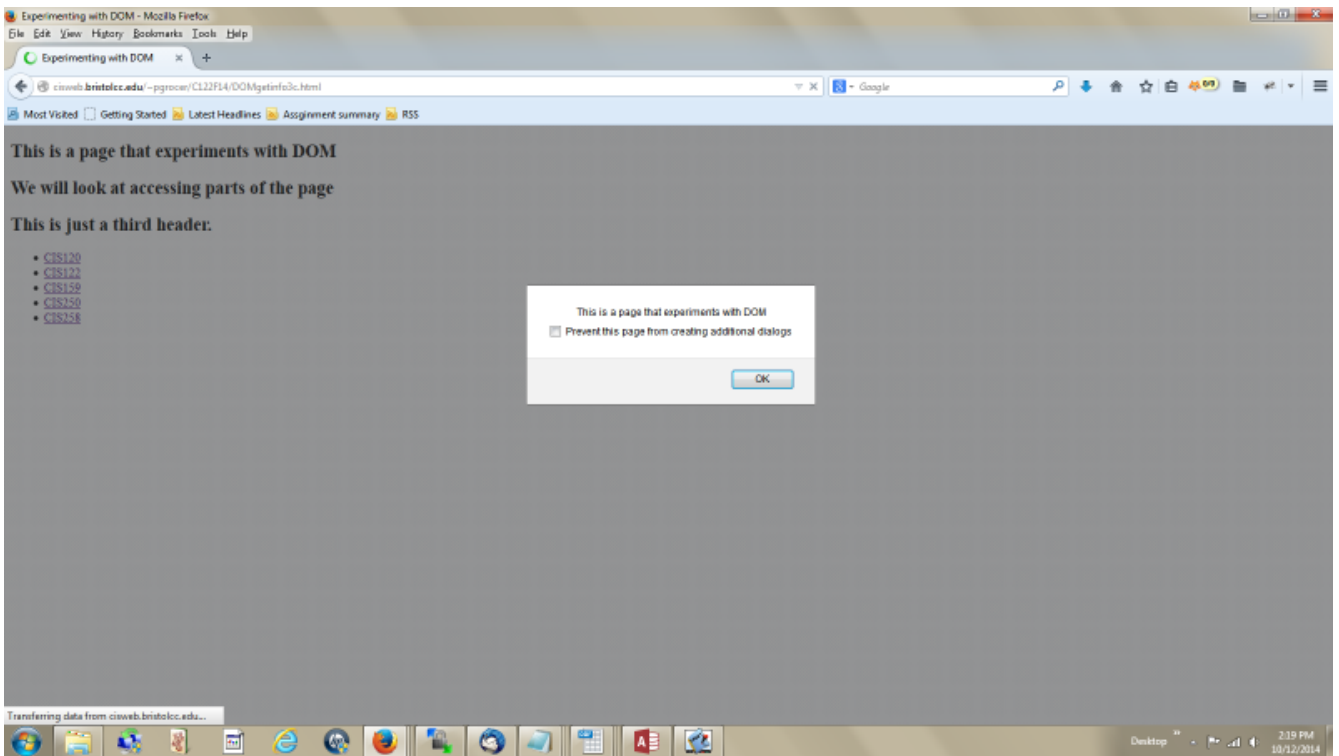
- The `<div id="header">` now has everything on one line including the `</div>` so there is no white space between elements. This meant I got a length of 3.
- Note I did the same for the receiving areas. I did leave the space inside the `h2` so I could use the `childNodes[nodeValue]`.
- Because there is no white space I start at 0 and increment it by 1.
- The rest is on the next page.

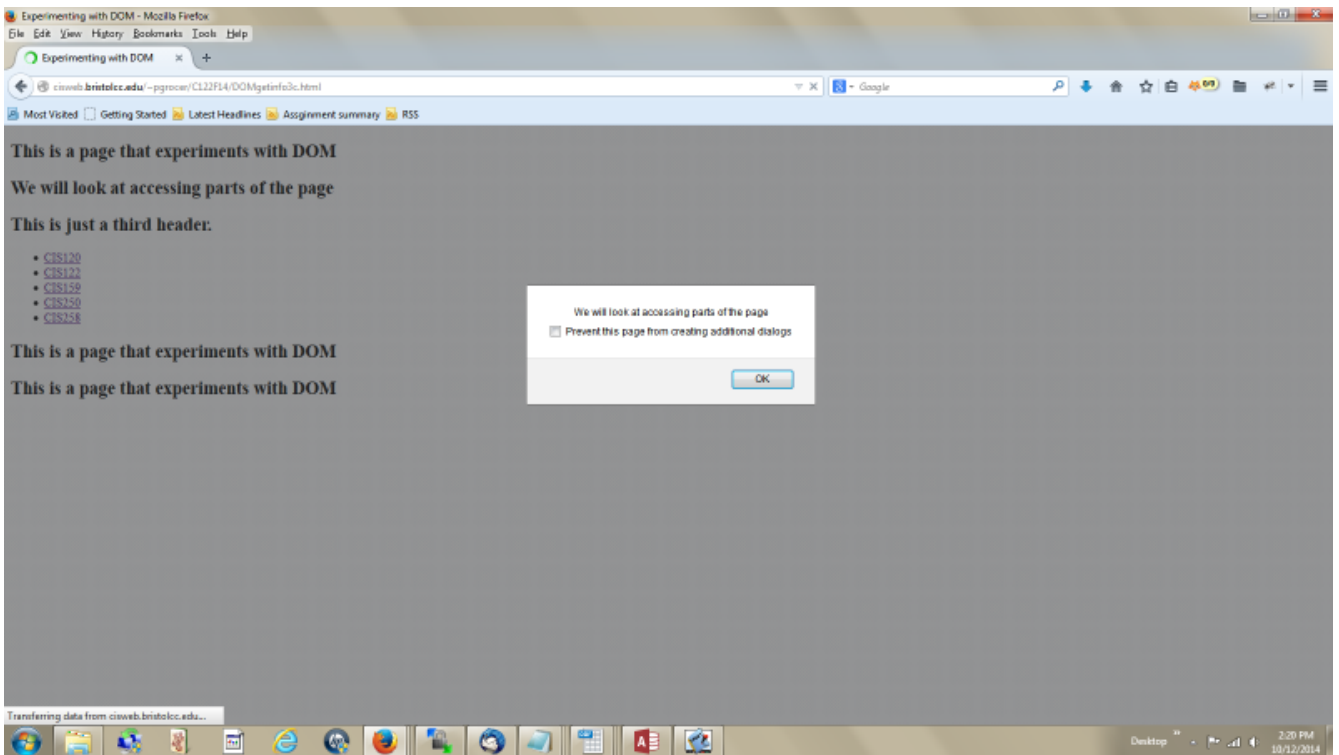
```
<!DOCTYPE html>
<html>
  <head>
  <body>
    Text - Empty Text Node
    <div id="header">
      <h2>
        Text - This is a page that experiments with DOM
      <h2>
        Text - We will look at accessing parts of the page
      <h2>
        Text - This is just a third header.
    Text - Empty Text Node
    <div id="navigation">
    Text - Empty Text Node
    <div id="content">
    Text - Empty Text Node
```

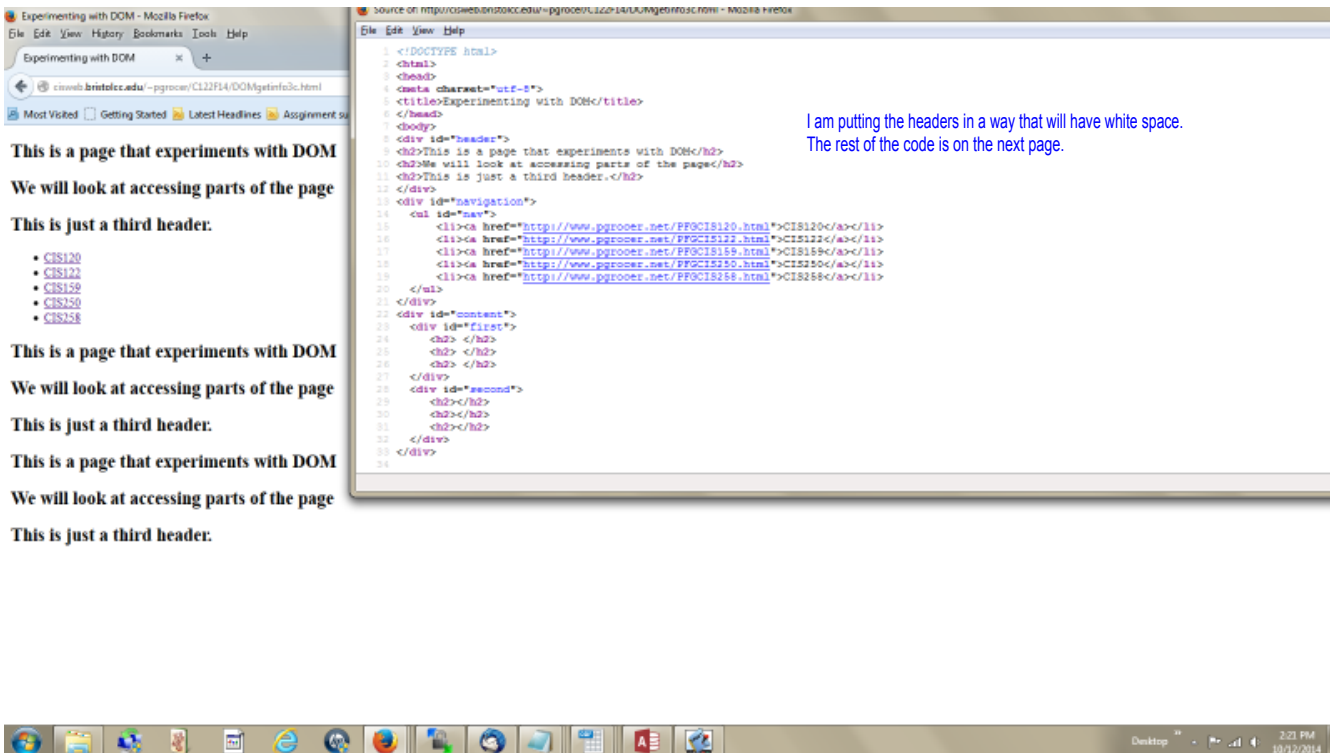
When I layed them all out on one line with no white space between this is what I get.











The screenshot shows a web browser window on the left and its source code editor on the right. The browser displays a page with the following content:

Experimenting with DOM - Mozilla Firefox
 This is a page that experiments with DOM
 We will look at accessing parts of the page
 This is just a third header.
 • CIS120
 • CIS122
 • CIS159
 • CIS250
 • CIS258
 This is a page that experiments with DOM
 We will look at accessing parts of the page
 This is just a third header.
 This is a page that experiments with DOM
 We will look at accessing parts of the page
 This is just a third header.

The source code editor shows the following code:

```

<body>
  <div id="header">
    <h2>This is a page that experiments with DOM</h2>
    <h2>We will look at accessing parts of the page</h2>
    <h2>This is just a third header.</h2>
  </div>
  <div id="navigation">
    <ul id="nav">
      <li><a href="http://www.pogroex.net/FP9CIS120.html">CIS120</a></li>
      <li><a href="http://www.pogroex.net/FP9CIS122.html">CIS122</a></li>
      <li><a href="http://www.pogroex.net/FP9CIS159.html">CIS159</a></li>
      <li><a href="http://www.pogroex.net/FP9CIS250.html">CIS250</a></li>
      <li><a href="http://www.pogroex.net/FP9CIS258.html">CIS258</a></li>
    </ul>
  </div>
  <div id="content">
    <div id="first">
      <h2></h2>
      <h2></h2>
      <h2></h2>
    </div>
    <div id="second">
      <h2></h2>
      <h2></h2>
      <h2></h2>
    </div>
  </div>
  <script type="text/javascript">
    function addText (elem, newText) {
      if (elem.hasChildNodes()) {
        elem.firstChild.nodeValue = newText;
      } else {
        elem.innerHTML = newText;
      }
    }
    var ct;
    var firstNodes = document.getElementById('first').childNodes;
    var secNodes = document.getElementById('second').childNodes;
    alert(document.getElementById('header').childNodes.length);
    for (ct=1; ct < document.getElementById('header').childNodes.length; ct=ct+2) {
      var hdrText = (document.getElementById('header').childNodes[ct].firstChild.nodeValue);
      addText(firstNodes[ct], hdrText);
      addText(secNodes[ct], hdrText);
    }
  </script>
</body>
</html>
  
```

Annotations in the image:

- "See next slide." points to the navigation links in the source code.
- "The function asks if the elem which contains firstNodes[ct] has child nodes. If it does then I take the newText (which received hdrText) and place it as the nodeValue in elem.firstChild else I use .innerHTML to place newText in elem. Note I laid out the curly braces the way a lot of developers do with the opening at the end of the line. On the next slide I went back to my way." points to the `addText` function.
- "In this example first has the space in the <h2> headers and second does not." points to the `firstNodes` and `secNodes` variables.
- "The var hdrText contains the message stored in the <div> with id = 'header'. You can see which one is being processed in the alert." points to the `hdrText` variable.
- "The length is 7." points to the `childNodes.length` property.
- "Now I call the addText function using firstNodes which will put the information into the <div id = 'first'. I send the firstNodes [ct] and the hdrText. It checks to see if elem (which was sent as firstNodes[ct] has childNodes and displays the text depending on the result. Then I do the same sending secondNodes[ct]." points to the `for` loop.

