

```
<html>
<script type="text/javascript">
var ans = 0;
var firstnum = 0;
var secondnum = 0;
var whattodo;
firstnum = prompt("Enter the first number",0);
secondnum = prompt("Enter the second number",0);
whattodo = prompt("Enter * or /", "");
if (whattodo == "*")
{
ans = firstnum * secondnum;
}
else
{
if (whattodo == "/")
{
ans = firstnum / secondnum;
}
else
{
ans = 0;
}
}
document.write("The answer is ", ans);
</script>
</html>
```

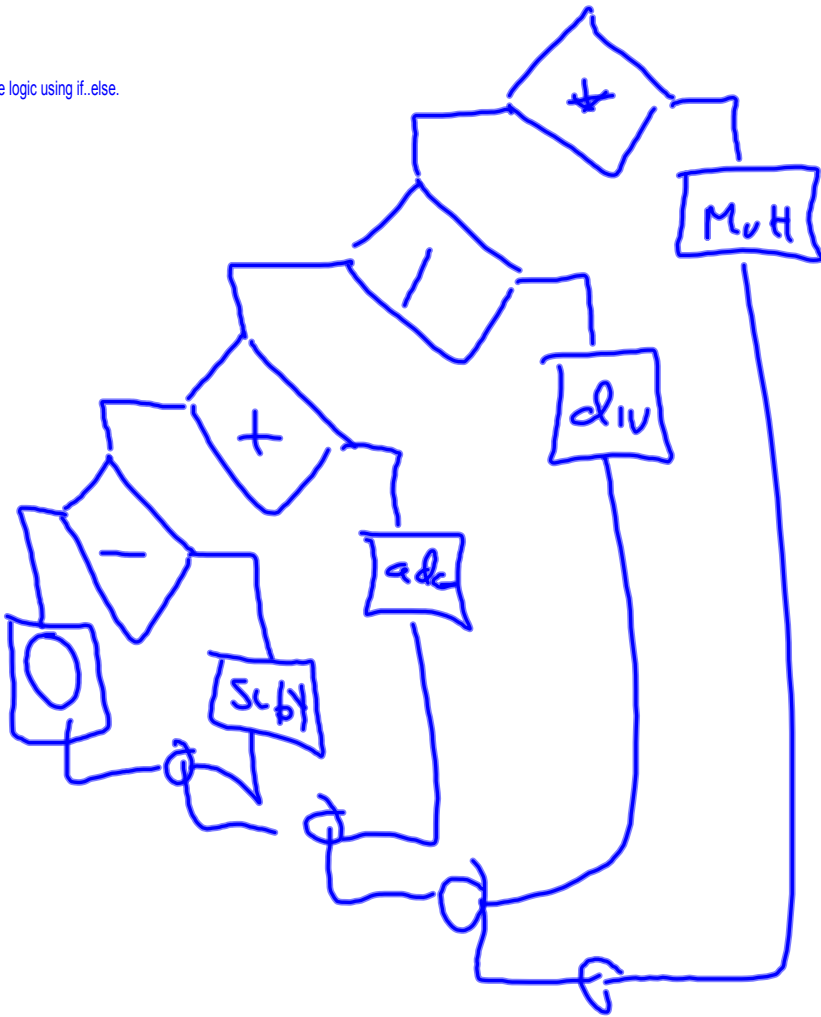
The ans

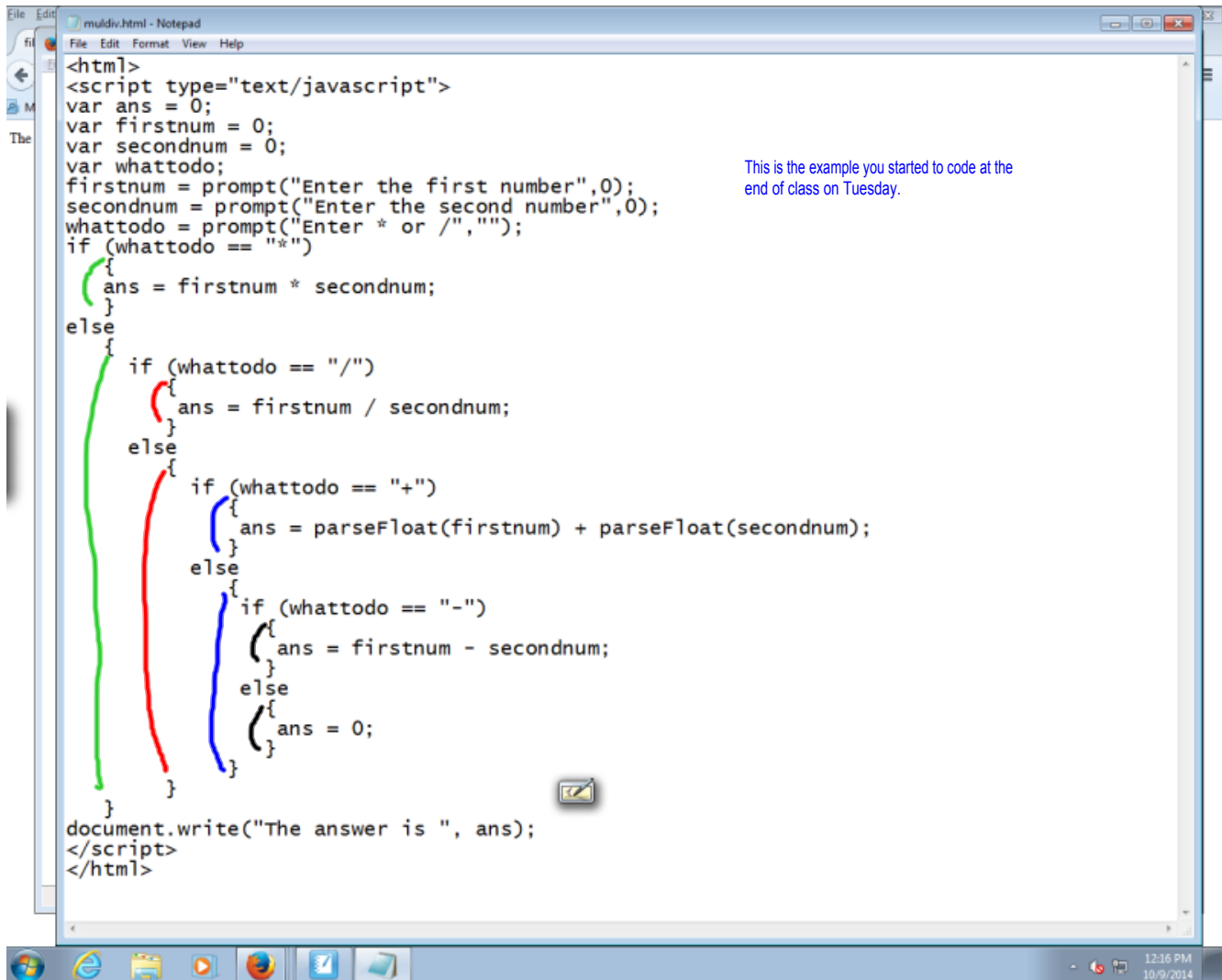
Next I want to change the logic to handle all four of these:

* / + -

Note after the else I have two curly braces and embedded inside them I ask the next question and deal with its yes and its no.

Flowchart of the logic using if..else.

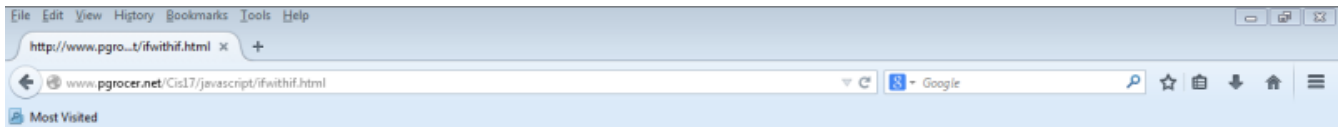




```
<html>
<script type="text/javascript">
var ans = 0;
var firstnum = 0;
var secondnum = 0;
var whattodo;
firstnum = prompt("Enter the first number",0);
secondnum = prompt("Enter the second number",0);
whattodo = prompt("Enter * or /","");
if (whattodo == "*")
{
ans = firstnum * secondnum;
}
else
{
if (whattodo == "/")
{
ans = firstnum / secondnum;
}
else
{
if (whattodo == "+")
{
ans = parseFloat(firstnum) + parseFloat(secondnum);
}
else
{
if (whattodo == "-")
{
ans = firstnum - secondnum;
}
else
{
ans = 0;
}
}
}
}
}
document.write("The answer is ", ans);
</script>
</html>
```

This is the example you started to code at the end of class on Tuesday.

12:16 PM
10/9/2014



You can choose a prize from group A

```
1 <html>
2 <script type="text/javascript">
3 var myPoints;
4 var msg;
5 myPoints = prompt("Enter the number of points you have earned",0);
6 if (myPoints < 10)
7   {
8     msg = "Not enough points for a prize";
9   }
10 else
11   {
12     if (myPoints <= 50)
13       {
14         msg = "You can choose a prize from group B";
15       }
16     else
17       {
18         msg = "You can choose a prize from group A";
19       }
20   }
21 document.write(msg);
22 </script>
23 </html>
24
```

I defined a variable myPoints and could have used = 0 to give it an initial value. I could have made msg = ""; to make it contain nothing.

I prompt the user for myPoints and then I determine which prize group they are in based on the points. Since I see a msg saying group A I know that I entered a number greater than 50.

The screenshot shows a web browser window with a JavaScript code editor. The code is as follows:

```
1 <html>
2 <script type="text/javascript">
3 var myPoints;
4 var msg;
5 myPoints = prompt("Enter the number of points you have earned",0);
6 if (myPoints < 10)
7   {
8     msg = "Not enough points for a prize";
9   }
10 else
11  {
12    if (myPoints <= 50)
13    {
14      msg = "You can choose a prize from group B";
15    }
16    else
17    {
18      msg = "You can choose a prize from group A";
19    }
20  }
21 document.write(msg);
22 </script>
23 </html>
24
```

Overlaid on the code is a hand-drawn flowchart in blue ink. The flowchart starts with an oval labeled "START", followed by a rectangle labeled "Var", and a parallelogram labeled "myPoints". It then reaches a diamond-shaped decision node labeled "myPoints < 10". The "N" (No) path leads to a box labeled "Not", which then goes to a "Write" box and finally to an oval labeled "stop". The "Y" (Yes) path leads to a second diamond-shaped decision node labeled "myPoints <= 50". From this second diamond, the "N" path leads to a box labeled "A", and the "Y" path leads to a box labeled "B". Both boxes "A" and "B" then merge into a single path that goes to the "Write" box and finally to the "stop" oval.

File Edit View History Bookmarks Tools Help

JavaScript guess number game x +

Source of: http://www.pgproc.net/Cis17/javascript/MAorRI.html - Mozilla Firefox

```
1 <html>
2 <head>
3 <title>JavaScript guess number game</title>
4 </head>
5 <body>
6 <script type="text/javascript">
7   var theName = window.prompt("Enter your name","");
8   var theState = window.prompt("enter the state","");
9   if (theState == "MA" || theState == "RI")
10    {
11     document.write(theName + " you live in " + theState, "<br>");
12    }
13  else
14    {
15     document.write(theName + " you do not live in MA or RI <br>");
16    }
17 </script>
18 </body>
19 </html>
```

Here I have window.prompt. The use of window is optional. It simply means a prompt in the window.

You can use the concatenate + or the separator, between the things that you write.

Instead of the separator after theState, I could use the + to concatenate.

Since I want the same thing if it is MA or RI then I can make this compound.

Note the
 within the quotes is part of the literal and therefore it gets sent to the browser which recognizes it as a tag and moves down to the next line.

// OR

Line 19, Col 8

The screenshot shows a web browser window displaying the output of a JavaScript program. The output is "Jon you live in MADone". A pink dashed arrow points from the text "Jon you live in MADone" in the browser to the corresponding code in the Notepad window below.

The Notepad window contains the following HTML and JavaScript code:

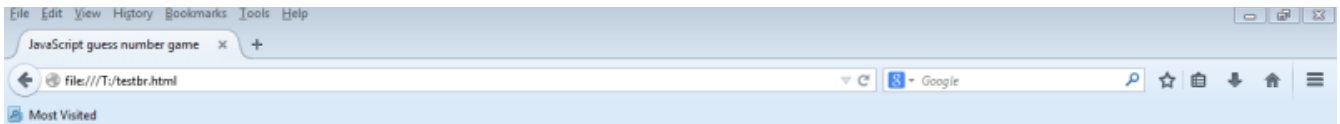
```

<html>
<head>
<title>JavaScript guess number game</title>
</head>
<body>
<script type="text/javascript">
  var theName = window.prompt("Enter your name","");
  var theState = window.prompt("enter the state","");
  if (theState == "MA" || theState == "RI")
  {
    document.write(theName + " you live in " + theState);
  }
  else
  {
    document.write(theName + " you do not live in MA or RI");
  }
  document.write("Done");
</script>
</body>
</html>

```

Annotations in blue text provide context:

- I entered Jon for theName and MA for theState. Since MA is one of the things I test for I write theName concatenated with you live in concatenated with theState.
- Now I took the
 out of the document.write statements and put in another document.write saying Done after the if has ended. Note that the result does not skip a line. If I had left the
, it would have skipped the line.

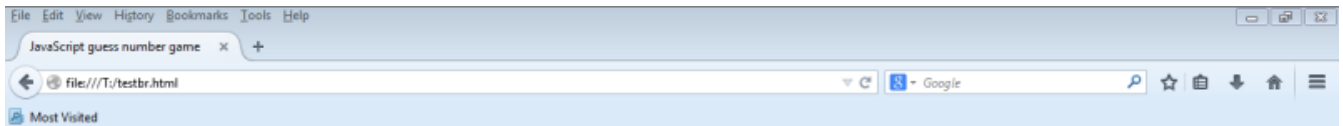


dsqdfg you live in RI
Done

A screenshot of a Notepad window titled "testbr.html - Notepad". The window contains the following HTML and JavaScript code:

```
<html>
<head>
<title>JavaScript guess number game</title>
</head>
<body>
<script type="text/javascript">
  var theName = window.prompt("Enter your name", "");
  var theState = window.prompt("enter the state", "");
  if (theState == "MA" || theState == "RI")
  {
    document.write(theName + " you live in " + thestate);
  }
  else
  {
    document.write(theName + " you do not live in MA or RI");
  }
  document.write("<br>Done");
</script>
</body>
</html>
```

Now I put the
 in before Done so it skips to the next lin.

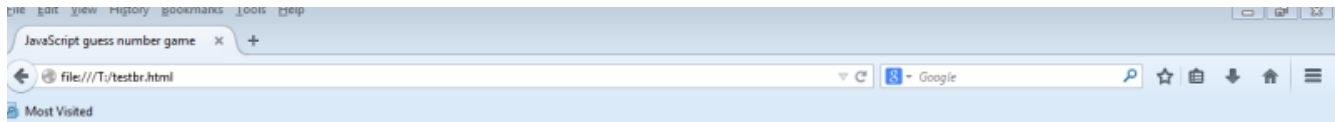


dsdfig you live in RI
Done

A screenshot of a Notepad window titled "testbr.html - Notepad". The window contains the following HTML and JavaScript code:

```
<html>
<head>
<title>JavaScript guess number game</title>
</head>
<body>
<script type="text/javascript">
  var theName = window.prompt("Enter your name","");
  var theState = window.prompt("enter the state","");
  if (theState == "MA" || theState == "RI")
  {
    document.write(theName + " you live in " + theState);
  }
  else
  {
    document.write(theName + " you do not live in MA or RI");
  }
  document.write("<br>");
  document.write("Done");
</script>
</body>
</html>
```

On this one I put a seprate document.write for skipping down to the next line.



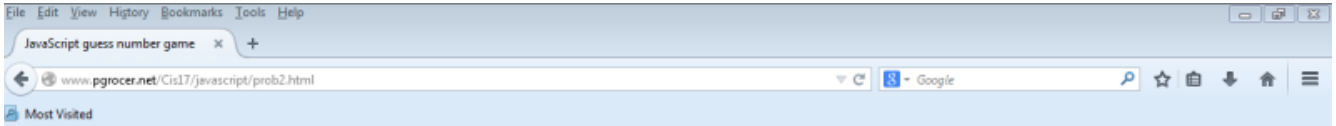
Ann you do not live in MA or RI
Done

```
testbr.html - Notepad
File Edit Format View Help
<html>
<head>
<title>JavaScript guess number game</title>
</head>
<body>
<script type="text/javascript">
  var theName = window.prompt("Enter your name","");
  var theState = window.prompt("enter the state","");
  if (theState == "MA" || theState == "RI")
  {
    document.write(theName + " you live in " + theState);
  }
  else
  {
    document.write(theName + " you do not live in MA or RI");
  }
  document.write("<br>");
  document.write("Done");
</script>
</body>
</html>
```

On this one I entered Ann for the prompt to enter theName and I entered a state other than MA or RI when prompted for theState. Lets say I entered NY. That means theState is not equal to MA or RI so I take the else and write theName concatenated with a message.

Note that in the IF I have two complete conditions theState == "MA" is one complete condition and theState == "RI" is another complete condition.

11:42 AM
10/14/2014

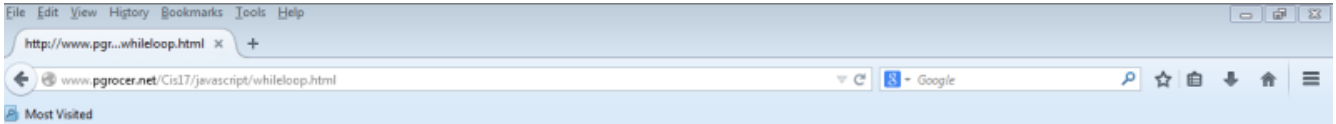


Arr you do not meet the criteria One of the conditions (or both) was not true so I execute the else.

SS AND

This is an AND relationship which means both things have to be true. If either is false I execute the else.

```
1 <html>
2 <head>
3 <title>JavaScript guess number game</title>
4 </head>
5 <body>
6 <script type="text/javascript">
7   var theName = window.prompt("Enter your name", "");
8   var yrBirth = parseInt(window.prompt("enter the year of birth", 0));
9   var marStat = window.prompt("enter your marital status", "");
10  if (yrBirth > 1980 && marStat == "M")
11    {
12      document.write(theName + " you meet the criteria <br>");
13    }
14  else
15    {
16      document.write(theName + " you do not meet the criteria <br>");
17    }
18 </script>
19 </body>
20 </html>
```



This is number 1
This is number 2
This is number 3
This is number 4
This is number 5
This is number 6
This is number 7

This is the end!!!

We are looking at a while loop with a condition. The loop will continue as long as ct is less than or equal to the data_input I took in at the prompt. Note that I set ct to 1 prior to entering the loop.

```
1 <html>
2 <script type="text/javascript">
3 var data_input = 0;
4 data_input=prompt("How many times should I write the line?",0);
5 var ct=1;
6 while (ct <= data_input)
7 {
8   document.write("This is number " + ct + "<br>");
9   ct = ct + 1; Inside I am changing the control which is ct.
10 }
11 document.write("<br>" + "This is the end!!!")
12 </script>
13 </html>
```



These are the three things you need to successfully construct a loop

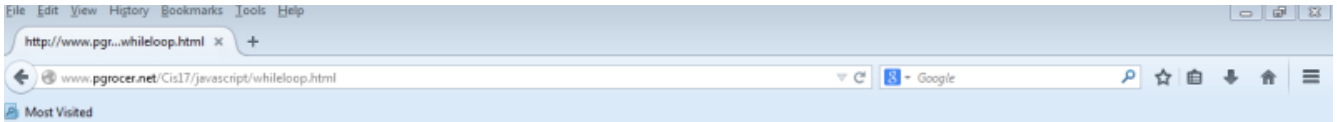
Loop

ct is the control

1) set control

2) test control

3) change control



This is number 1
This is number 2
This is number 3
This is number 4
This is number 5
This is number 6
This is number 7

This is the end!!!

```
Source of: http://www.pgrocer.net/Cis17/javascript/whileloop.html - Mozilla Firefox
File Edit View Help
1 <html>
2 <script type="text/javascript">
3 var data_input = 0;
4 data_input=prompt("How many times should I write the line?",0);
5 var ct=1;
6 while (ct <= data_input)
7 {
8     document.write("This is number " + ct + "<br>");
9     ct = ct + 1;
10 }
11 document.write("<br>" + "This is the end!!!")
12 </script>
13 </html>
```

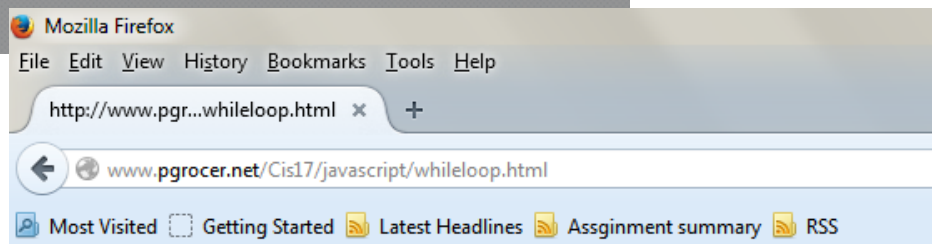
Code in loop execute repeatedly

I entered 7.
set the control
test the control
change the control
The loop gets executed repeatedly until the condition that tests the control is no longer true. Note that to make this work it is necessary that inside the loop I change the control. Note it is possible not to enter the loop. If I set ct and data_input such that ct is not less than or equal to data_input when I test, I will not enter the loop. See next slide.

How many times should I write the line?

OK Cancel

When I entered 0 for data_input, then ct which was set to 1 is not less then or equal to data_input so the loop is not entered and the line below is written.

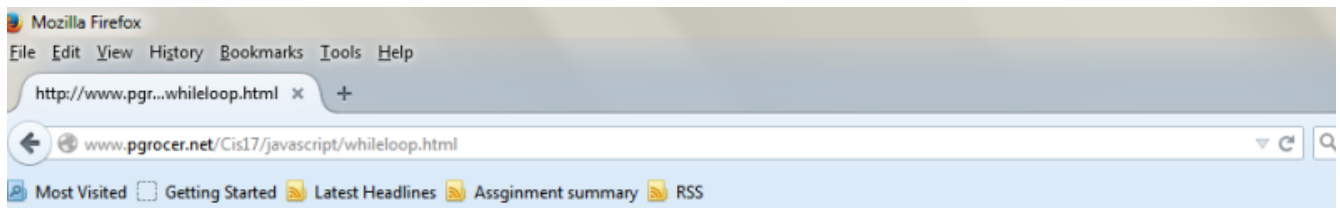


This is the end!!!

Since the do does not check until after the loop has been executed once, you will always go through once - see next slide.

```
1 <html>
2 <script type="text/javascript">
3 var data_input = 0;
4 data_input=prompt("How many times should I write the line?",0);
5 var ct=1;
6 do
7   {
8     document.write("This is number " + ct + "<br>");
9     ct = ct + 1;
10  }while (ct <= data_input) condition at the bottom with the while.
11 document.write("<br>" + "This is the end!!!")
12 </script>
13 </html>
```

Always do once

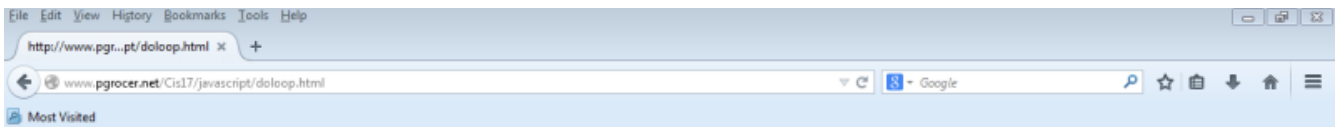


This is the end!!!

```
Source of: http://www.pgrocer.net/Cis17/javascript/whileloop.html - Mozilla Firefox
File Edit View Help
1 <html>
2 <script type="text/javascript">
3 var data_input = 0;
4 data_input=prompt("How many times should I write the line?",0);
5 var ct=1;
6 while (ct <= data_input)
7 {
8     document.write("This is number " + ct + "<br>");
9     ct = ct + 1;
10 }
11 document.write("<br>" + "This is the end!!!")
12 </script>
13 </html>
```

I entered 0 for data_input.

ct is 1 so it is not less then or equal to the 0 in data_input so the loop is not entered and the line after the loop is written.



This is number 1

This is the end!!!

```
Source of: http://www.pgrocer.net/Cis17/javascript/doloop.html - Mozilla Firefox
File Edit View Help
1 <html>
2 <script type="text/javascript">
3 var data_input = 0;
4 data_input=prompt("How many times should I write the line?",0);
5 var ct=1;
6 do
7 {
8   document.write("This is number " + ct + "<br>");
9   ct = ct + 1;
10 }while (ct <= data_input) The check happened after I executed.
11 document.write("<br>" + "This is the end!!!")
12 </script>
13 </html>
```

I entered a 0 for data_input.

do... while