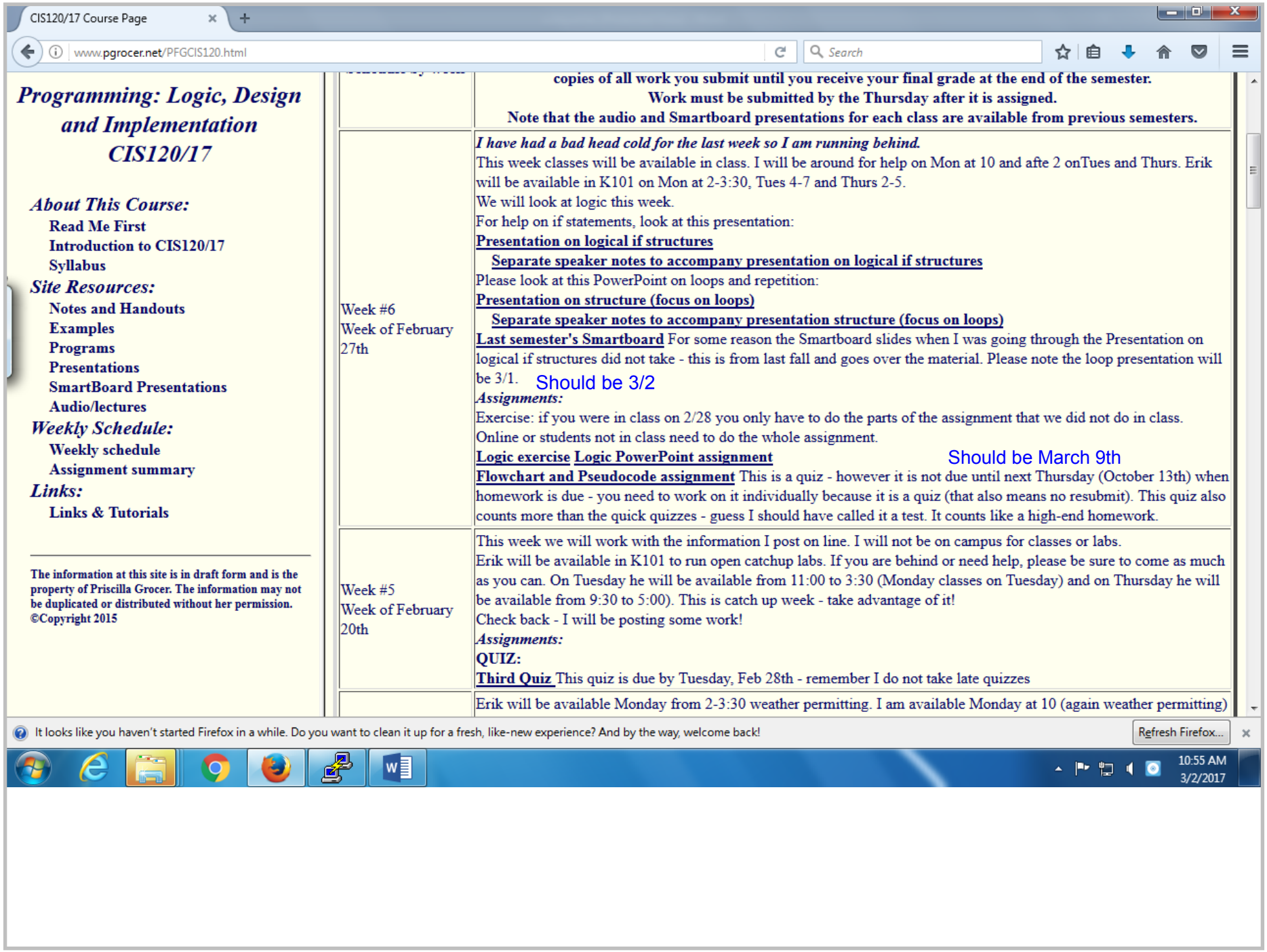
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Programming: Logic, Design and Implementation
CIS120/17
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copies of all work you submit until you receive your final grade at the end of the semester.
Work must be submitted by the Thursday after it is assigned.
Note that the audio and Smartboard presentations for each class are available from previous semesters.
Week #6
Week of February 27th
I have had a bad head cold for the last week so I am running behind.
This week classes will be available in class. I will be around for help on Mon at 10 and afte 2 onTues and Thurs. Erik will be available in K101 on Mon at 2-3:30, Tues 4-7 and Thurs 2-5.
We will look at logic this week.
For help on if statements, look at this presentation:
Presentation on logical if structures
Separate speaker notes to accompany presentation on logical if structures
Please look at this PowerPoint on loops and repetition:
Presentation on structure (focus on loops)
Separate speaker notes to accompany presentation structure (focus on loops)
Last semester's Smartboard For some reason the Smartboard slides when I was going through the Presentation on logical if structures did not take - this is from last fall and goes over the material. Please note the loop presentation will be 3/1.
Should be 3/2
Assignments:
Exercise: if you were in class on 2/28 you only have to do the parts of the assignment that we did not do in class. Online or students not in class need to do the whole assignment.
Logic exercise Logic PowerPoint assignment
Should be March 9th
Flowchart and Pseudocode assignment This is a quiz - however it is not due until next Thursday (October 13th) when homework is due - you need to work on it individually because it is a quiz (that also means no resubmit). This quiz also counts more than the quick quizzes - guess I should have called it a test. It counts like a high-end homework.
Week #5
Week of February 20th
This week we will work with the information I post on line. I will not be on campus for classes or labs.
Erik will be available in K101 to run open catchup labs. If you are behind or need help, please be sure to come as much as you can. On Tuesday he will be available from 11:00 to 3:30 (Monday classes on Tuesday) and on Thursday he will be available from 9:30 to 5:00). This is catch up week - take advantage of it!
Check back - I will be posting some work!
Assignments:
QUIZ:
Third Quiz This quiz is due by Tuesday, Feb 28th - remember I do not take late quizzes
Erik will be available Monday from 2-3:30 weather permitting. I am available Monday at 10 (again weather permitting)
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!
Refresh Firefox...
10:55 AM
3/2/2017

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1 Logic Structure - focus on looping

Please use speaker notes for additional information!

2

3

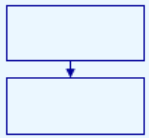
4

5

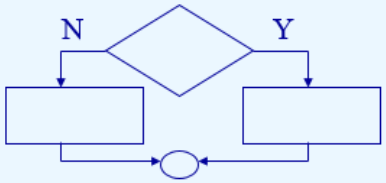
6

Programming logic involves three structures:

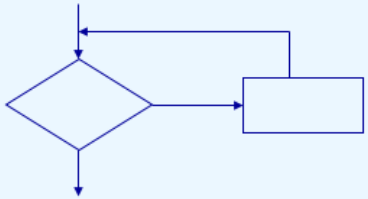
sequence structure



selection structure (conditions)



loop structure (iteration)

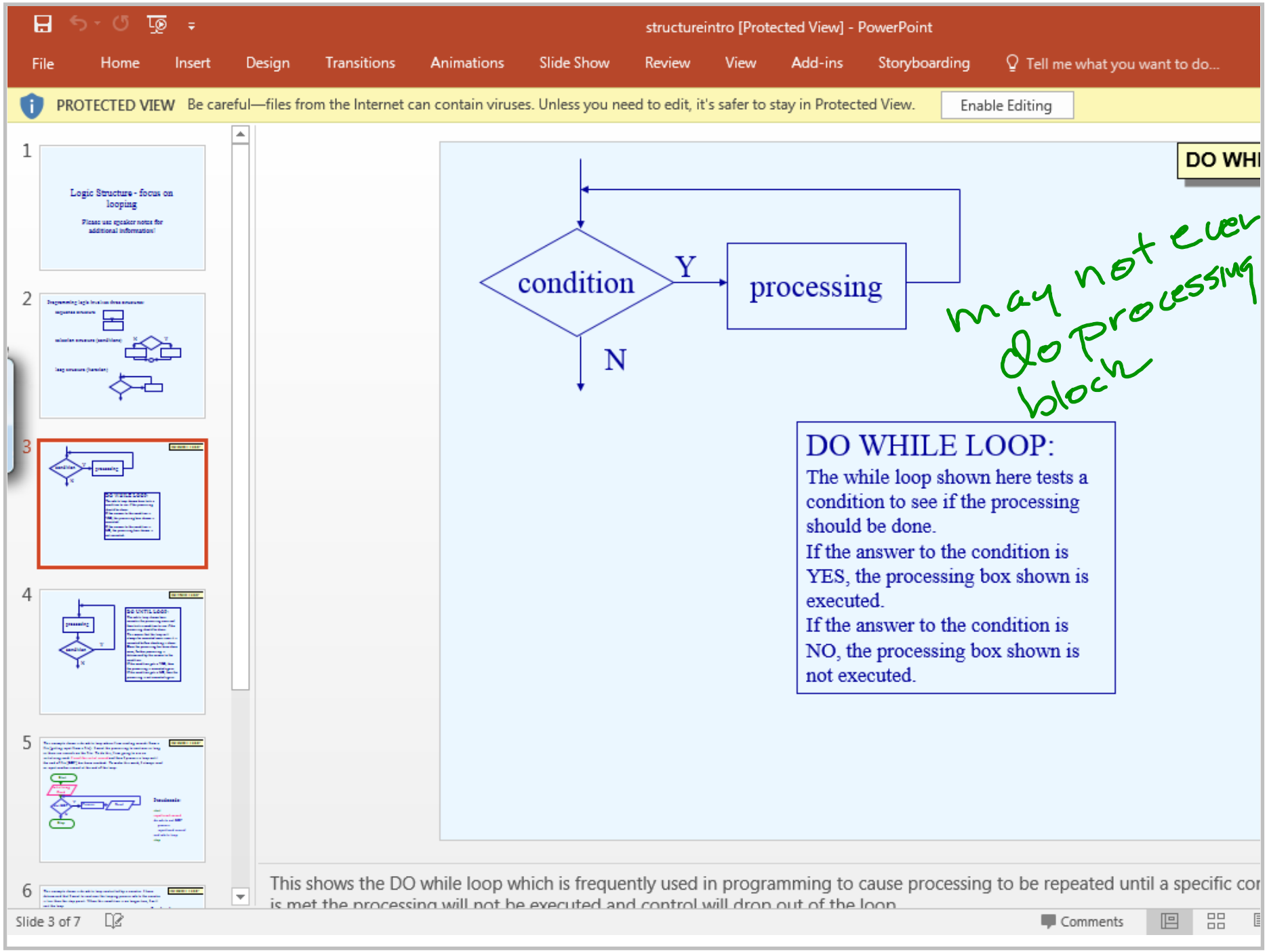


The three structures are all that is logically needed to write a procedural or structured program. All programming commands can be incorporated into these three basic structures

Slide 2 of 7 Comments 80%

11:01 AM 3/2/2017

Title: Mar 2-11:01 AM (2 of 31)



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1 Logic Structure - focus on looping

Please use speaker notes for additional information!

2

3

4 [No Title]

5

6

DO UNT

always Process at least Once

processing

condition

Y

N

DO UNTIL LOOP:

The while loop shown here executes the processing once and then tests a condition to see if the processing should be done.
This means that the loop will always be executed once since it is executed before checking is done.
Once the processing has been done once, further processing is determined by the answer to the condition.
If the condition gets a YES, then the processing is executed again.
If the condition gets a NO, then the processing is not executed again.

In this structure, the processing is done once and then the condition is checked to see if it should be done again. In this struc

done at least once since the check is after the completion of the processing

Slide 4 of 7 Comments

Title: Mar 2-11:04 AM (4 of 31)

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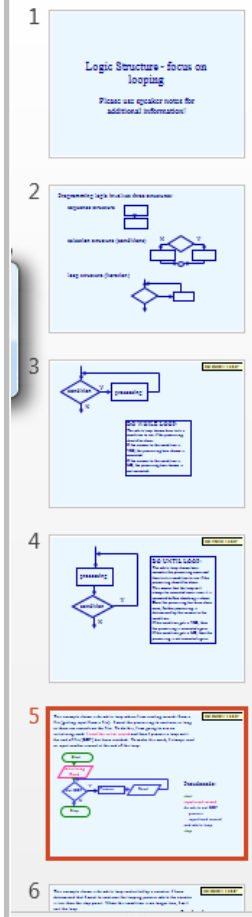
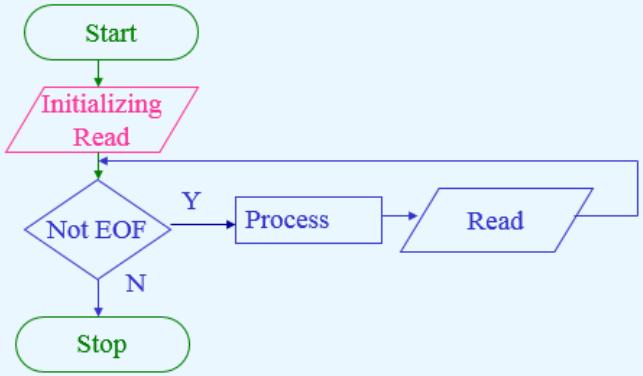


DO WHILE LOOP

This example shows a do while loop where I am reading records from a file (getting input from a file). I want the processing to continue as long as there are records on the file. To do this, I am going to use an initializing read. I read the initial record and then I process a loop until the end of file (EOF) has been reached. To make this work, I always read or input another record at the end of the loop.



Pseudocode:

```
start
input/read record
do while not EOF
   process
   input/read record
end while loop
stop
```

Note that I use the term initializing read, priming read is another term that can be used.
When you are inputting a record you can use the word read, the word input, the word get or any word that implies retrieving a record from the file. In these

Slide 5 of 7 Comments 80%

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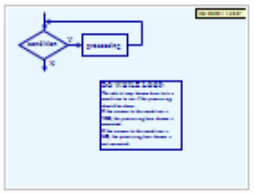

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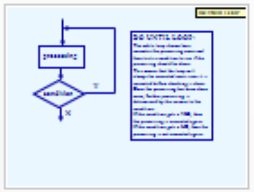

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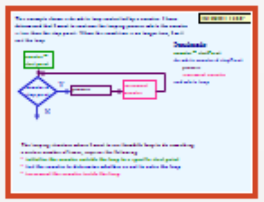


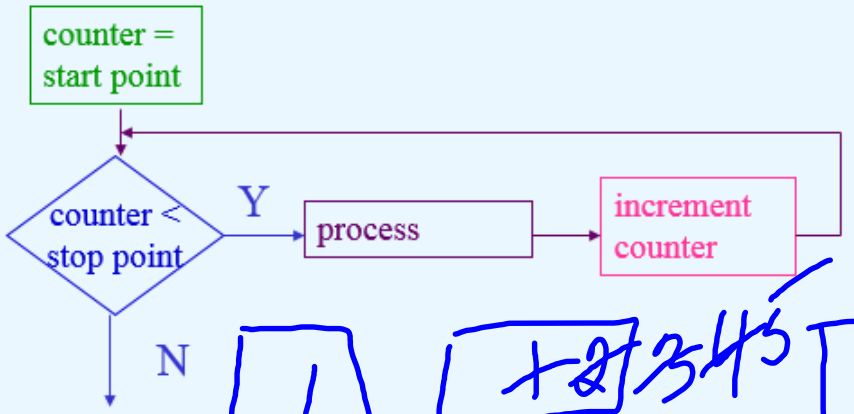
7

This example shows a do while loop controlled by a counter. I have determined that I want to continue the looping process while the counter is less than the stop point. When this condition is no longer true, I will exit the loop

DO WHI

Pseudocode:

counter = startPoint
do while counter < s
    process
    increment counte
end while loop



1 Startpoint

1 2 3 4 5 counter

5 StopPoint

The looping structure where I want to use the **while loop** to do something a certain number of times, requires the following:

- **initialize the counter outside the loop to a specific start point**
- **test the counter to determine whether or not to enter the loop**
- **increment the counter inside the loop**

In this slide, I am showing the specifics of the do while structure. I am using a counter to determine how many times I want to start point outside the loop. I then test the counter against the stop point to determine if I should process. If I process, I incre

Slide 6 of 7 Comments

Title: Mar 2-11:11 AM (6 of 31)

Loop control

1. Set control (prior to entering)
2. check control
3. change control (in loop)

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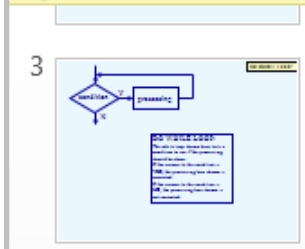
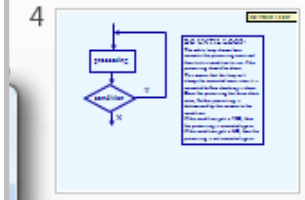
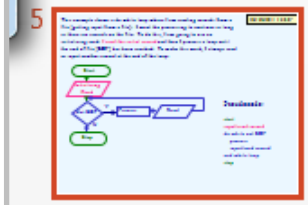
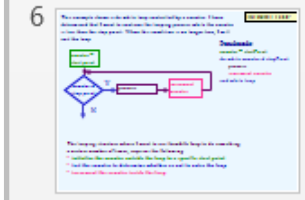


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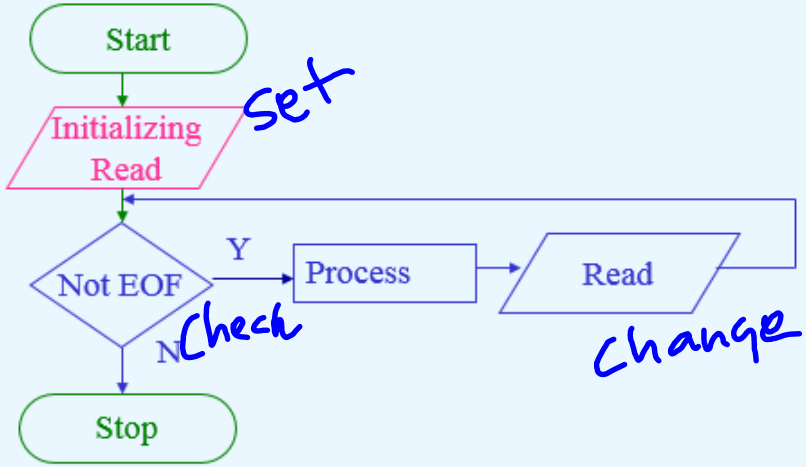
DO WHI



Pseudocode:

```
start
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   input/read recor
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Slide 5 of 7 Comments

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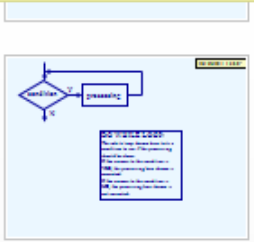
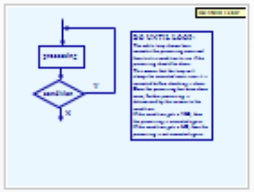
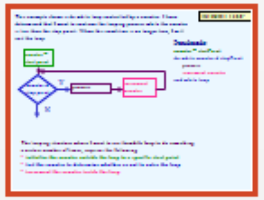
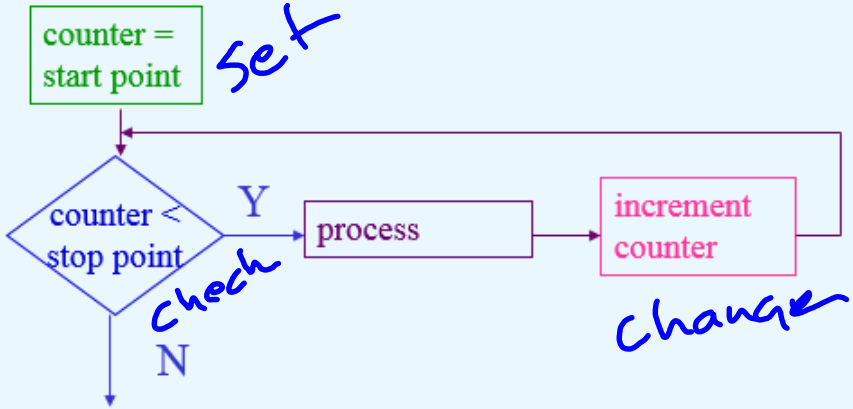






This example shows a do while loop controlled by a counter. I have determined that I want to continue the looping process while the counter is less than the stop point. When this condition is no longer true, I will exit the loop

DO WHI



Pseudocode:

```
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    increment counte
end while loop
```

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Slide 6 of 7 Comments

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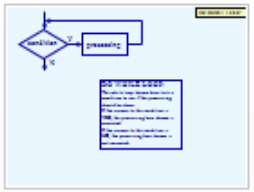

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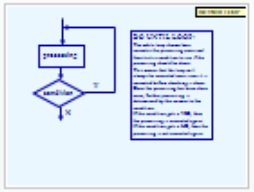

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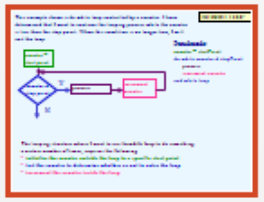

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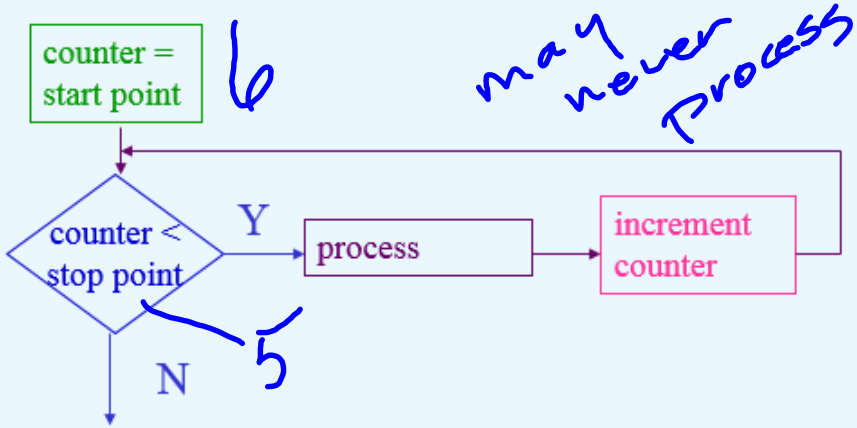
This example shows a do while loop controlled by a counter. I have determined that I want to continue the looping process while the counter is less than the stop point. When this condition is no longer true, I will exit the loop

DO WHI



Pseudocode:

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do while counter < s
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    increment counte
end while loop
```

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In this slide, I am showing the specifics of the do while structure. I am using a counter to determine how many times I want to start point outside the loop. I then test the counter against the stop point to determine if I should process. If I process, I incre

Slide 6 of 7 Comments

Title: Mar 2-11:16 AM (10 of 31)

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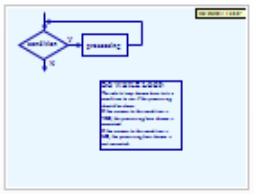

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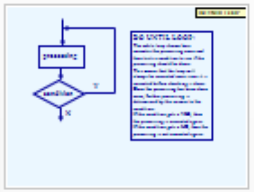

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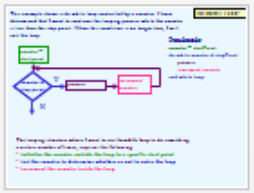

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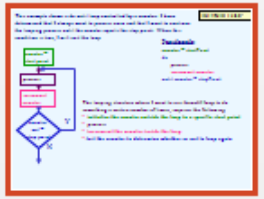
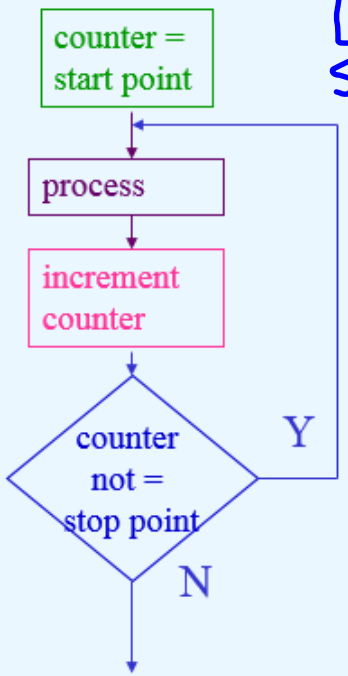


This example shows a do until loop controlled by a counter. I have determined that I always want to process once and that I want to continue the looping process until the counter equals the stop point. When this condition is true, I will exit the loop

DO UNTI



Always process at least once

1 Startpoint

2 3 4 5 Counter

5 Stop point

Pseudocode:

```
counter = startPoint
do
    process
    increment counter
until counter = stopPoint
```

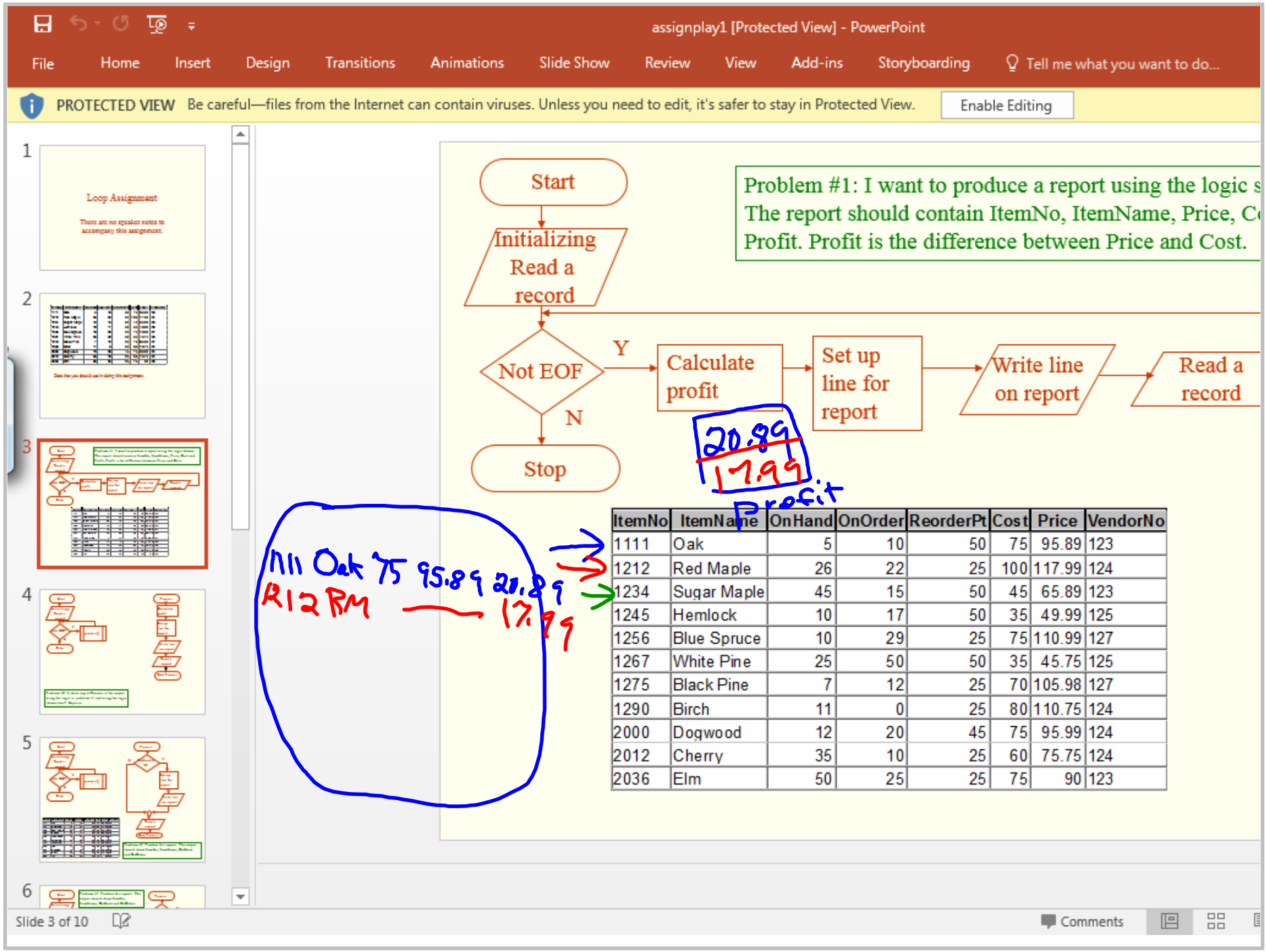
The looping structure where I want to use the **until loop** to something a certain number of times, requires the followin

- **initialize the counter outside the loop to a specific sta**
- **process**
- **increment the counter inside the loop**
- **test the counter to determine whether or not to loop a**

In the do until loop, I will always process at least once. I think it is clearer when writing the pseudocode, to show the until con rather then at the top

Slide 7 of 7 Comments

Title: Mar 2-11:18 AM (11 of 31)



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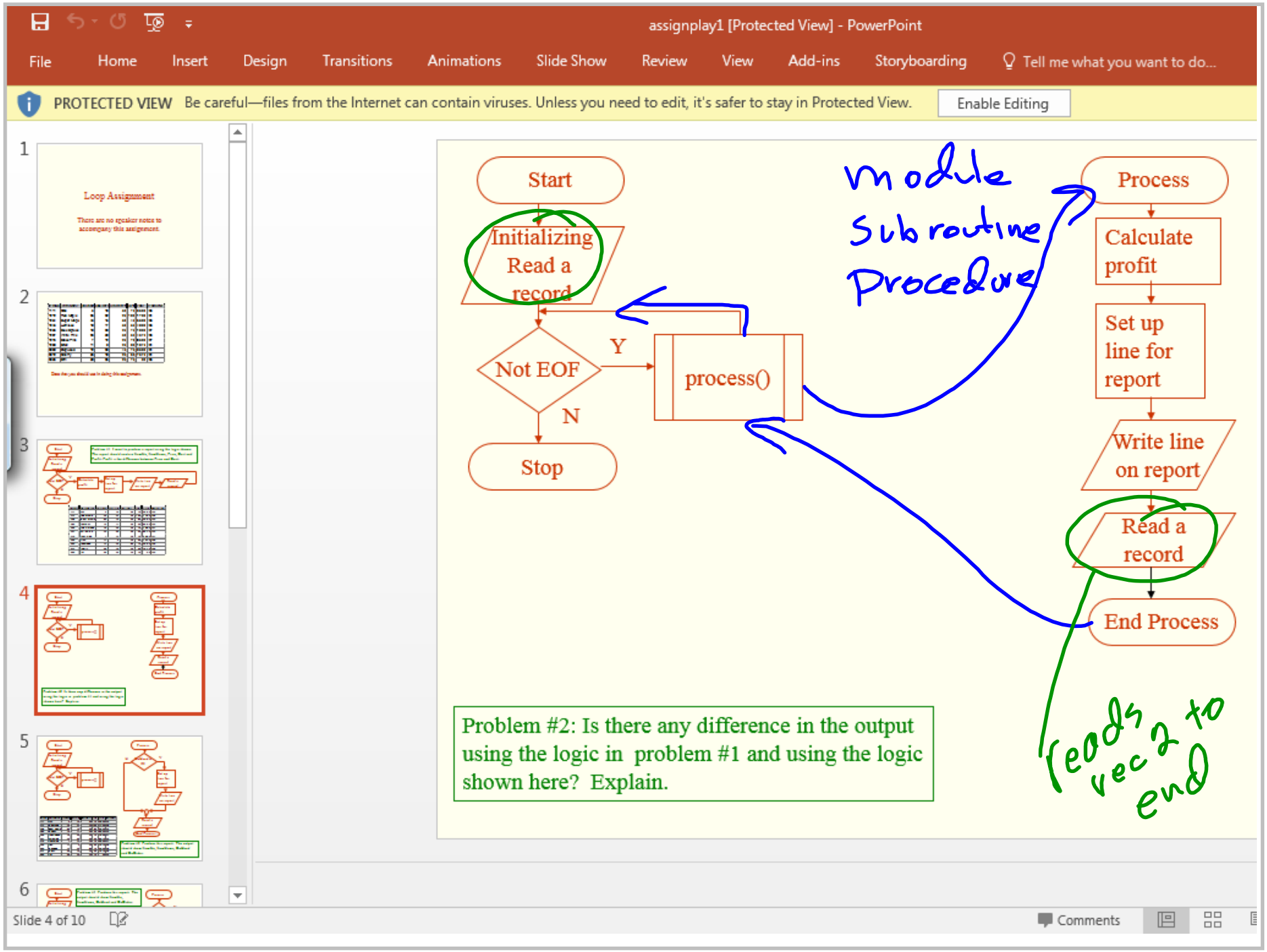

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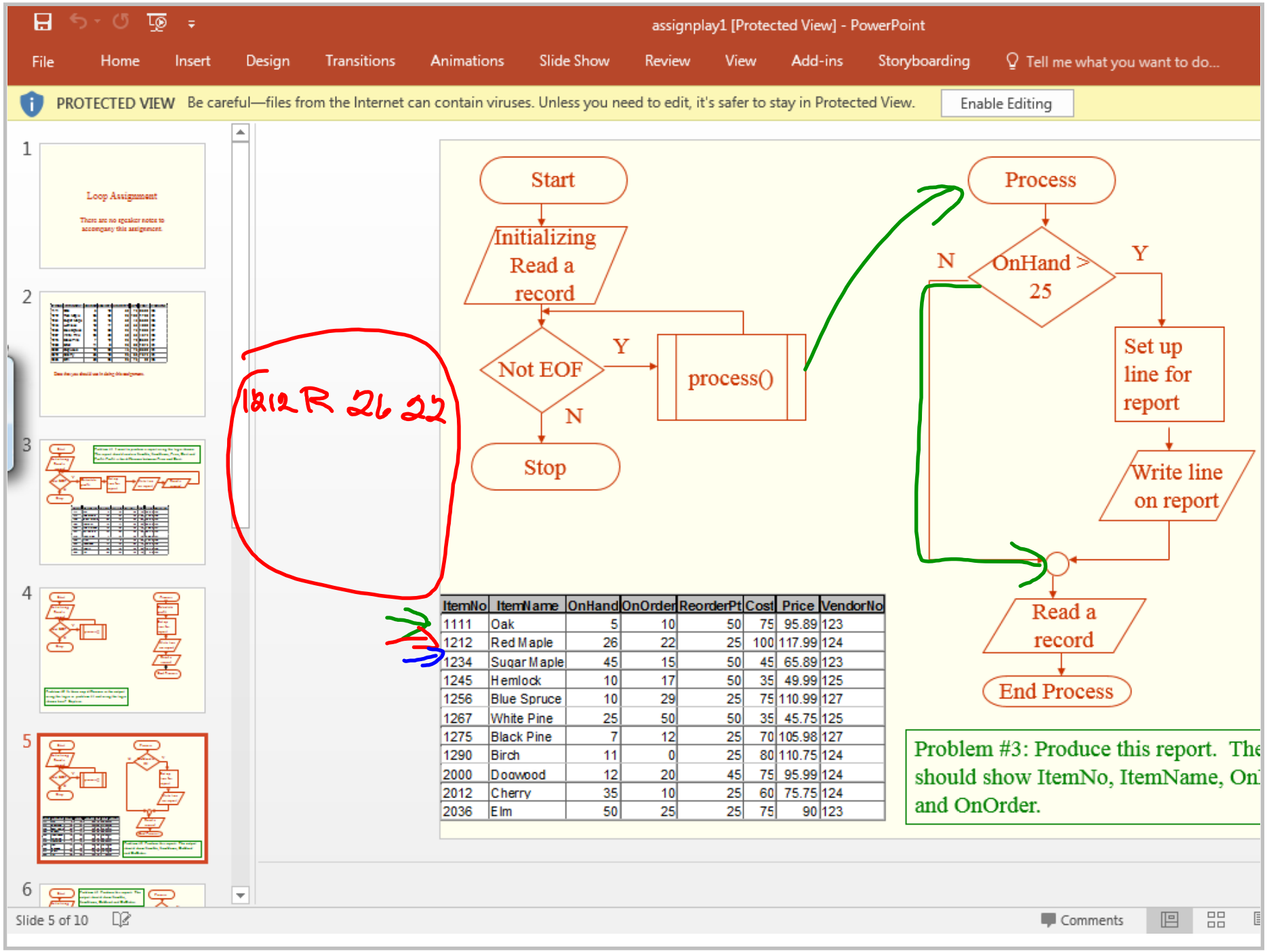

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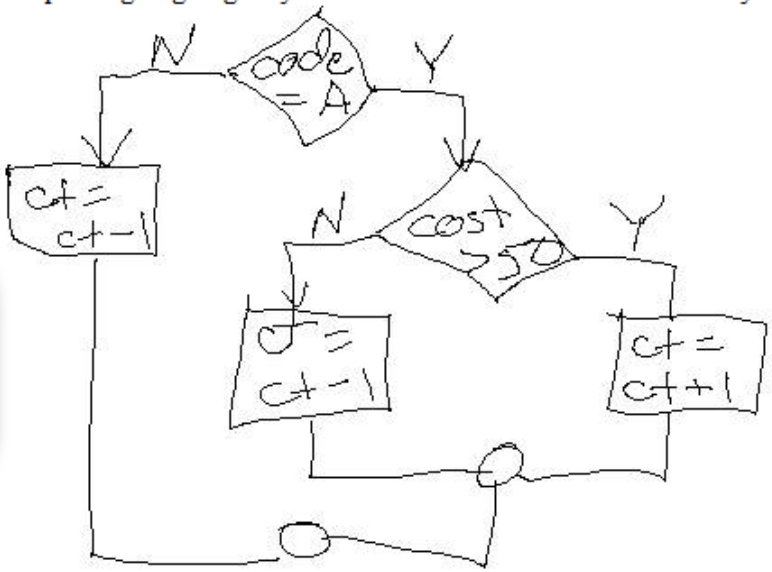
Logic Flowchart and Pseudoco...

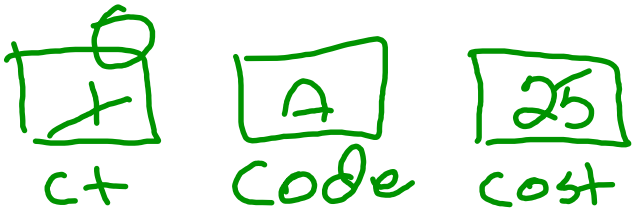
www.pgrocer.net/Cis17/assign/flowpseudoquiz1.html

Search

Logic Flowchart and Pseudocode Quiz

This quiz is going to give you a flowchart for a condition and ask you to answer questions about it.





Problem #1: Assume the following:

- 1 will be put into the memory variable ct
- A will be put into the memory variable code
- 25 will be put into the memory variable cost

After following the logic in the flowchart, what will be in the memory variable ct?

Problem #2: Assume the following:

- the memory variable ct will contain your answer from problem #1
- A will be put into the memory variable code
- 100 will be put into the memory variable cost

After following the logic in the flowchart, what will be in the memory variable ct?

Problem #3: Assume the following:

It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

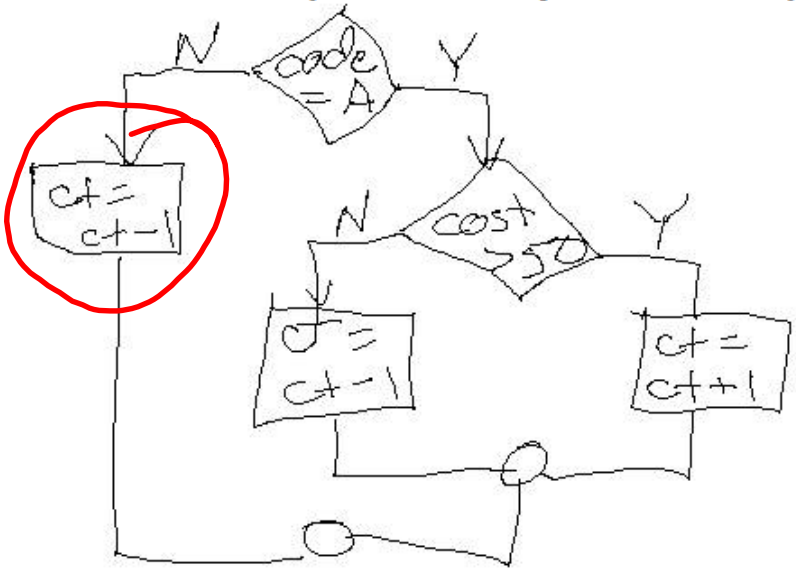
Logic Flowchart and Pseudoco...

www.pgrocer.net/Cis17/assign/flowpseudoquiz1.html

Search

After following the logic in the flowchart, what will be in the memory variable ct?

In the next section, I want you to tell me what pseudocode accurately portrays the logic show in the flowchart.



Problem #6: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A"
     if cost > 50
          ct = ct + 1
     else
          ct = ct - 1
     end if
end if
```

Problem #7: Does this pseudocode accurately portray the flowchart logic? Yes or No

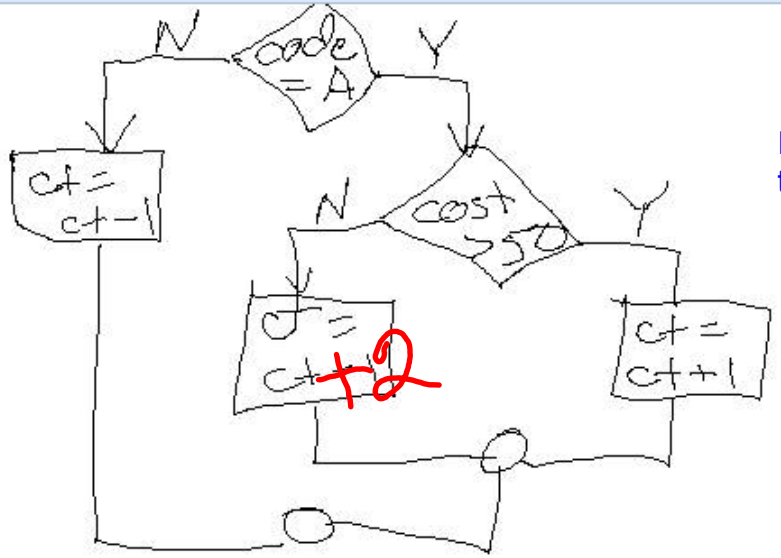
```
if code = "A" and cost > 50
```

It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

Logic Flowchart and Pseudoco...

www.pgrocer.net/Cis17/assign/flowpseudoquiz1.html

Search



If I change the box with the +2 so that the two Nos are not the same then you cannot do a compound test.

Problem #6: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A"
     if cost > 50
          ct = ct + 1
     else
          ct = ct - 1
     end if
end if
```

Problem #7: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A" and cost > 50
     ct = ct + 1
else
     ct = ct - 1
end if
```

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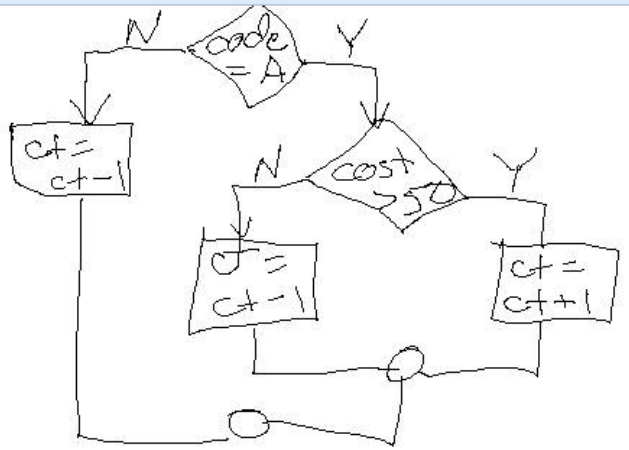
Logic Flowchart and Pseudoco...

www.pgrocer.net/Cis17/assign/flowpseudoquiz1.html

Search



Problem #6: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A"
     if cost > 50
          ct = ct + 1
     else
          ct = ct - 1
     end if
end if
```

Problem #7: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A" and cost > 50
     ct = ct + 1
else
     ct = ct - 1
end if
```

Click here to restore ink.

It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

Refresh Firefox...

11:43 AM
3/2/2017

Logic Flowchart and Pseudoco...

www.pgrocer.net/Cis17/assign/flowpseudoquiz1.html

Search

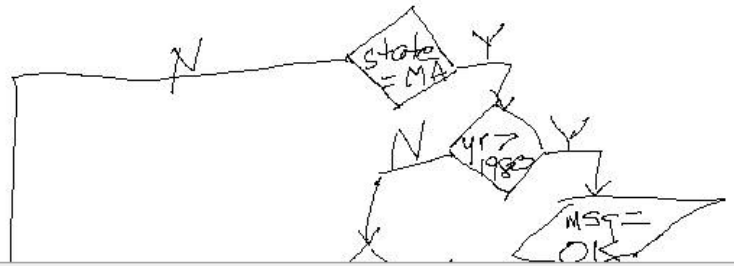
Problem #7: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A" and cost > 50
     ct = ct + 1
else
     ct = ct - 1
end if
```

Problem #8: Does this pseudocode accurately portray the flowchart logic? Yes or No

```
if code = "A"
     if cost > 50
          ct = ct + 1
     else
          ct = ct - 1
     end if
else
     ct = ct - 1
end if
```

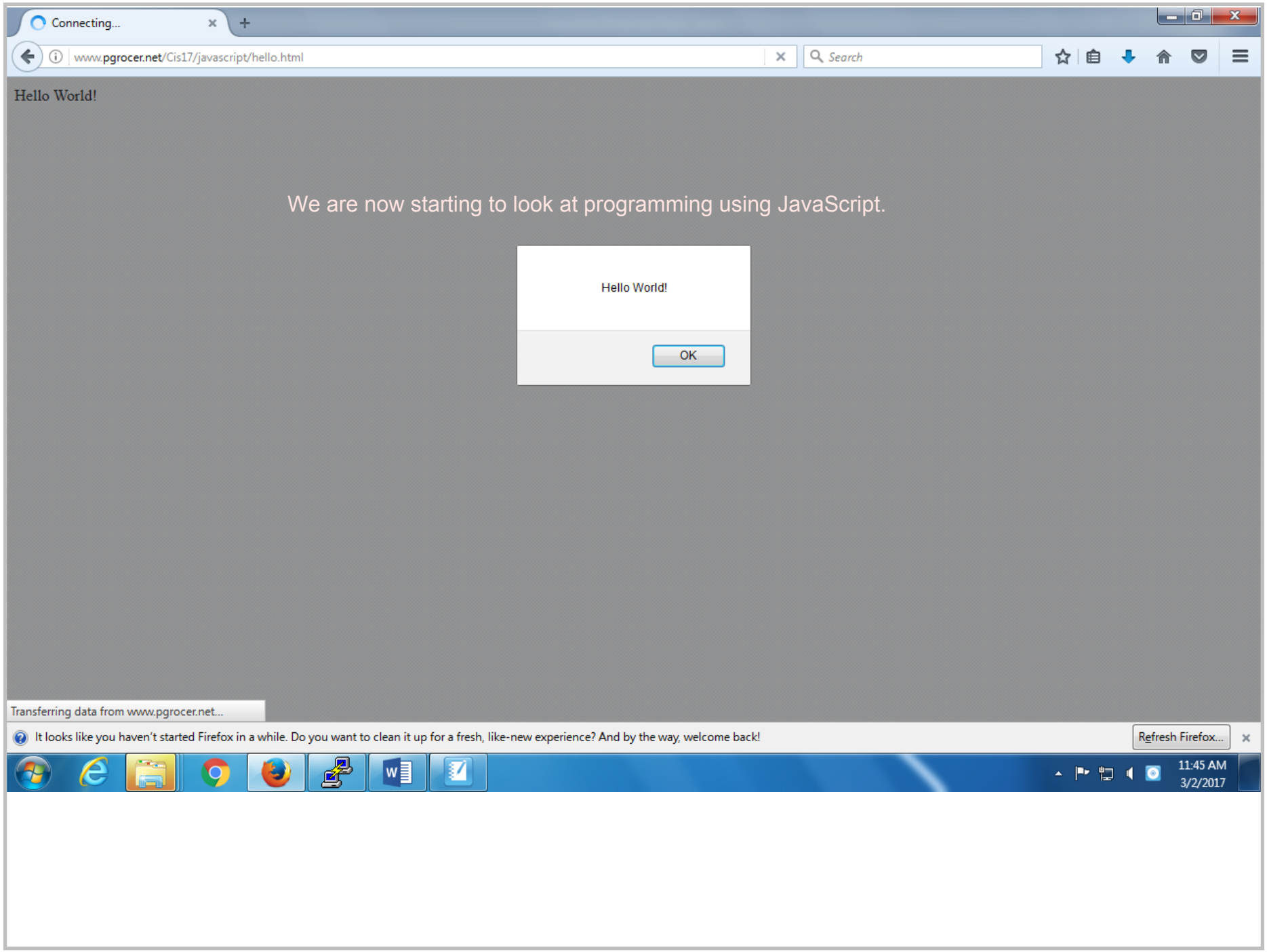
Now I want to look at another flowchart and process it with the data you are given.

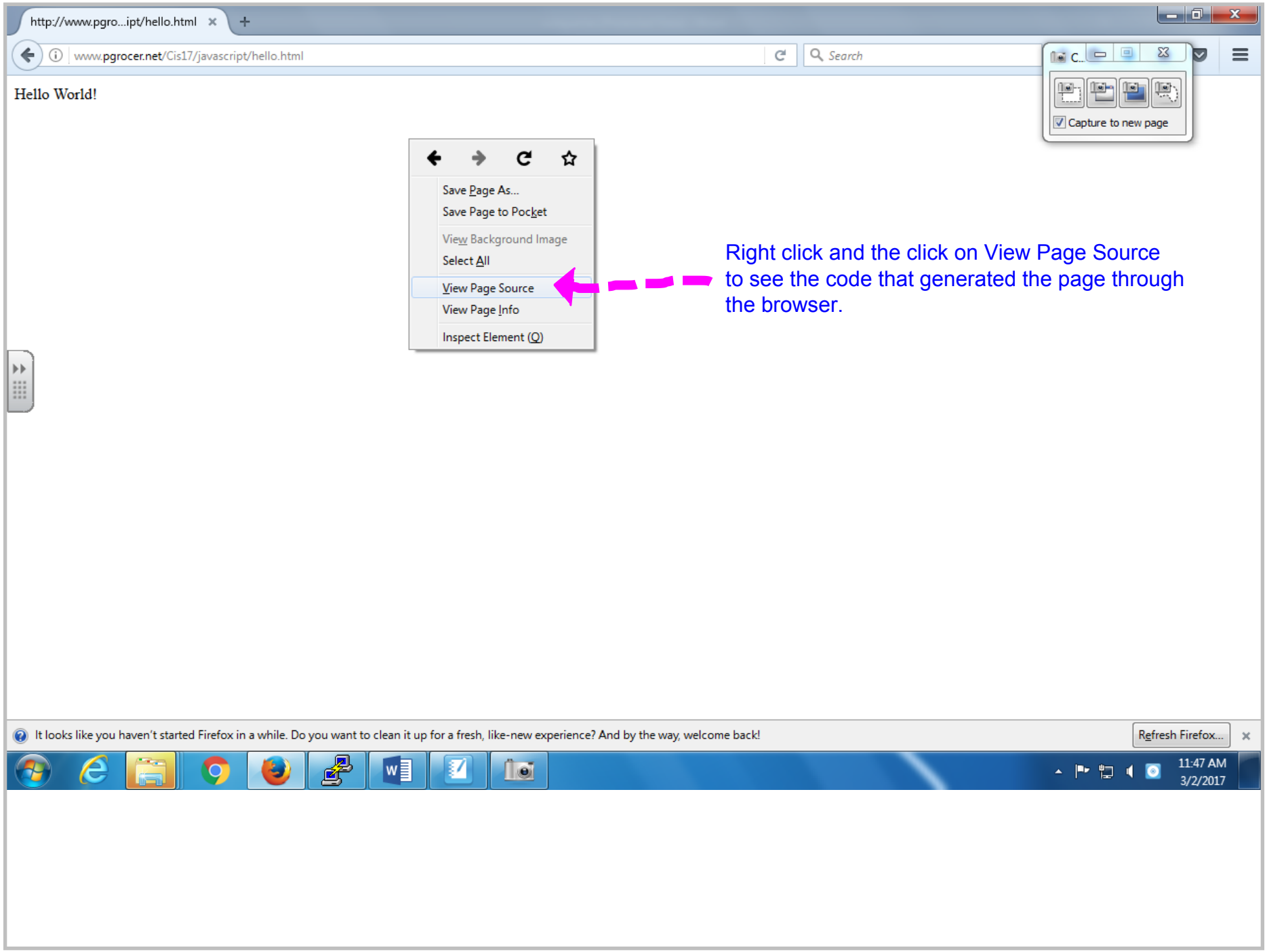


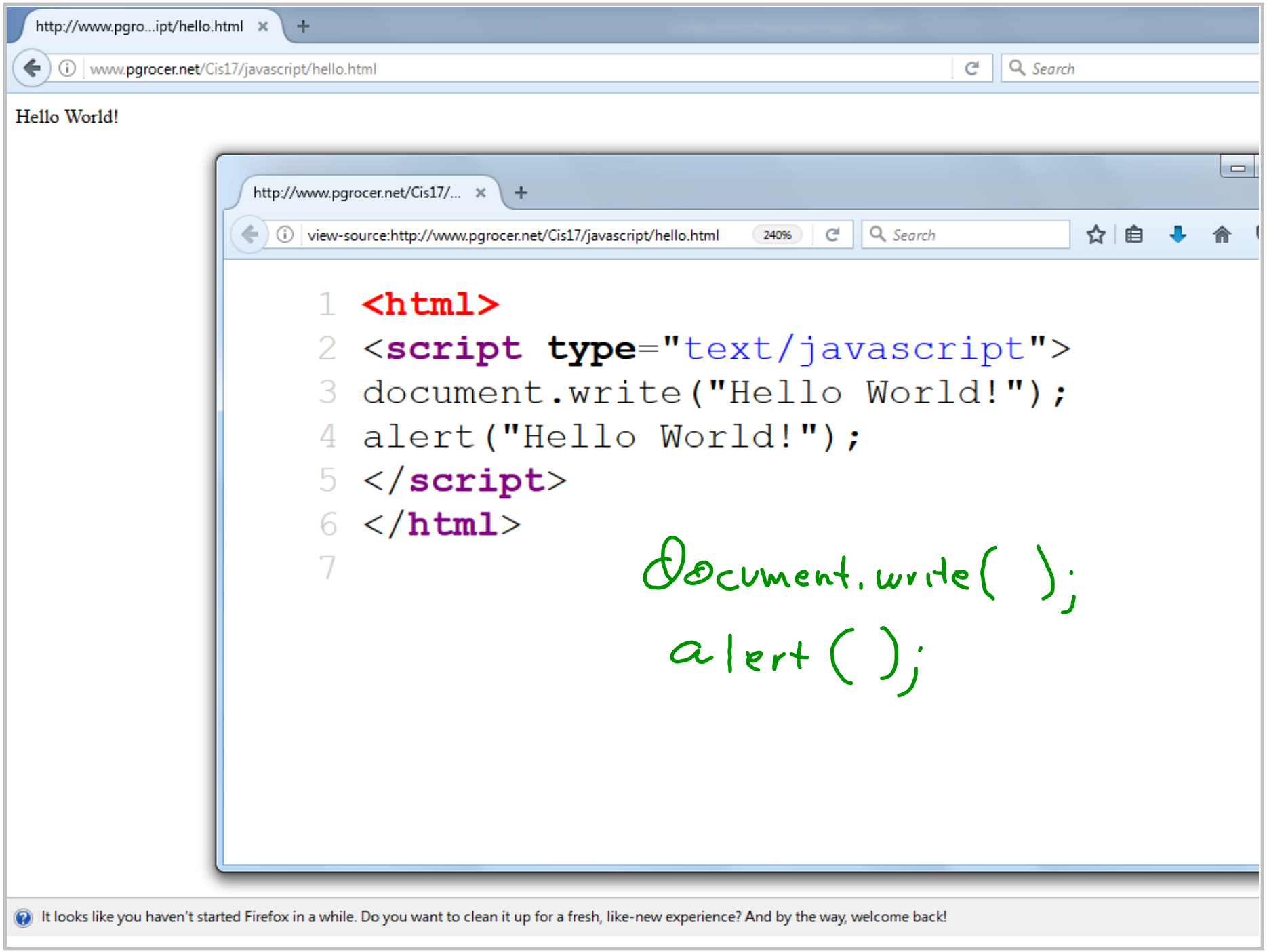
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

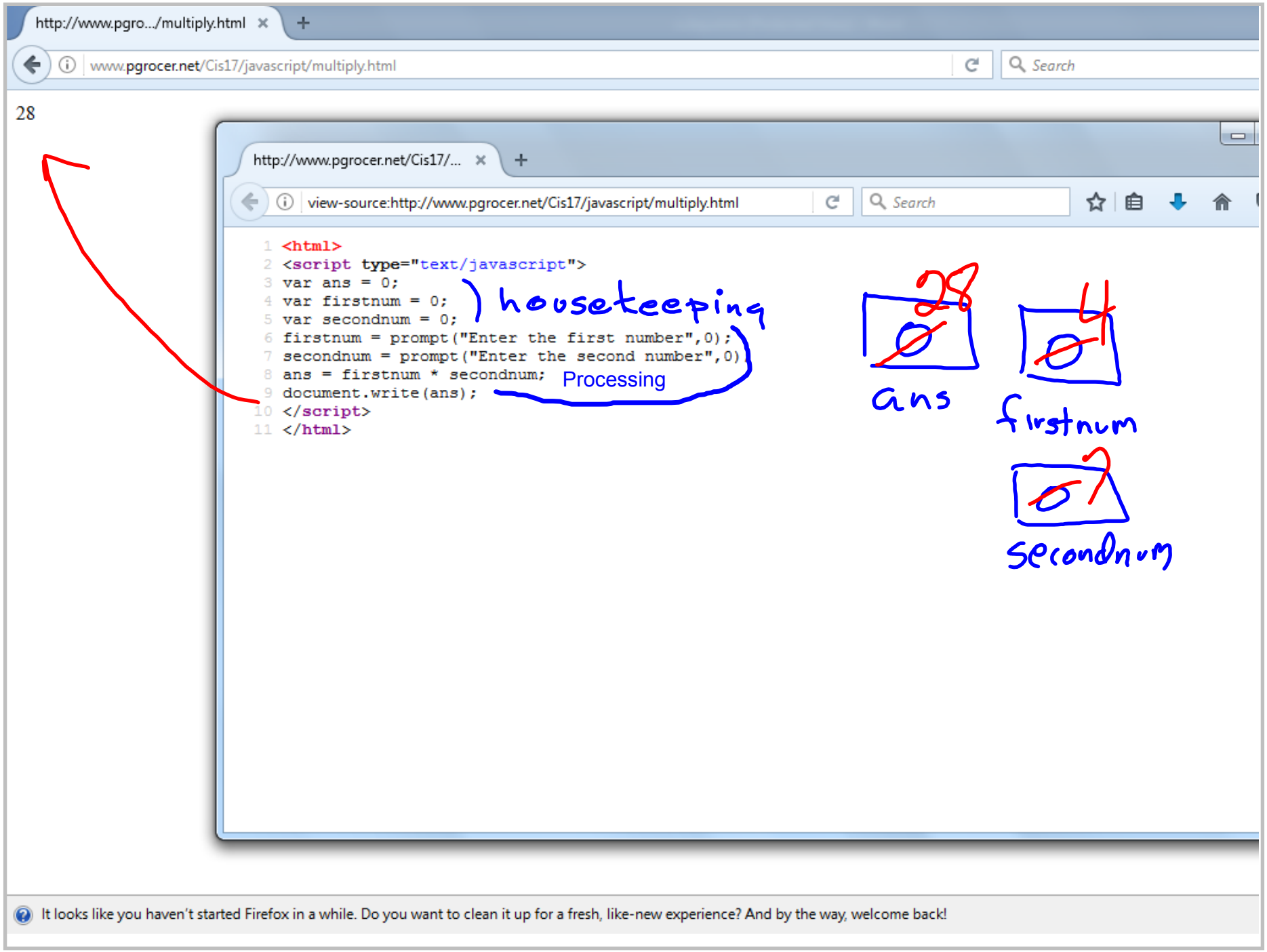
Refresh Firefox...

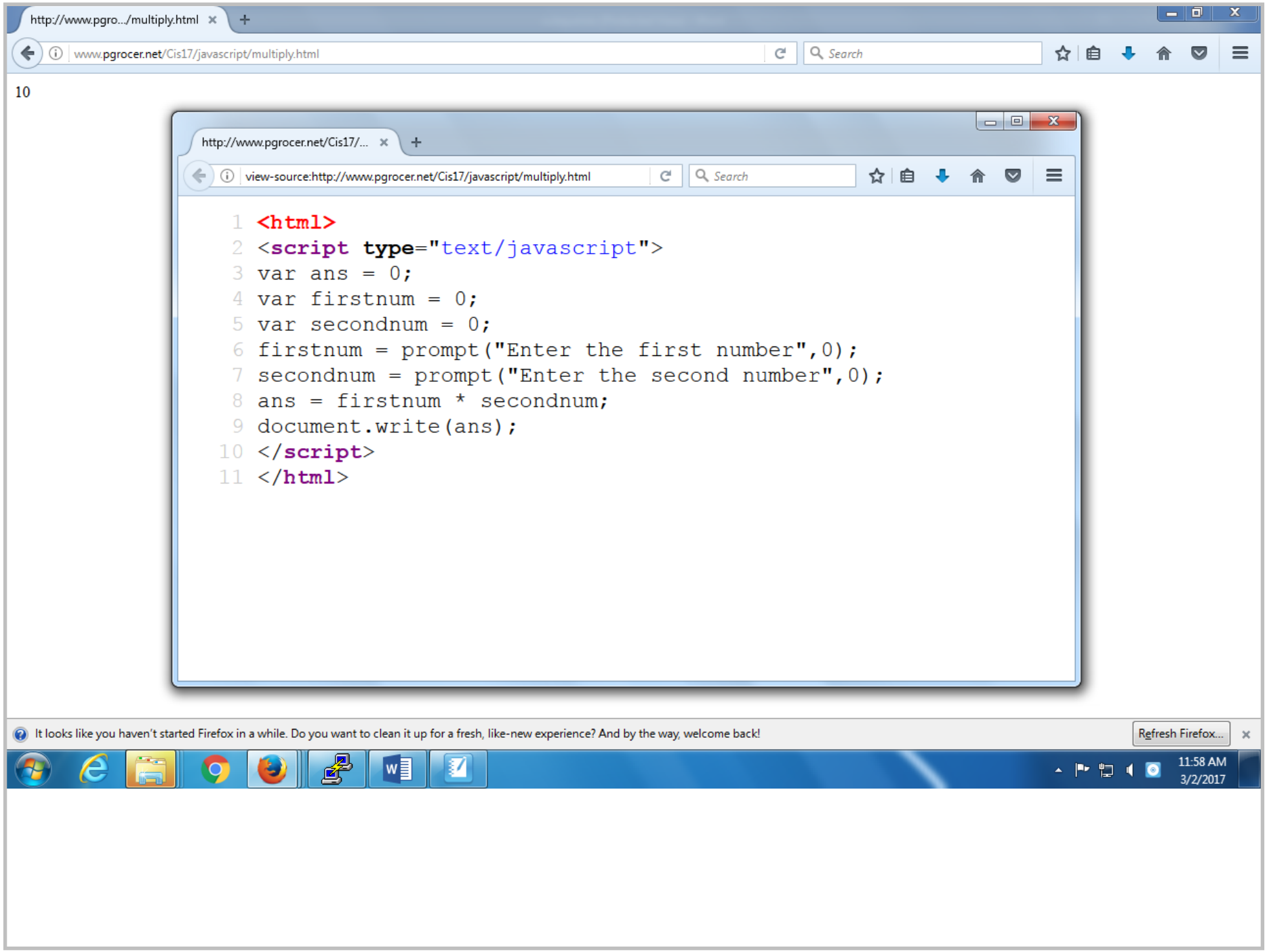
11:44 AM
3/2/2017

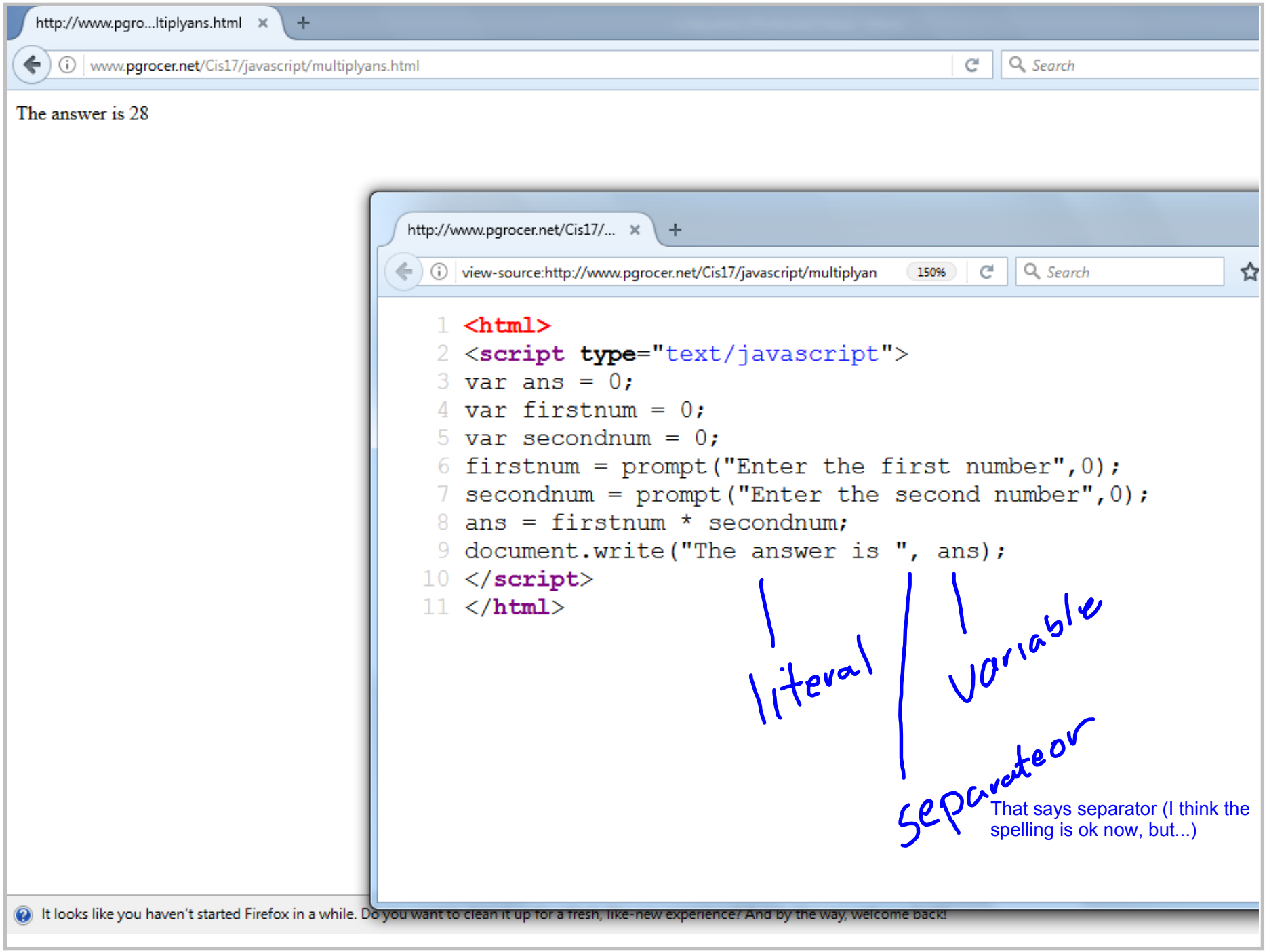

Connecting...
www.pgrocer.net/Cis17/javascript/hello.html
Search
Hello World!
We are now starting to look at programming using JavaScript.
Hello World!
OK
Transferring data from www.pgrocer.net...
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!
Refresh Firefox...
11:45 AM
3/2/2017

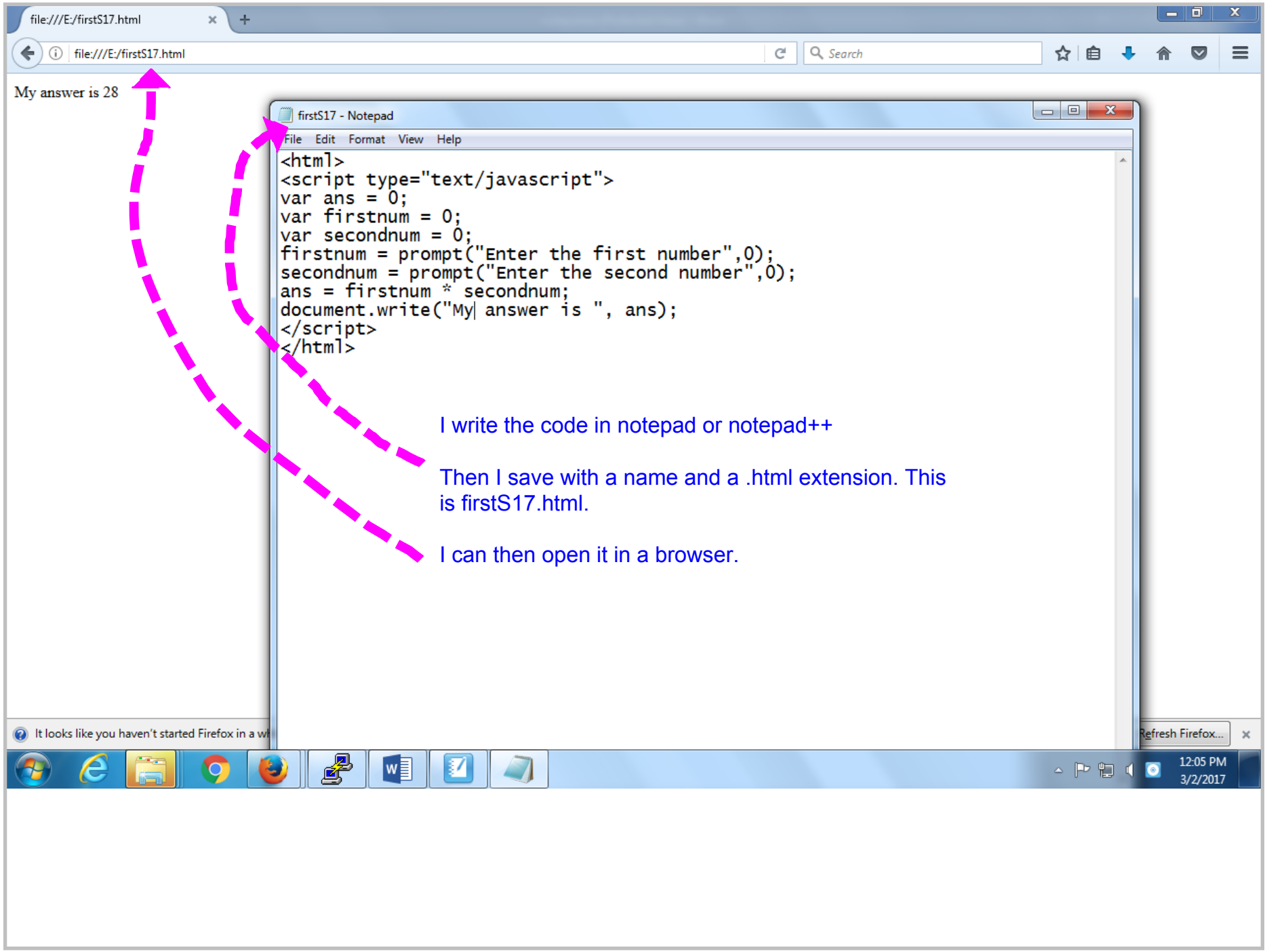

http://www.pgro...ipt/hello.html
www.pgrocer.net/Cis17/javascript/hello.html
Search
Hello World!
Capture to new page
Save Page As...
Save Page to Pocket
View Background Image
Select All
View Page Source
View Page Info
Inspect Element (Q)
Right click and the click on View Page Source to see the code that generated the page through the browser.
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!
Refresh Firefox...
11:47 AM
3/2/2017

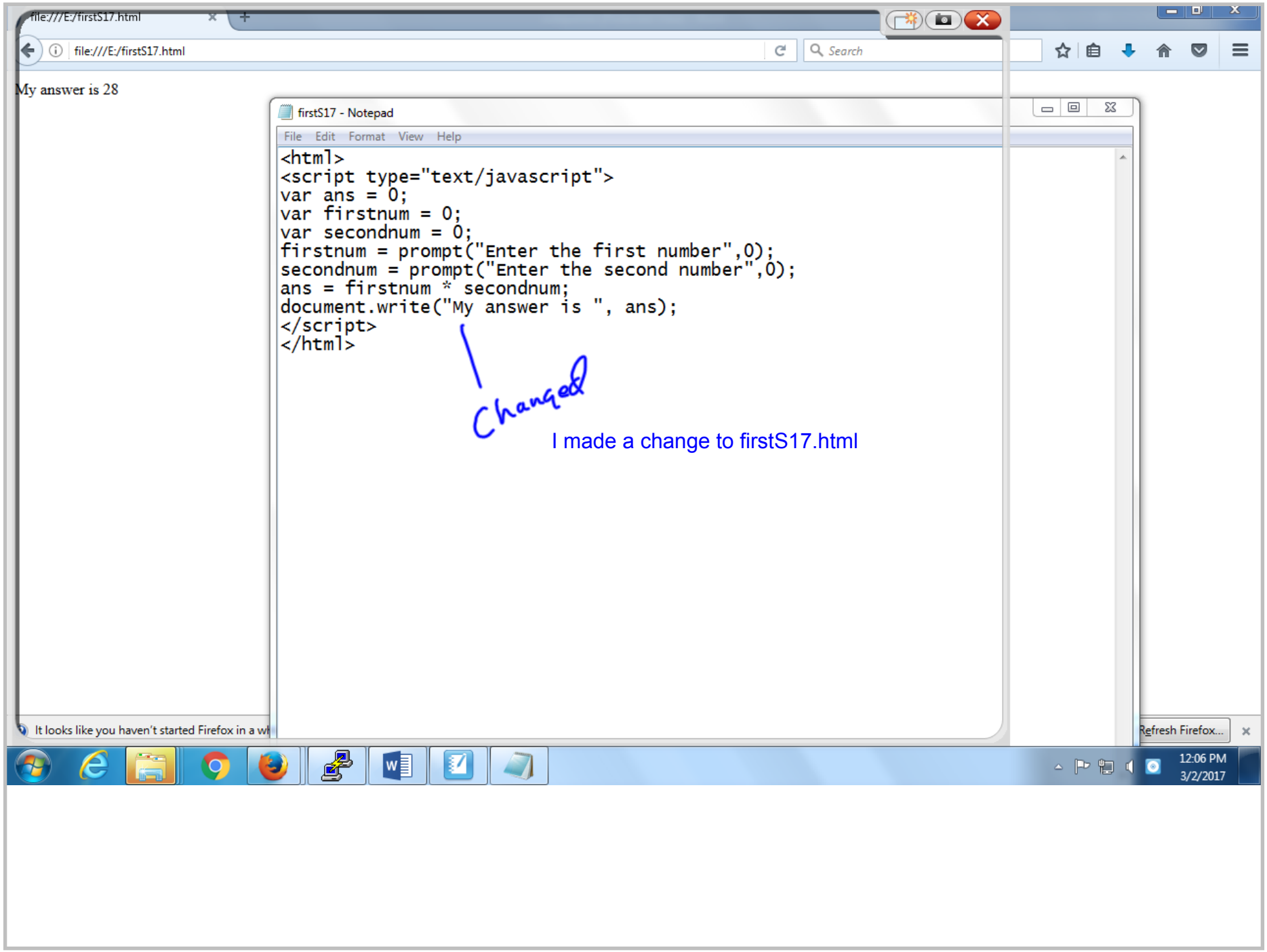

http://www.pgro...ipt/hello.html
www.pgrocer.net/Cis17/javascript/hello.html
Search
Hello World!
http://www.pgrocer.net/Cis17/...
view-source:http://www.pgrocer.net/Cis17/javascript/hello.html
240%
Search
1 <html>
2 <script type="text/javascript">
3 document.write("Hello World!");
4 alert("Hello World!");
5 </script>
6 </html>
7
document.write( );
alert( );
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

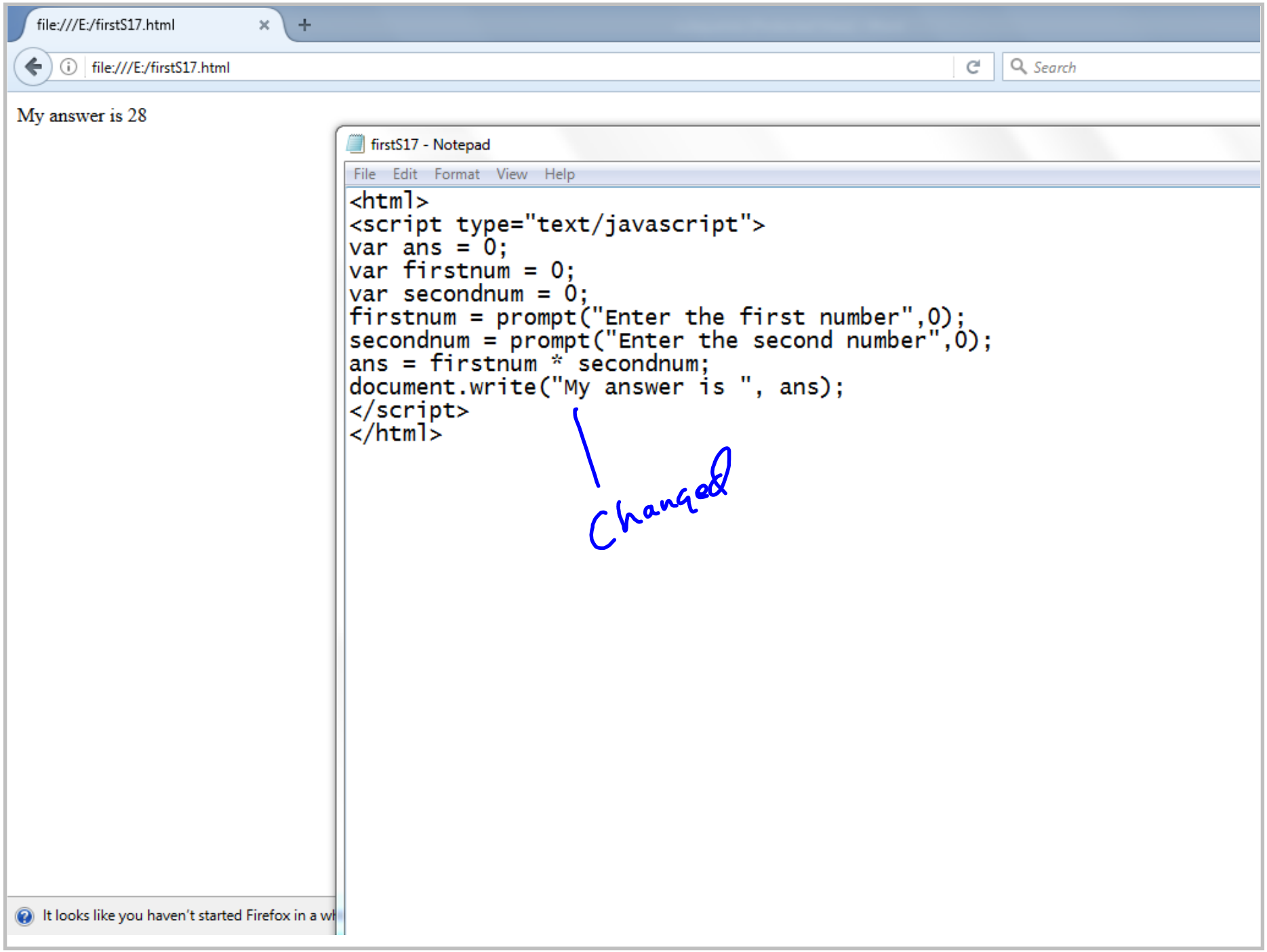

http://www.pgro.../multiply.html
www.pgrocer.net/Cis17/javascript/multiply.html
Search
28
http://www.pgrocer.net/Cis17/...
view-source:http://www.pgrocer.net/Cis17/javascript/multiply.html
Search
1 <html>
2 <script type="text/javascript">
3 var ans = 0;
4 var firstnum = 0;
5 var secondnum = 0;
6 firstnum = prompt("Enter the first number",0);
7 secondnum = prompt("Enter the second number",0);
8 ans = firstnum * secondnum;
9 document.write(ans);
10 </script>
11 </html>
housekeeping
Processing
28
ans
4
firstnum
7
secondnum
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

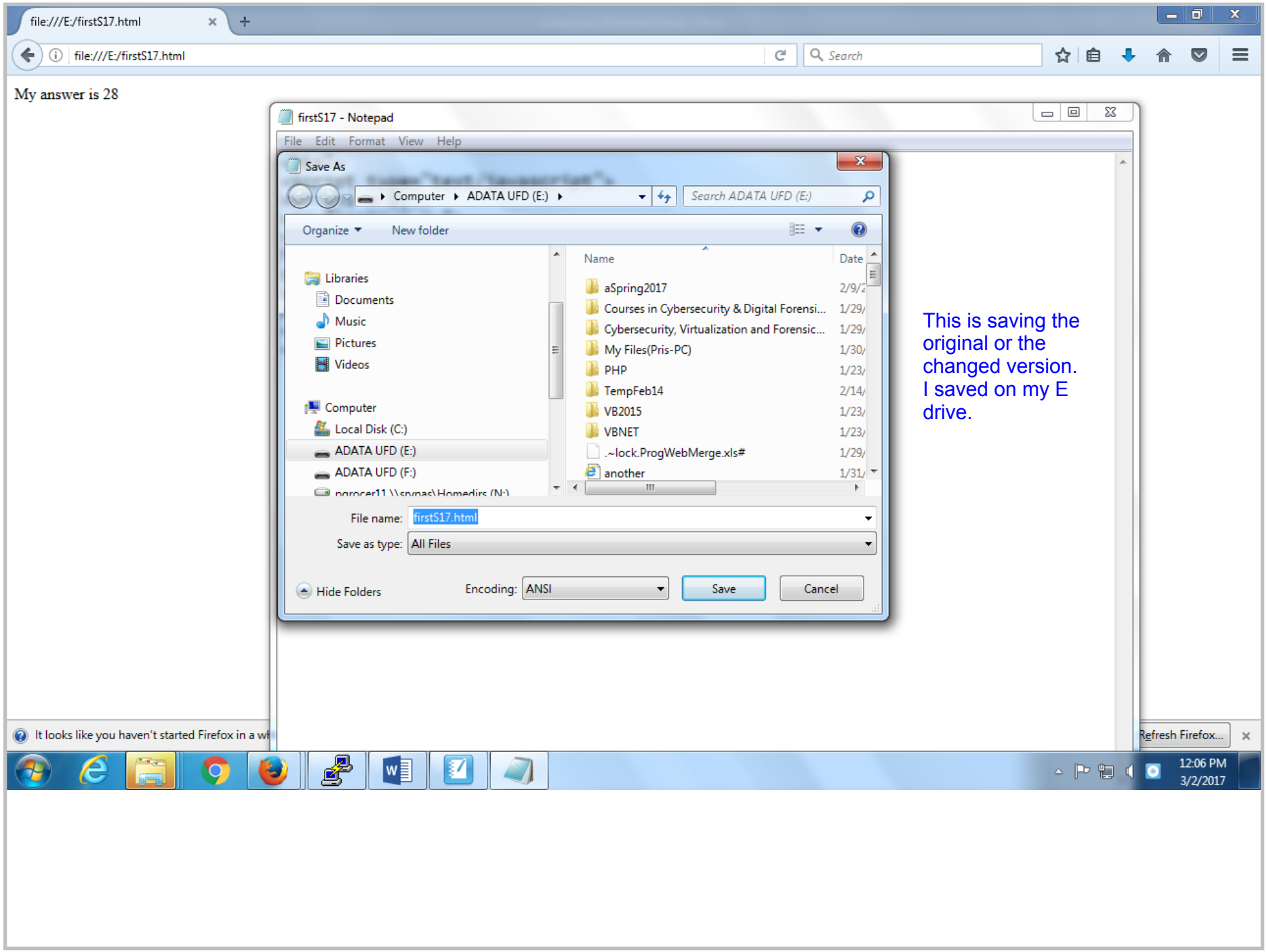

http://www.pgro.../multiply.html
www.pgrocer.net/Cis17/javascript/multiply.html
Search
10
http://www.pgrocer.net/Cis17/...
view-source:http://www.pgrocer.net/Cis17/javascript/multiply.html
Search
1 <html>
2 <script type="text/javascript">
3 var ans = 0;
4 var firstnum = 0;
5 var secondnum = 0;
6 firstnum = prompt("Enter the first number",0);
7 secondnum = prompt("Enter the second number",0);
8 ans = firstnum * secondnum;
9 document.write(ans);
10 </script>
11 </html>
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!
Refresh Firefox...
11:58 AM
3/2/2017

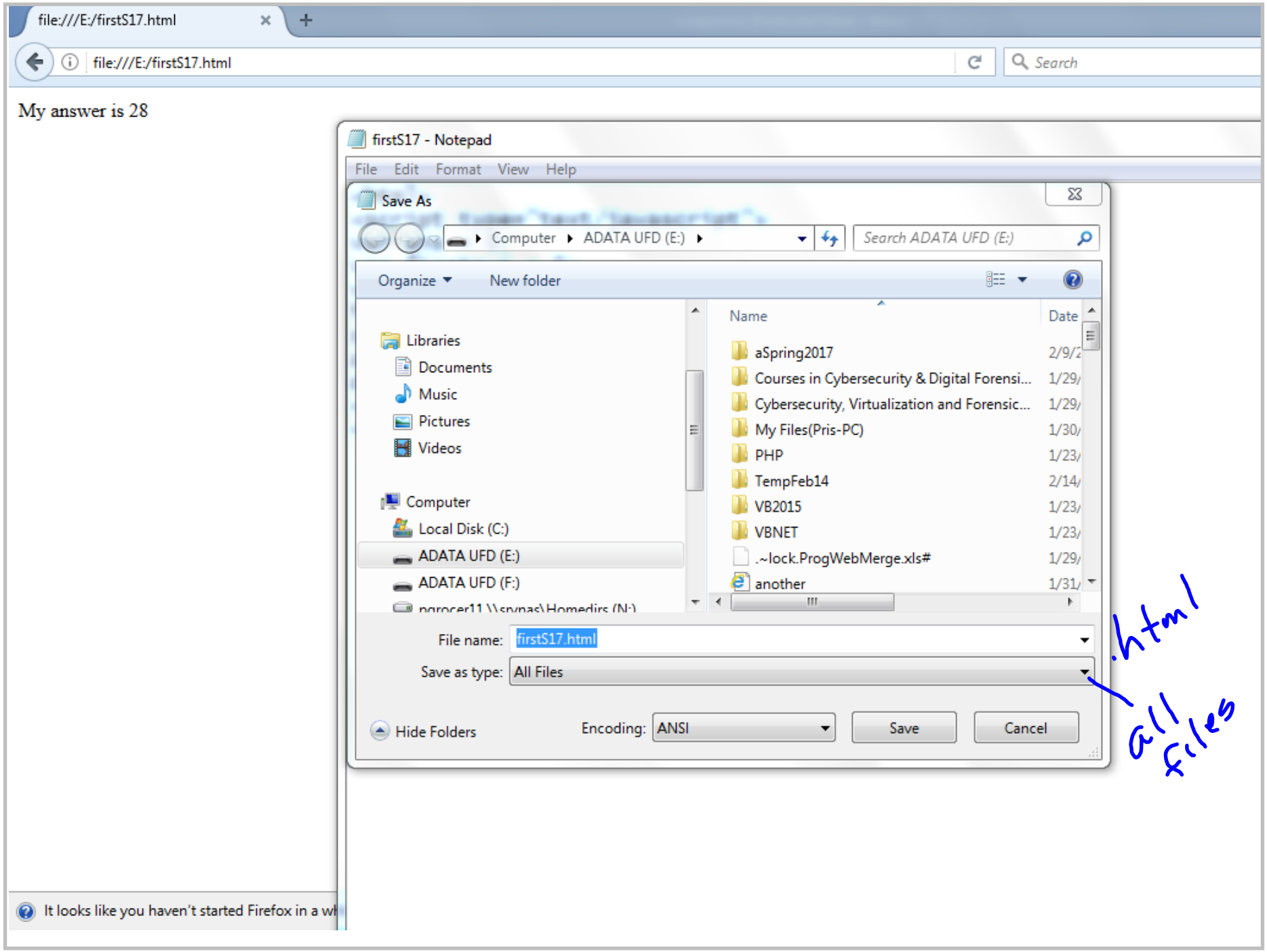

http://www.pgro...ltiplyans.html
www.pgrocer.net/Cis17/javascript/multiplyans.html
Search
The answer is 28
http://www.pgrocer.net/Cis17/...
view-source:http://www.pgrocer.net/Cis17/javascript/multiplyan
150%
Search
1 <html>
2 <script type="text/javascript">
3 var ans = 0;
4 var firstnum = 0;
5 var secondnum = 0;
6 firstnum = prompt("Enter the first number",0);
7 secondnum = prompt("Enter the second number",0);
8 ans = firstnum * secondnum;
9 document.write("The answer is ", ans);
10 </script>
11 </html>
literal
variable
separateor
That says separator (I think the spelling is ok now, but...)
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!

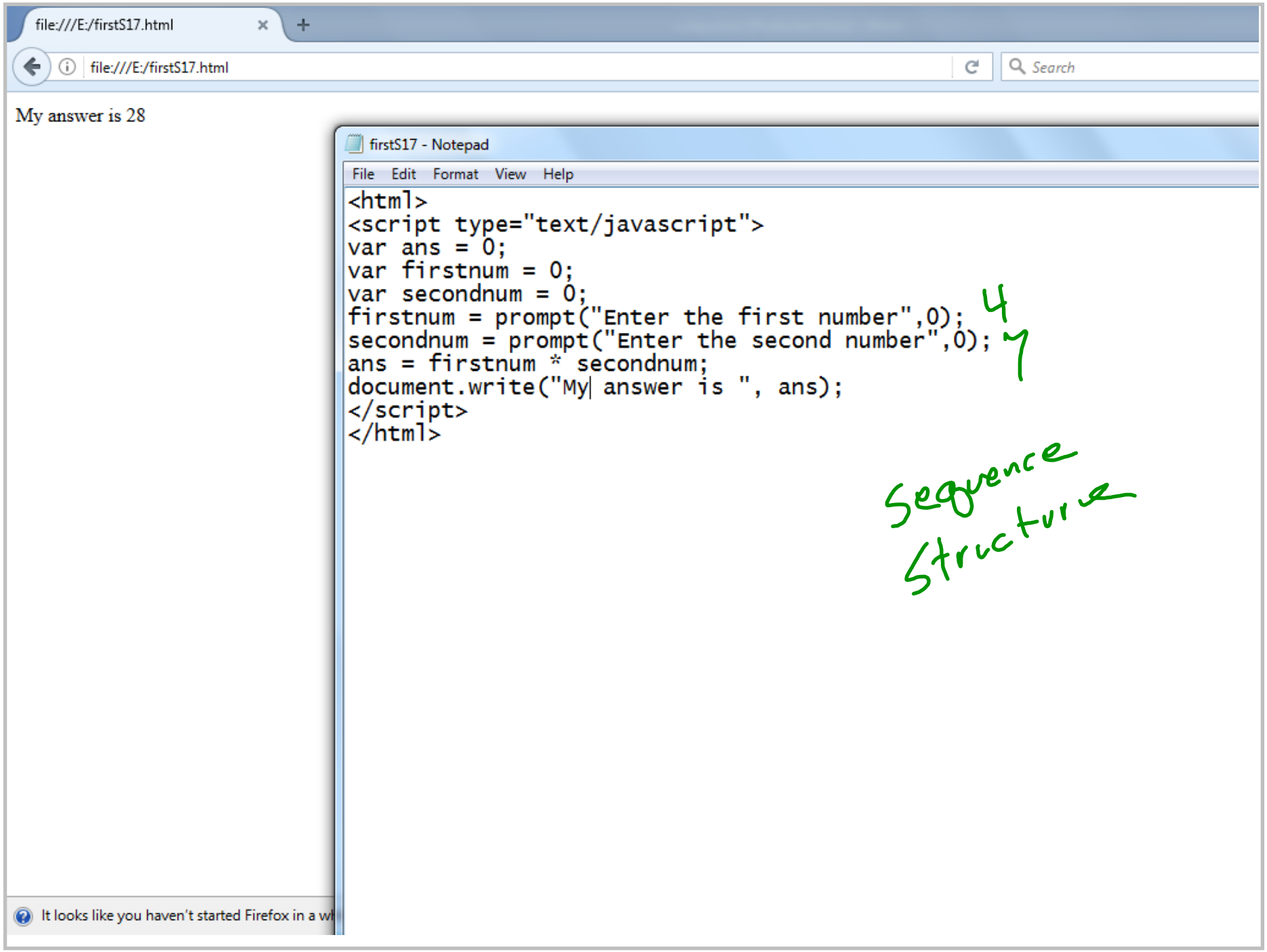

file:///E:/firstS17.html
file:///E:/firstS17.html
Search
My answer is 28
firstS17 - Notepad
File Edit Format View Help
<html>
<script type="text/javascript">
var ans = 0;
var firstnum = 0;
var secondnum = 0;
firstnum = prompt("Enter the first number",0);
secondnum = prompt("Enter the second number",0);
ans = firstnum * secondnum;
document.write("My answer is ", ans);
</script>
</html>
I write the code in notepad or notepad++
Then I save with a name and a .html extension. This is firstS17.html.
I can then open it in a browser.
It looks like you haven't started Firefox in a wh
Refresh Firefox...
12:05 PM
3/2/2017


file:///E:/firstS17.html
file:///E:/firstS17.html
Search
My answer is 28
firstS17 - Notepad
File Edit Format View Help
<html>
<script type="text/javascript">
var ans = 0;
var firstnum = 0;
var secondnum = 0;
firstnum = prompt("Enter the first number",0);
secondnum = prompt("Enter the second number",0);
ans = firstnum * secondnum;
document.write("My answer is ", ans);
</script>
</html>
Changed
I made a change to firstS17.html
It looks like you haven't started Firefox in a wh
Refresh Firefox...
12:06 PM
3/2/2017


file:///E:/firstS17.html
file:///E:/firstS17.html
Search
My answer is 28
firstS17 - Notepad
File Edit Format View Help
<html>
<script type="text/javascript">
var ans = 0;
var firstnum = 0;
var secondnum = 0;
firstnum = prompt("Enter the first number",0);
secondnum = prompt("Enter the second number",0);
ans = firstnum * secondnum;
document.write("My answer is ", ans);
</script>
</html>
Changed
It looks like you haven't started Firefox in a wl


file:///E:/firstS17.html
file:///E:/firstS17.html
Search
My answer is 28
firstS17 - Notepad
File Edit Format View Help
Save As
Computer ▸ ADATA UFD (E:) ▸
Search ADATA UFD (E:)
Organize
New folder
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
ADATA UFD (E:)
ADATA UFD (F:)
Name
Date
aSpring2017
Courses in Cybersecurity & Digital Forensi...
Cybersecurity, Virtualization and Forensic...
My Files(Pris-PC)
PHP
TempFeb14
VB2015
VBNET
.~lock.ProgWebMerge.xls#
another
File name: firstS17.html
Save as type: All Files
Hide Folders
Encoding: ANSI
Save
Cancel
This is saving the original or the changed version. I saved on my E drive.
It looks like you haven't started Firefox in a wh
Refresh Firefox...
12:06 PM
3/2/2017


file:///E:/firstS17.html
file:///E:/firstS17.html
Search
My answer is 28
firstS17 - Notepad
File Edit Format View Help
Save As
Computer ▸ ADATA UFD (E:) ▸
Search ADATA UFD (E:)
Organize
New folder
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
ADATA UFD (E:)
ADATA UFD (F:)
Name
Date
aSpring2017
Courses in Cybersecurity & Digital Forensi...
Cybersecurity, Virtualization and Forensic...
My Files(Pris-PC)
PHP
TempFeb14
VB2015
VBNET
.~lock.ProgWebMerge.xls#
another
File name: firstS17.html
Save as type: All Files
Hide Folders
Encoding: ANSI
Save
Cancel
.html
all files
It looks like you haven't started Firefox in a wh


file:///E:/firstS17.html
file:///E:/firstS17.html
Search
My answer is 28
firstS17 - Notepad
File Edit Format View Help
<html>
<script type="text/javascript">
var ans = 0;
var firstnum = 0;
var secondnum = 0;
firstnum = prompt("Enter the first number",0);
secondnum = prompt("Enter the second number",0);
ans = firstnum * secondnum;
document.write("My answer is ", ans);
</script>
</html>
4
7
Sequence
Structure
It looks like you haven't started Firefox in a wl