JavaScript Essentials

Assignments

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RECORD OF CHANGES

No	Effective Date	Change Description	Reason	Reviewer	Approver
1	25/Jun/2018	Create a new Lab	Create new	DieuNT1	VinhNV
2	01/May/2019	Update Fsoft Template	Update	DieuNT1	VinhNV

Contents

CODE:	JS-E.M.A301
TYPE:	Medium
LOC:	N/A
DURATION:	60 MINUTES

Unit 3 – Numbers

Objectives:

- ✓ Able to apply Basic math in JavaScript with numbers and arithmetic operators

Project Structure

- Create a new folder called **JS-E.M.A301** (this will be your top folder)
- Create folder **problem1** inside top folder and put every file related to this problem inside
- Create folder **problem2** inside top folder and put every file related to this problem inside
- Create folder **problem3** inside top folder and put every file related to this problem inside

Problem 1:

Let's start out by testing your knowledge of basic math operators. You will have to create four numeric values, then add the first two together, then subtract the fourth from the third, then multiply the two secondary results together to get a result of 48. Finally, we need to write a test that proves that this value is an even number.

So, try updating the live code below to recreate the finished example, following these steps:

1. Create four variables that contain numbers. Call the variables something sensible.
2. Add the first two variables together and store the result in another variable.
3. Subtract the fourth variable from the third and store the result in another variable.
4. Multiply the results from the last two steps together, storing the result in a variable called finalResult. The product should be 48. If it isn't, you'll have to adjust some of the initial input values.
5. Finally, write a calculation that checks whether finalResult is an even number. Store the result in a variable called evenOddResult.

Try updating the code below to recreate the Expected output:

```
1.      let finalResult;
2.      let evenOddResult;
3.
4.      // Add your code here
5.
6.      // Don't edit the code below here!
7.
8.      const section = document.querySelector('section');
9.
10.     let para1 = document.createElement('p');
11.     let finalResultCheck = finalResult === 48 ? `Yes, well done!` : `No, it is ${
    finalResult }`;
12.     para1.textContent = `Is the finalResult 48? ${ finalResultCheck }`;
13.     let para2 = document.createElement('p');
14.     let evenOddResultCheck = evenOddResult === 0 ? 'The final result is even!' : 'The
    final result is odd. Hrm.'
15.     para2.textContent = evenOddResultCheck;
16.
17.     section.appendChild(para1);
18.     section.appendChild(para2);
```

Expected output:

```
Is the finalResult 48? Yes, well done!
The final result is even!
```

Problem 2:

In the second task you are already provided with two calculations, with the results stored in the variables result and result2. But these results aren't what we want; you'll need to take the calculations and change them to give us what we want.

What do we want? After multiplying the two results together and formatting the result to 2 decimal places, the final result should be 10.42.

Try updating the live code below to recreate the finished example, following these steps:

1. Write a calculation that multiples result and result2 together and assigns the result back to result. This will require assignment shorthand.
2. Write a line of code that takes result and formats it to 2 decimal places, storing the result of this in a variable called finalResult.
3. Check the data type of finalResult using typeof; you'll probably see that it is actually of string type! Write a line of code that converts it to a number type, storing the result in a variable called finalNumber.
4. The value of finalNumber needs to be 10.42. Go back and update the original calculations you were provided with so that they give this final result. Don't update the numbers or the operators.

Try updating the code below to recreate the Expected output:

```
1.      // Final result should be 10.42
2.      // Add/update your code here
3.
4.      let result = 7 + 13 / 9 + 7;
5.      let result2 = (100 / 2) * 6;
6.
7.      // Don't edit the code below here!
8.
9.      const section = document.querySelector('section');
10.
11.     let para1 = document.createElement('p');
12.     para1.textContent = `Your finalResult is ${finalResult}`;
13.     let para2 = document.createElement('p');
14.     let finalNumberCheck =
15.       isNaN(finalNumber) === false
16.         ? 'finalNumber is a number type. Well done!'
17.         : `Ooops! finalNumber is not a number.`;
18.     para2.textContent = finalNumberCheck;
19.
20.     section.appendChild(para1);
21.     section.appendChild(para2);
```

Expected output:

```
Your finalResult is 10.42
finalNumber is a number type. Well done!
```

Problem 3:

In the final task for this article, we want you to write some tests. You've got three groups, each consisting of a statement and two variables. For each one, write a test that proves or disproves the statement made. Store the results of those tests in variables called `weightComparison`, `heightComparison`, and `pwdMatch`, respectively.

Try updating the code below to recreate the Expected output:

```
1.      // Statement 1: The elephant weights less than the mouse
2.      let eleWeight = 1000;
3.      let mouseWeight = 2;
4.
5.      // Statement 2: The Ostrich is taller than the duck
6.      let ostrichHeight = 2;
7.      let duckHeight = 0.3;
8.
9.      // Statement 3: The two passwords match
10.     let pwd1 = 'stromboli';
11.     let pwd2 = 'stROmBoLi'
12.
13.     // Add your code here
14.
15.     // Don't edit the code below here!
16.
17.     const section = document.querySelector('section');
18.
19.     let para1 = document.createElement('p');
20.     let para2 = document.createElement('p');
21.     let para3 = document.createElement('p');
22.
23.     let weightTest = weightComparison ? 'True — elephants weight less than mice!?' : 'False —
    of course an elephant is heavier than a mouse!';
24.     let heightTest = heightComparison ? 'True — an ostrich is indeed taller than a duck!' :
    'False — apparently a duck is taller than an ostrich!?';
25.     let pwdTest = pwdMatch ? 'True — the passwords match.' : 'False — the passwords do not
    match; please check them';
26.
27.     para1.textContent = weightTest;
28.     section.appendChild(para1);
29.     para2.textContent = heightTest;
30.     section.appendChild(para2);
31.     para3.textContent = pwdTest;
32.     section.appendChild(para3);
```

Expected output:

> False — of course an elephant is heavier than a mouse!
>
> True — an ostrich is indeed taller than a duck!
>
> False — the passwords do not match; please check them

-- THE END --