

## JavaScript Assignment #1

You need to write the pseudocode or draw the flowchart for the problems you need to solve. Pass in the pseudocode or flowchart along with the JavaScript that I can run.

**Problem #1:** Take in the customer's food charges and their beverage charges. Add them together to get the total before tax. Calculate the tax (use 5.2%) and give the price after taxes. Now calculate the tip (you are tipping at 15%) and add that to the total. Display three outputs: Bill before taxes, bill including taxes, bill including taxes and tip.

**Problem #2:** You have played a game 3 times and have your scores. You need to reach 1000 after the next game. Take in the game scores and determine the score you need to make to reach 1000.

**Problem #3:** You have received 4 numeric grades for the semester. Grades can range from 0 to 100. The first grade counts for 15% of your final grade. The second grade counts for 25% of your final grade. The third grade counts for 20% of your final grade. The fourth grade counts for 40% of your final grade. Calculate and display your final numeric grade. Display the letter grade as well.

**Problem #4:** You need to take in the height, width and depth of the box and calculate the volume by multiplying them together. The base cost is \$5. If the volume is greater 50 then you want to add \$20 to the base cost otherwise you want to add \$10 to the base cost. Display the cost.

**Problem #5:** You need to calculate an employees pay. To do this you will need to take in the following four inputs:

1. the number of hours the employee worked <sup>50</sup>
2. the number of hours the employee is contracted to work before the employee receives overtime (for example, the employee might be contracted to work 40 hours and only receives overtime for hours over 40) <sup>40</sup>
3. the pay per hour <sup>20</sup>
4. the rule for calculating over time (time and one half would be 1.5 while double time would be 2) <sup>2 1.5</sup>

As part of the code you write, you should ask a question to determine if the employee worked over their contracted hours and then calculate the appropriate pay. Test this problem with information about an employee who did not work over their contracted hours and again for an employee who did work over their contracted hours. See if they both work.



50 wrk

40 contract

20 pay hr

2 out

If wrk > contracted

$$\begin{array}{r} 50 \\ -40 \\ \hline 10 \end{array}$$

reg pay

800

Out pay

$$10 \times 2 \times 20$$

400

tot  
1200

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SMART Ink

JavaScript Assignment #1

www.pgrocer.net/CIS120/firstJSOct17.html

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3. the pay per hour
4. the rule for calculating over time (time and one half would be 1.5 while double time would be 2)

As part of the code you write, you should ask a question to determine if the employee worked over their contracted hours and then calculate the appropriate pay. Test this problem with information about an employee who did not work over their contracted hours and again for an employee who did work over their contracted hours. See if they both work.

300, 200, 100  
-600  
400  
600

Windows Taskbar: Search, File Explorer, Edge, Word, System tray: 12:47 PM, 10/24/2017, Notification

```
var playerTwoEntry = 0;
var contProg = "Y";
while (contProg == "Y")
{
    playerOneEntry = parseInt(window.prompt("Enter the points player one earned",0));
    playerTwoEntry = parseInt(window.prompt("Enter the points player two earned",0));
    playerOneTotal = playerOneTotal + playerOneEntry;
    playerTwoTotal = playerTwoTotal + playerTwoEntry;
    contProg = window.prompt("Do you want to play again Y or N?" "");
}
document.write("The total for player one is: " + playerOneTotal);
document.write("<br>");
document.write("The total for player two is: " + playerTwoTotal);
if (playerOneTotal > playerTwoTotal)
{
    document.write("<br>Player One wins");
}
else
{
    if (playerOneTotal == playerTwoTotal)
    {
        document.write("<br>Tie");
    }
    else
    {
        document.write("<br>Player Two wins");
    }
}
}
```

Hand-drawn blue annotations on the code:

- A diamond shape at the top contains 'N' on the left, 'Y' on the right, and 'PI' above 'P2'.
- A box labeled 'P1 won' is connected to the 'N' branch.
- A box labeled 'Tie' is connected to the 'PI = P2' branch.
- A box labeled 'P2 won' is connected to the 'Y' branch.



File Edit View History Bookmarks Tools Help SMART Ink

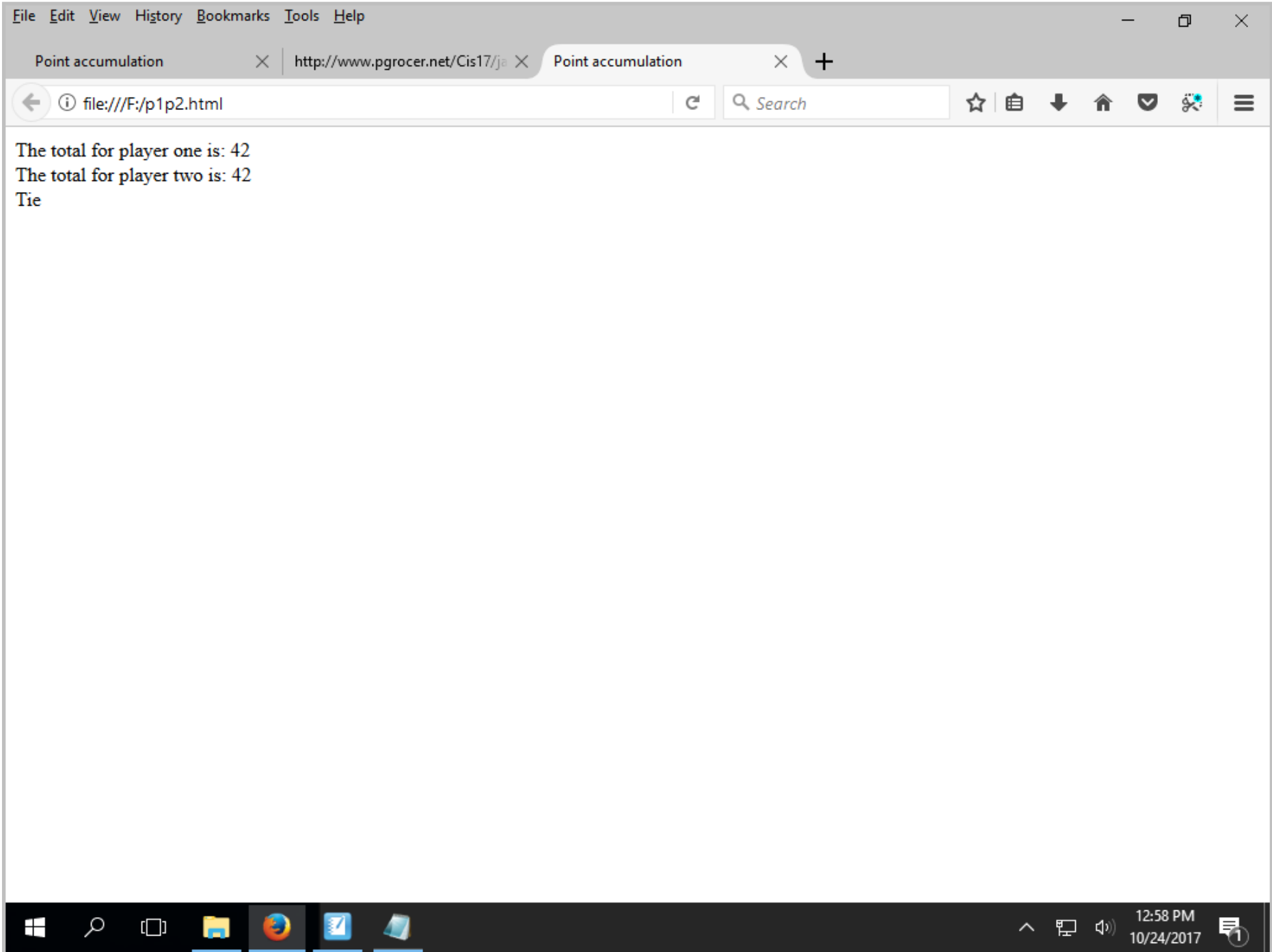
Point accumulation × http://p1p2 - Notepad

file:///F:/p1p2.html

The total for player one is: 56  
The total for player two is: 46  
Player One wins

```
File Edit Format View Help
var playerTwoEntry = 0;
var contProg = "Y";
while (contProg == "Y")
{
    playerOneEntry = parseInt(window.prompt("Enter the points player one e
    playerTwoEntry = parseInt(window.prompt("Enter the points player two e
    playerOneTotal = playerOneTotal + playerOneEntry;
    playerTwoTotal = playerTwoTotal + playerTwoEntry;
    contProg = window.prompt("Do you want to play again, Y or N?", "");
}
document.write("The total for player one is: " + playerOneTotal);
document.write("<br>");
document.write("The total for player two is: " + playerTwoTotal);
if (playerOneTotal > playerTwoTotal)
{
    document.write("<br>Player One wins");
}
else
{
    if (playerOneTotal == playerTwoTotal)
    {
        document.write("<br>Tie");
    }
    else
    {
        document.write("<br>Player Two wins");
    }
}
}
```

Windows taskbar: 12:57 PM 10/24/2017



Control ct

Set ct

$ct = 1$

Check ct

$ct \leq 5$

Change ct

$ct = ct + 1$

---

Control totalamt

Set totalamt  $totalamt = 0$

Check totalamt  $totalamt > 500$

Change totalamt

$totalamt = totalamt + amt$

Different ways of controlling  
a loop

User

Set contProg

$contProg = "Y"$

Check contProg

$contProg == "Y"$

Change contProg

User prompt to  
enter value



File Edit View History Bookmarks Tools Help SMART Ink


CIS This is a math facts program X +

cisweb.bristolcc.edu/~pgrocer/CIS120/JSk

### Math Facts

1 + 1 = 2  
2 + 2 = 4  
3 + 3 = 6

### The end of the math facts



```
File Edit Format View Help
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var ct = 1;
while (ct <= 3) ans = 0;
{
  ans = ct + ct;
  document.write(ct + " + " + ct + " = " + ans + "<br />");
  ct = ct + 1;
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>
```

*Handwritten notes in blue and green ink:*

- ans = 0;* (written in blue, underlined)
- ct* (written in blue above a vertical line)
- ans* (written in blue above a vertical line)
- 1 + 1 = 2* (written in blue)
- 2*, *3*, *4* (written in green below the vertical lines)

File Edit View History Bookmarks Tools Help

CIS This is a math facts program X http://cisweb.bristolcc.edu/~pgrocer/CIS12

### Math Facts

1+1=2  
1+2=3  
1+3=4  
2+1=3  
2+2=4  
2+3=5  
3+1=4  
3+2=5  
3+3=6

*Handwritten:* ct, ctin, ans

### The end of the math facts

Untitled - Notepad

File Edit Format View Help

```

<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var ct = 1;
var ctin;
while (ct <= 3)
{
  ctin = 1;
  while (ctin <= 3)
  {
    ans = ct + ctin;
    document.write(ct + "+" + ctin + "=" + ans + "<br />");
    ctin = ctin + 1;
  }
  ct = ct + 1;
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>

```

*Handwritten:* Drop down results

<u>ct</u>	<u>ctin</u>	<u>ans</u>
1	1	2
1	2	3
1	3	4
2	1	3
2	2	4
2	3	5
3	1	4
3	2	5
3	3	6

Windows Taskbar: Search, File Explorer, Internet Explorer, Notepad, Taskbar icons

1:22 PM  
10/24/2017

File Edit View History Bookmarks Tools Help

SMART Ink

CIS This is a math facts program X http://cisweb.bristolcc.edu/~pgrocer/CIS120/JSloop/jsdowhile. X

view-source:http://cisweb.bristolcc.edu/~pgrocer/CIS120/JSloop/jsdowhile. Search

```
1 <html>
2 <head>
3 <title>This is a math facts program</title>
4 </head>
5 <body>
6 <h2>Math Facts</h2>
7 <script type="text/javascript">
8 var ct = 1;
9 do
10 {
11   ans = ct + ct;
12   document.write(ct + " + " + ct + " = " + ans + "<br />");
13   ct = ct + 1;
14 } while (ct <= 3)
15 </script>
16 <h2>The end of the math facts</h2>
17 </body>
18 </html>
```

Windows taskbar: 1:23 PM 10/24/2017

File Edit View History Bookmarks Tools Help SMART Ink

CIS This is a math facts program X http://cisweb.bristolcc.edu/~pgrocer/CIS120/JSloop/jsdowhile: X http://cisweb.bristolcc.edu/~pgrocer/CIS120/JSloop/jsdowhile: X +

view-source:http://cisweb.bristolcc.edu/~pgrocer/CIS120/JSloop/jsdowhile: Search

```
1 <html>
2 <head>
3 <title>This is a math facts program</title>
4 </head>
5 <body>
6 <h2>Math Facts</h2>
7 <script type="text/javascript">
8   var ct = 1;
9   var ctin;
10  do
11  {
12    ctin = 1;
13    do
14    {
15      ans = ct + ctin;
16      document.write(ct + "+" + ctin + "=" + ans + "<br />");
17      ctin = ctin + 1;
18    } while (ctin <= 3)
19    ct = ct + 1;
20  } while (ct <= 3)
21 </script>
22 <h2>The end of the math facts</h2>
23 </body>
24 </html>
```

Windows taskbar: 1:24 PM 10/24/2017

Untitled - Notepad

File Edit Format View Help

```
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var ct = 1;
var ctin;
while (ct <= 3)
{
  ctin = 1;
  while (ctin <= 3)
  {
    ans = ct + ctin;
    document.write(ct + "+" + ctin + "=" + ans + "<br />");
    ctin = ctin + 1;
  }
  ct = ct + 1;
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>
```

```
graph TD
  Start([Start]) --> Init[ct=1]
  Init --> Cond1{ct <= 3}
  Cond1 -- N --> End([End])
  Cond1 -- Y --> Init2[ctin=1]
  Init2 --> Cond2{ctin <= 3}
  Cond2 -- N --> Inc1[ct = ct + 1]
  Inc1 --> Cond1
  Cond2 -- Y --> Calc[ans]
  Calc --> Write[/write/]
  Write --> Inc2[ctin + 1]
  Inc2 --> Cond2
```

Untitled - Notepad

File Edit Format View Help

```
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var i;
for (i=1; i<=3; i=i+1)
{
  ans = i + i;
  document.write(i + "+" + i + "=" + ans + "<br />");
}
</script>
<h2>The end of the math facts</h2>
</body>
```

*Set* *check* *change*

SMART Ink

Windows taskbar: 1:29 PM 10/24/2017

The image shows a Windows desktop environment. In the foreground, a Notepad window titled "forloop - Notepad" is open, displaying the following code:

```
File Edit Format View Help
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var i;
for (i=2; i<=12; i=i+2)
{
  ans = i + i;
  document.write(i + "+" + i + "=" + ans + "<br />");
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>
```

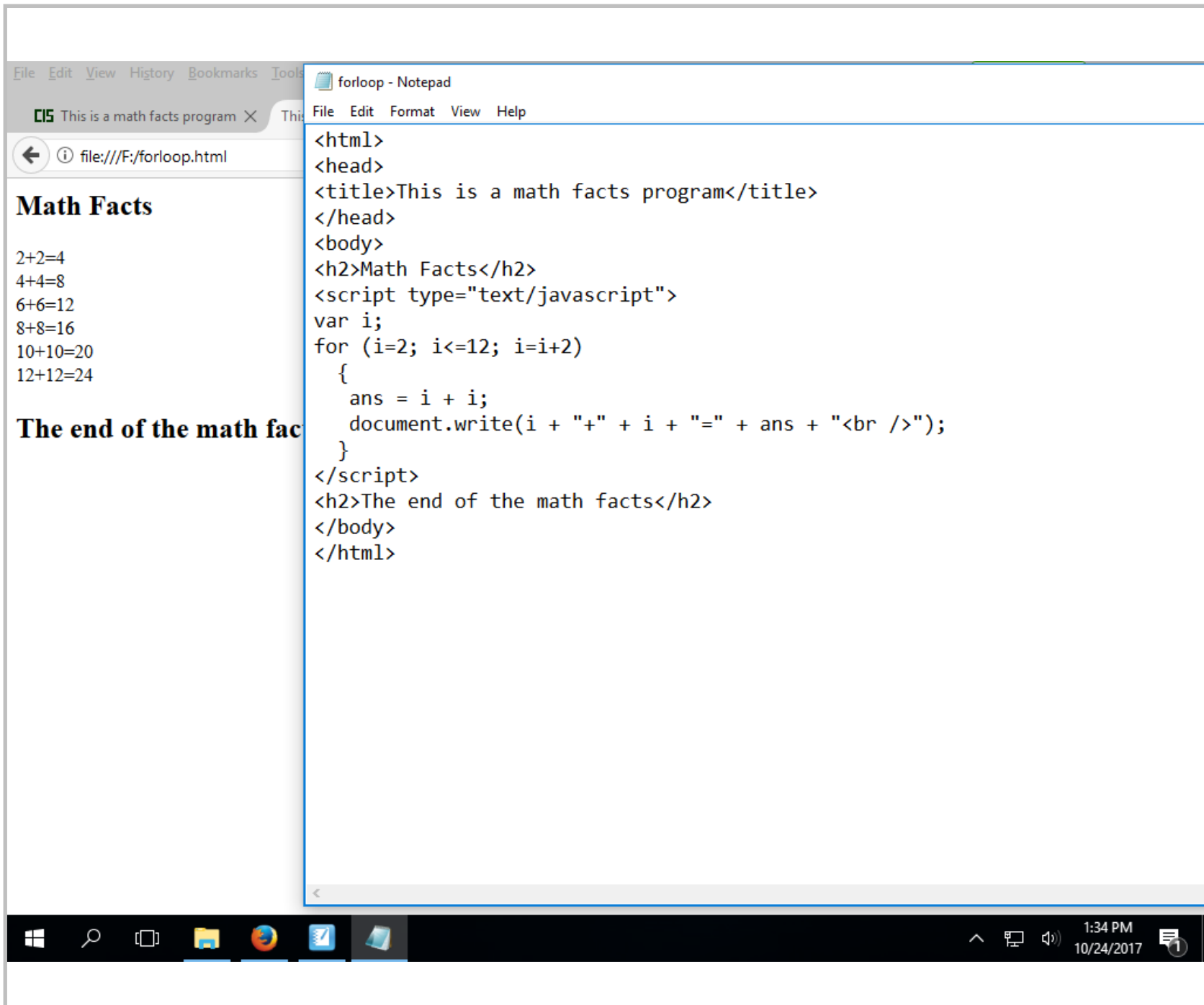
In the background, a browser window is open to the file "file:///F:/forloop.html". The browser displays the rendered output of the code:

**Math Facts**

2+2=4  
4+4=8  
6+6=12  
8+8=16  
10+10=20  
12+12=24

**The end of the math facts**

The Windows taskbar at the bottom shows the system tray with the time 1:32 PM and date 10/24/2017.





The image shows a Windows desktop environment. In the foreground, a Notepad window titled "forloop - Notepad" is open, displaying the following code:

```
File Edit Format View Help
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var i;
for (i=12; i>0; i=i-2)
{
  ans = i + i;
  document.write(i + "+" + i + "=" + ans + "<br />");
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>
```

In the background, a browser window is open to the file "file:///F:/forloop.html". The browser's address bar shows the file path. The page content includes:

**Math Facts**

12+12=24  
10+10=20  
8+8=16  
6+6=12  
4+4=8  
2+2=4

**The end of the math facts**

The Windows taskbar at the bottom shows the Start button, search icon, task view icon, and several application icons (File Explorer, Internet Explorer, Notepad, and another Notepad instance). The system tray on the right shows the time as 1:37 PM on 10/24/2017 and a notification icon with a '1'.

Untitled \* - SMART Notebook

Untitled - Notepad

File Edit Format View Help

```
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var i;
for (i=1; i<=3; i=i+1)
{
  for (j = 1; j <= 3; j = j + 1)
  {
    ans = i + j;
    document.write(i + " + " + j + " = " + ans + "<br />");
  }
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>
```

*goes back*

*Set i & j happens first time*

SMART Ink

1:39 PM 10/24/2017

Untitled \* - SMART Notebook

Untitled - Notepad

File Edit Format View Help

```
<html>
<head>
<title>This is a math facts program</title>
</head>
<body>
<h2>Math Facts</h2>
<script type="text/javascript">
var i;
for (i=1; i<=3; i=i+1)
{
  for (j = 1; j <= 3; j = j + 1)
  {
    ans = i + j;
    document.write(i + " * " + j + " = " + ans + "<br />");
  }
}
</script>
<h2>The end of the math facts</h2>
</body>
</html>
```

*outer loop*

*inner loop*

*goes back*

*Set i, j happens first time*

SMART Ink

1:40 PM 10/24/2017