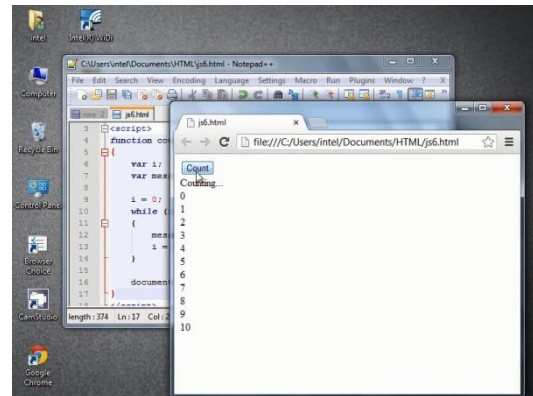


# Using the 'while' loop in JavaScript

In this sixth video, Steve extends your understanding of conditionals even further by demonstrating how to do looping, where the code makes a process repeat (for example, counting) until something tells it to stop. For this, the syntax to use is 'for' and 'while'. In this video, Steve demonstrates the 'while' loop.

This is complex code, so the best way to do this is to watch the video all the way through so you understand how the different syntax works. Steve is going to create a simple counting script which will count from 0 to 10. When you have watched it through once (or more, if you want!), then work through this document step by step to create the code.

You will need to create new code for this, so open up Notepad++ and follow the step by step guide below to start using looping.



## Step 1: Starting the code (video start to 1.00)

Watch the video for one minute and then pause it whilst you create the code to match Steve's.

Steve is creating a script that will count and the code so far has defined the button and its value, and what happens when it is clicked. When your code matches Steve's (and the screenshot on the right), restart the video.

```

1 <html>
2 <head>
3 <script>
4 </script>
5 </head>
6 <body>
7 <input type="button" value="Count" onclick="count()" />
8 <div id="countArea">
9 </div>
10 </body>
11 </html>
12

```

## Step 2: Producing the function to count (video 01.00 – 02.03)

In this next step, Steve types into the script section the function syntax. He defines the variable i and the message (Counting...). Add this code to your Notepad++ document, not forgetting the break tag (<br>). It should look like the screenshot on the right. Check your code is accurate before moving on.

```

1 <html>
2 <head>
3 <script>
4 function count()
5 {
6     var i;
7     var message = "Counting...<br>";
8
9     |
10 </script>
11 </head>
12 <body>
13 <input type="button" value="Count" onclick="count()" />
14 <div id="countArea">
15 </div>
16 </body>
17 </html>
18

```

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### Step 3: Defining the variable 'i' and using the 'while' command (Video 02.04 – 02.43)

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In this next step, Steve adds code that starts the count from 0 and inserts the 'while' command. The use of 'while' needs a definition – that is, how long is while! So Steve defines 'while' to be as long as 'i' is less than or equal to 10. He adds some additional code to define the message. Add this code to your Notepad++ before moving on – it should look like the screenshot on the right.

```
1 <html>
2 <head>
3 <script>
4   function count()
5   {
6     var i;
7     var message = "Counting...<br>;
8
9     i = 0;
10    while (i <= 10)
11    {
12      message = message + i + "<br>"
13    }
14  }
15 </script>
16 </head>
17 <body>
18   <input type="button" value="Count" onclick="count()" />
19   <div id="countArea">
20 </div>
21 </body>
22 </html>
```

### Step 4: Defining how the count loop works (Video 02.44 – 03.30)

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Steve now defines how the counting happens, by inserting the code that adds 1 to 'i' for each time the loop goes around.

He also defines where he wants the count to appear, inside the count area. By adding this additional code, he now has a loop that counts from 0 to 10 and presents the count in the specified part of the page.

Add this code to your Notepad++ so it looks like Steve's, and the screenshot on the right. Double check it – make sure, for example, you close the curly bracket and then save the code.

```
1 <html>
2 <head>
3 <script>
4   function count()
5   {
6     var i;
7     var message = "Counting...<br>;
8
9     i = 0;
10    while (i <= 10)
11    {
12      message = message + i + "<br>";
13      i = i + 1;
14    }
15    document.getElementById("countArea").innerHTML = message;
16  }
17 </script>
18 </head>
19 <body>
20   <input type="button" value="Count" onclick="count()" />
21   <div id="countArea">
22 </div>
23 </body>
24 </html>
```



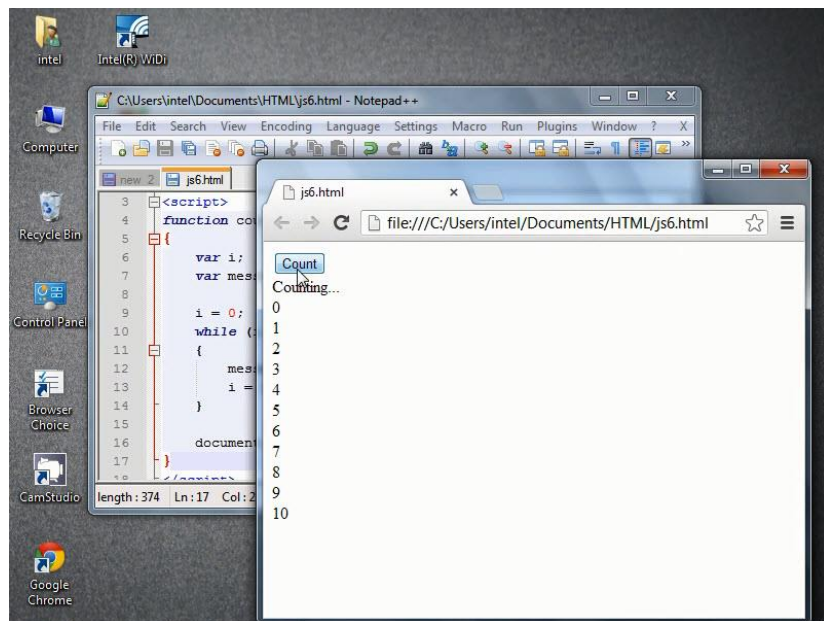
## Step 5: Going through the code to understand how it all works (Video 03.31 – 04.15)

Follow Steve as he goes through the code, to explain exactly what it is meant to do. Remember that the 'while' command will only run when certain conditions are met – in this case, it's the condition that 'i' is less than or equal to 10. Once 'i' is greater than 10, the while loop will stop. Save your code.

## Step 6: Running the script (Video 04.16 to end)

Running the code in Chrome generates a button which, when clicked, provides the count from 0 to 10 on different lines – that was the reason why Steve included the <br> tag so that each count appears on a separate line.

He challenges you to make the count appear on one line, by removing the <br> tag. Try it! And also try counting in twos (changing the 'i' value to  $i = i + 2$ ) or counting to 20.



**Well done – you have managed to create your first 'while' loop. Take a screenshot of your code, and the published page (after the button has been clicked) and insert it into your Student Log.**