

## Session 3 Homework

### Code For Everyone JavaScript



### Study

#### 1. Variable swap

Swapping variable is to exchange the values of two variable so that at the end, one variable contains the value of the other

For example:

```
let a = 5;
let b = 6;
console.log(a, b); // Result: 5 6
```

<Perform swapping>

```
console.log(a, b); // Result: 6 5
```

Google 'JS swap variables' to learn about at least **2 ways** to perform this task, write at least **2 examples** to demonstrate you have acquired them, if you need hints, they are at the last page of this homework

#### 2. Split String into Array

Using type conversion from String to Array

```
const s = 'Hello beauty there';
const a = Array(s);
console.log(a); // Result: ["Hello beauty there"]
```

Might NOT be what a developer expects; sometimes what they really want is

```
const s = 'Hello beauty there';
```

<Perform splitting>

```
console.log(a); // Result: ["Hello", "beauty", "there"]
```

Google 'JS String splitting to Array' to learn how to perform this task.  
Write an example to demonstrate your learning. If you need hints, again, they are at the last page of this homework

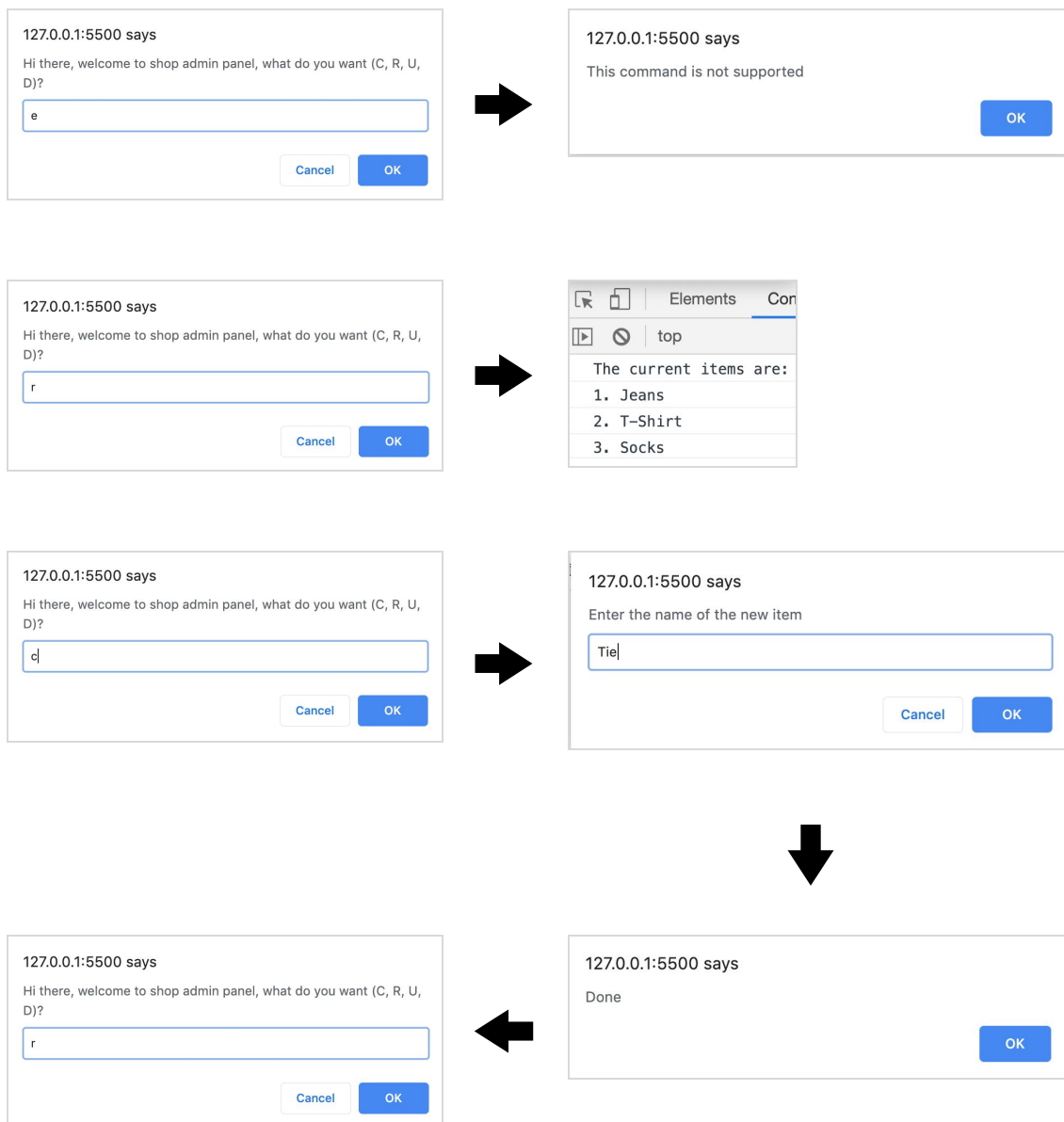
3. In JavaScript, the spread operator (three dots): ... can be useful in several tasks. Of these tasks is to log (print out) an array without using loops, try it:

```
const a = [4, 5, 7, -8];  
console.log(...a);
```



## Review

4. Write a script to simulate a clothes shop, asking and performing certain tasks from users





| The current items are: |         |
|------------------------|---------|
| 1.                     | Jeans   |
| 2.                     | T-Shirt |
| 3.                     | Socks   |
| 4.                     | Tie     |

127.0.0.1:5500 says

Hi there, welcome to shop admin panel, what do you want (C, R, U, D)?



127.0.0.1:5500 says

Enter the position you want to update



127.0.0.1:5500 says

Done



127.0.0.1:5500 says

Enter the new name

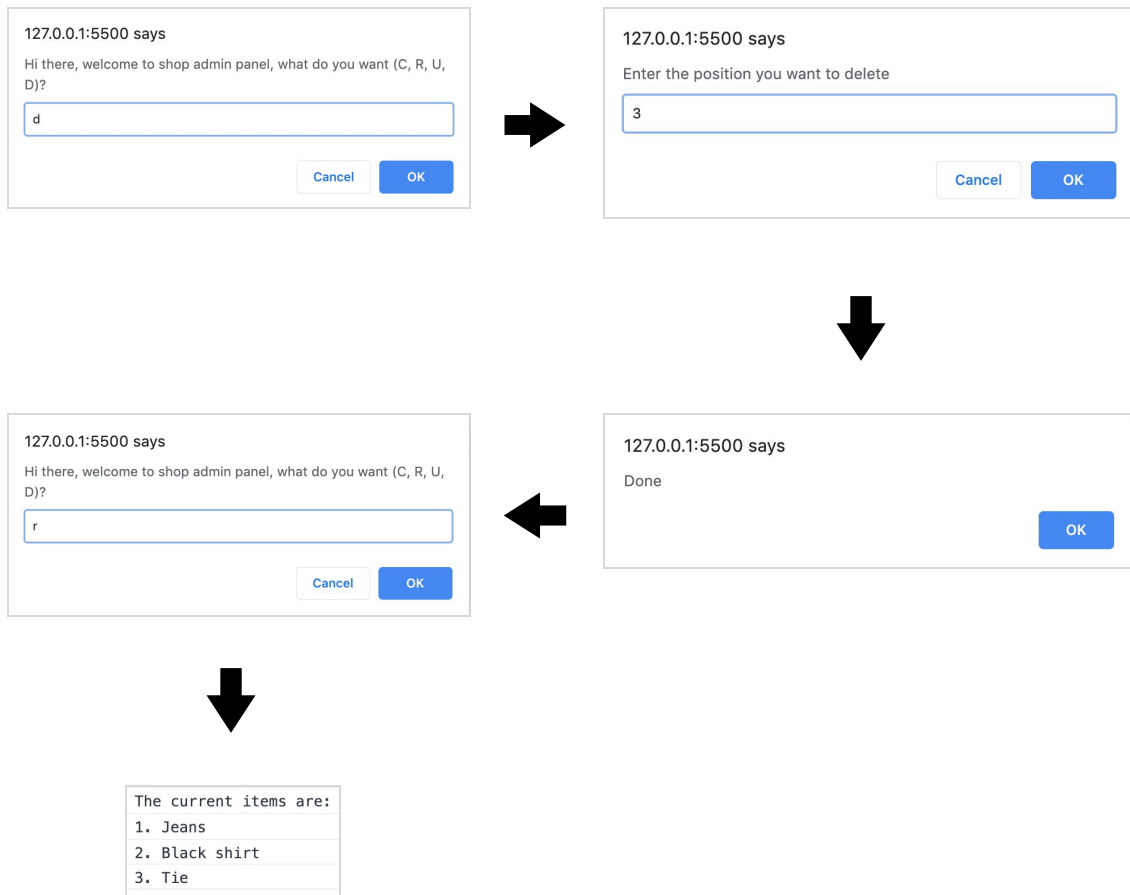


127.0.0.1:5500 says

Hi there, welcome to shop admin panel, what do you want (C, R, U, D)?



| The current items are: |             |
|------------------------|-------------|
| 1.                     | Jeans       |
| 2.                     | Black shirt |
| 3.                     | Socks       |
| 4.                     | Tie         |



*Note: If you want, though optional, you can make it more interesting by using `alert` instead of `console.log` to list the shop items*



## Serious exercises

5. Write a script to ask users enter a sequence of numbers, the Numbers are separated by commas, calculate the sum of the numbers and show it to users

127.0.0.1:5500 says

Enter a sequence of Number, separated by commas (,)

Cancel OK



127.0.0.1:5500 says

The sum of them is 30

OK

6. Write a script asking users to enter a sequence of numbers, the numbers are separated by commas, find the smallest number and log it out to users

127.0.0.1:5500 says

Enter a sequence of numbers, separated by ","

Cancel OK



127.0.0.1:5500 says

The smallest number is -9

OK


7. Create an array containing at least 5 numbers, then ask users enter a number, perform a search to look for the number in the array, if the number is found, tell user that with the index of it in the array, if not, also tell them so

```
const arr = [3, 4, 6, -9, 10, -88, 2];
```

127.0.0.1:5500 says

Enter a number

Cancel OK



127.0.0.1:5500 says


88 is NOT found in my array

OK

127.0.0.1:5500 says

Enter a number

Cancel OK

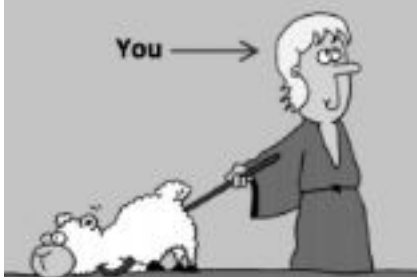


127.0.0.1:5500 says

-9 is FOUND in my array at index 3

OK

8. You are a shepherd who owns a flock of sheep



Each of your sheep of your flock has different sizes:



- 8.1. Create an array to represent the sizes of your flock, and log all of your flock size, expected screen output:

```
Hello, my name is Phuong Nam and here is my sheep sizes:  
5 7 300 90 24 50 75
```

- 8.2. At the end of each month, you have to choose one and only one sheep to shear and thus you want to choose the biggest one to maximize your profit. Write a program to search for the biggest sheep in your list:  
Hint: Google `'JS Array find max'`

```
Hello, my name is Phuong Nam and here is my sheep sizes:  
5 7 300 90 24 50 75  
  
Now my biggest sheep has size 300, let's shave it
```

- 8.3. When your biggest shear, its size will return to the default size, which is 8.  
Hint: Google `'JS Array indexOf'`

|  |
|--|
| Hello, my name is Phuong Nam and here is my sheep sizes: |
| 5 7 300 90 24 50 75                                      |
| Now my biggest sheep has size 300, let's shave it        |
| After shearing, here is my flock                         |
| 5 7 8 90 24 50 75  |

- 8.4. In the following month, EVERY sheep in your flock grow, they have their size increased by 50. Log them out

|   |
|---|
| Hello, my name is Phuong Nam and here is my sheep sizes:          |
| 5 7 300 90 24 50 75   |
| Now my biggest sheep has size 300, let's shave it                 |
| After shearing, here is my flock                                  |
| 5 7 8 90 24 50 75   |
| MONTH 1   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 55 57 58 140 74 100 125   |

- 8.5. Let's do this for 4 months (or as long as you want)



|   |
|---|
| Hello, my name is Phuong Nam and here is my sheep sizes:          |
| 5 7 300 90 24 50 75   |
| Now my biggest sheep has size 300, let's shave it                 |
| After shearing, here is my flock                                  |
| 5 7 8 90 24 50 75   |
| MONTH 1   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 55 57 58 140 74 100 125   |
| Now my biggest sheep has size 140, let's shave it                 |
| After shearing, here is my flock                                  |
| 55 57 58 8 74 100 125   |
| MONTH 2   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 105 107 108 58 124 150 175  |
| Now my biggest sheep has size 175, let's shave it                 |
| After shearing, here is my flock                                  |
| 105 107 108 58 124 150 8  |
| MONTH 3   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 155 157 158 108 174 200 58  |

- 8.6. After day by day shearing sheep, you became bored. You want to sell your flock to travel the world. In order to have fair trade, you must now calculate the total size of your sheep and then the expected money you can get from selling your flock, before going to the market. Write a program to calculate the total size of your sheep as well as the money you would have. Expected console output:

|   |
|---|
| Hello, my name is Phuong Nam and here is my sheep sizes:          |
| 5 7 300 90 24 50 75   |
| Now my biggest sheep has size 300, let's shave it                 |
| After shearing, here is my flock                                  |
| 5 7 8 90 24 50 75   |
| MONTH 1   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 55 57 58 140 74 100 125   |
| Now my biggest sheep has size 140, let's shave it                 |
| After shearing, here is my flock                                  |
| 55 57 58 8 74 100 125   |
| MONTH 2   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 105 107 108 58 124 150 175  |
| Now my biggest sheep has size 175, let's shave it                 |
| After shearing, here is my flock                                  |
| 105 107 108 58 124 150 8  |
| MONTH 3   |
| One month has, passed, my sheeps have grown, here are their sizes |
| 155 157 158 108 174 200 58  |
| My flock has size in total: 1010                                  |
| I would get 1010 * 2\$ = 2020                                     |

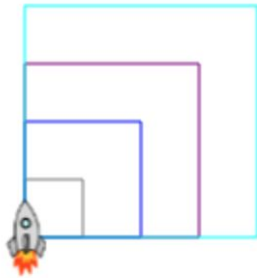


## Turtle exercices

9. Given the array

```
const colors = ['red', 'gray', 'blue', 'purple', 'cyan'];
```

Use [JS Turtle](#), to draw the following shapes





## Nice-to-do

10. (Optional) Write a script asking users to enter a sequence of names, separated by commas (,), Create a new array containing the name surrounded with <>. If you need hints, they are at the end of this homework

The diagram illustrates the process of converting user input into a JavaScript array. On the left, a dialog box titled '127.0.0.1:5500 says' prompts the user to 'Enter a sequence of names'. The input field contains the text 'Phuong Nam, H.Duc, Huyen, Tai'. Below the input field are 'Cancel' and 'OK' buttons. A large black arrow points to the right, where the resulting array is displayed. The array is shown as 'Phuong Nam, H.Duc, Huyen, Tai => <Phuong Nam>,< H.Duc>,< Huyen>,< Tai>'. An 'OK' button is located at the bottom right of this display.

11. (Optional) Write a script asking users to enter a sequence of Numbers, separated by commas (,). Create a new array containing only the odd Numbers of the entered sequence. If you need hints, they are at the end of this homework

The diagram illustrates the process of converting user input into a JavaScript array and then filtering it. On the left, a dialog box titled '127.0.0.1:5500 says' prompts the user to 'Enter a sequence number'. The input field contains the text '4, 5, 7, 90, 12, 33, 21'. Below the input field are 'Cancel' and 'OK' buttons. A large black arrow points to the right, where the resulting array is displayed. The array is shown as '4, 5, 7, 90, 12, 33, 21 => 5, 7, 33, 21'. An 'OK' button is located at the bottom right of this display.



## Hints

## Study

### 1. Variable swap

First, check these links:

- [Stackoverflow - How to swap 2 variables](#)
- [Medium - how to swap 2 variables without using temporary variables](#)

If you still get stuck, remember that your mentor is always be there to help :D

### 2. String splitting

First, check this link:

- <https://stackoverflow.com/questions/2858121/how-to-convert-a-comma-separated-string-to-an-array>

If you still get stuck, remember that your mentor is always be there to help :D

## Nice-to-do

### 10. There are at least 2 ways to do it

10.1. Create a different, empty array, loop through all the items in the old array, surround the item with <> pair and then push the result into the newly created array

10.2. Use JavaScript [Array map function](#)

### 11. There are at least 2 ways to do it

11.1. Create a different, empty array, loop through all the items in the old array, if the item is odd, push it into the newly created array

11.2. Use JavaScript [Array filter function](#)