Web Programming

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Lab 6

JavaScript Fundamentals

Data Types and Variables

Operators and Expressions

Loops

Arrays

Problem 1. Quoted text

Create a string variable with quoted text in it. For example: 'How you doing'?', Joey said'.

Problem 2. Parsing numbers

Try parsing the following strings to numbers using parseInt, parseFloat, Number, + and | 0. Fill the answers for yourself in the table below.

str	parseInt(str)	parseFloat(str)	Number(str)	+str	str | 0
'1234'	?	?	?	?	?
'1238abc'	?	?	?	?	?
'0.15'	?	?	?	?	?
'3.14ivan'	?	?	?	?	?
'Infinity'	?	?	?	?	?
'99999999999999999'	?	?	?	?	?

Problem 3. Replace all href values

- **Description**

  Write a function that replace all occurrences of the href values of all links in a site.

- **Input**

  One **href** string that you want to be replaced

- **Output**

  All **href** values of the site will be replaced by the specified **href** string

Problem 4. Compare Array of Objects

- **Description**

  Write a function to sort an array of product objects in increasing order of product's price

- **Input**
  - One array contains product objects
  - Each of them has three properties: Product Name, Product Image and Product Price

- **Output**

  Return one array that contains the product objects in increasing order of their price

Problem 5. Product List

- Create an array that contains a product list
- Each product consists of:
  - ID
  - Product Name
  - Quantity
  - Price
  - Image
- Print the products in the list
- Add a new product to head of the list
- Add a new product to tail of the list
- Search a product by Name
- Remove by ID
- Sort the product list by name

Problem 6. Prime check

- **Description**

  Implement a javascript function that accepts an integer N number (N will always be a valid 32-bit integer number) and uses an expression to check if given N is **prime** (i.e. it is divisible without remainder only to itself and 1).

- **Note**

  You should check if the number is **positive**.

- **Input**

  The only element will be the integer N number

- **Output**
  - Output **true** if the number is prime and **false** otherwise.
  - You can use **console.log** to print the results or you can use **return** to return the answer. Both are correct.

Problem 7. Numbers from 1 to N

- **Description**

  Implement a javascript function that accepts a positive 32-bit integer N number and prints all the numbers from 1 to N inclusive, on a single line, separated by a whitespace.

- **Input**

  The input will consist of a positive 32-bit integer N number.

- **Output**

  The output should consist of a single line - the numbers from 1 to N, separated by a whitespace.

Problem 8. MMSA (Min, Max, Sum, Average) of N Numbers

- **Description**

  Implement a javascript function that accepts an array of floating-point numbers and returns the minimal, the maximal number, the sum and the average of all numbers (displayed with 2 digits after the decimal point).

- **Input:** The array that will be passed as a parameter to your function will contain the numbers of the sequence.
- **Output:** The output must always consist of exactly 4 lines like the following format:
  - Min = 3.00
  - Max = 6.00
  - Sum = 9.00
  - Avg = 4.50
- **Constraints**
  - $1 \leq N \leq 100.000.000$
  - All numbers will be valid floating-point numbers that will be in the range [0, 100.000.000]

Problem 9. Selection sort

- **Description**

  Write a function to sort an array in increasing order:

  arr[0] < arr[1] < … < arr[n - 1]

- **Input**

  One array of integer numbers

- **Output**

  Print the sorted array in a single line - separated by a whitespace.

Problem 10. Frequent number

- **Description**

  Write a function that finds the most frequent number in an array of N elements.

- **Input**

  One array of integer numbers

- **Output**
  - Print the most frequent number and how many time it is repeated
  - Output should be REPEATING_NUMBER (REPEATED_TIMES times)

Problem 11. Reverse an integer number

- **Description**

  Write a function that reverse digits of an integer number.

- **Example**
  - Input: 12345
  - Output: 54321