JSF – Part 1

Exercises

The contained in this document exercises are related to the JavaScript Foundations – Part1 training course. The exercises are an integral part of the JSF lectures, designed to train IT Technical Consultants.

The following naming convention is followed: the first word (the prefix) points to the material presented in the relevant lecture, followed by a subsequent tasks' numbers.

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Document History

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	Initial version
Document version:	**v.1.1**
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Tasks/Exercises Count

BASICS01	11 tasks
BASICS02	15 tasks
BASICS03	22 tasks

Basics 01 – Names, Variables

BASICS01-001: Write ten correct identifiers, following the camelCase naming convention.

BASICS01-002: Imagine, you are solving a math problem. Declare ten variables, which you might need in your program.

BASICS01-003: Imagine, you are working for a cloud provider and are responsible for the servers. You must write a program to list and describe the servers. Declare ten variables, which you might need in your program.

BASICS01-004: Print on the console five alphabet characters, five numbers, five punctuation characters.

BASICS01-005: Declare five variables, assign some numbers, and print them on the console.

BASICS01-006: Declare ten variables, assign the numbers from 1 to 10 and print the even numbers on the console.

BASICS01-007: Declare ten variables, assign the numbers from 1 to 10 and print the first three odd numbers on the console.

BASICS01-008: Declare ten variables, assign the numbers from 100 to 109 and print the last two odd numbers on the console.

BASICS01-009: Declare five variables, assign the first five prime numbers, and print them on the console.

BASICS01-010: Declare ten variables. On the first five - assign the first five prime numbers. On the second five numbers, do the same, but multiply each value by 3. Print all of them on the console.

BASICS01-011: Declare ten variables. Assign them the first ten prime numbers. Print the numbers in reverse order.

Basics 02 – Character Set

BASICS02-001: Declare five variables. Assign them with the ASCII codes of the first five English capital alphabet characters. Print them on the console.

BASICS02-002: Declare five variables. Assign them with the ASCII codes of the last five English lowercase alphabet characters. Print them on the console.

BASICS02-003: Declare five variables. Assign them with the ASCII codes of randomly chosen punctuation characters. Print them on the console.

BASICS02-004: Declare five variables. Assign them with the UNICODE codes of randomly chosen emoji characters. Print them on the console – on different lines.

BASICS02-005: Declare five variables. Assign them with the UNICODE codes of randomly chosen emoji characters. Print them on the console – on one line, separated with four spaces.

BASICS02-006: Declare five variables. Assign them with the randomly chosen emoji characters. Print the UNICODE codes on the console – on different lines.

BASICS02-007: Declare five variables. Assign them with the randomly chosen emoji characters. Print the UNICODE codes on the console – on one line, separated with commas and space after each comma character.

BASICS02-008: Declare five variables. Assign them with the randomly chosen emoji characters. Print the UNICODE codes in hex format on the console – on different lines.

BASICS02-009: Declare five variables. Assign them with the randomly chosen emoji characters. Print the UNICODE codes in decimal format on the console – on different lines.

BASICS02-010: Declare five variables. Assign them with the randomly chosen emoji characters. For each of the variables - print the UNICODE code in binary, octal, decimal, and hex format on one line, separated with comas and space after it.

BASICS02-011: Declare two variables. Assign them with two English capital alphabet characters. Compare them with the “lower than” operator (<) and print on the console the result.

BASICS02-012: Declare two variables. Assign them with two English alphabet characters – one in capital and the other one in lowercase. Compare them with the “lower than” operator (<) and print on the console the result. Can you describe the result?

BASICS02-013: Declare two variables. Assign them with one English alphabet character and one number character. Compare them with the “greater than” operator (>) and print on the console the result. Can you describe the result?

BASICS02-014: Declare a variable. Assign one letter from the English alphabet. Print on the console the reverse – if the letter is capital, print it in lowercase; if the letter is in uppercase, print it in lowercase. Hint: Use the encoding table/codes/location in the table.

BASICS02-015: Declare a variable. Assign it with a letter from the English alphabet. Define a constant, named Cipher and assign it a value in the range of [3;13]. Print on the console the Cipher-th letter after the assigned letter to the variable. Imagine that the English

alphabet is linked in a circle (cycle) – after Z letter follows A letter, then B etc. Example: if you have Cipher=4, and the given letter is 'Y', then print on the console 'C' (the fourth after 'Y').

Basics 03 – Operations, Operators, Precedence

BASICS03-001: Declare two variables and assign them two integer numbers. Print on the console the result of their division.

BASICS03-002: Declare two variables and assign them two integer numbers. Print on the console the division reminder (modulus - остатък от целочислено деление).

BASICS03-003: Declare four variables. On two of them assign integer numbers. The third set with the division reminder. The fourth one set with the quotient (частното -> цялата част от делението). Print on the console the four variables with appropriate description.

BASICS03-004: Define a constant. Check and print on the console if the constant is positive, negative or zero. Hint: Use ternary operators. How many operators do you need?

BASICS03-005: Declare three variables and assign them with three randomly selected integer numbers. Print on the console those two of them, which have the biggest sum. Hint: Use the ternary operators.

BASICS03-006: Declare one variable, assign integer number. Check if the variable contains an even number. Print on the console appropriate message.

BASICS03-007: Declare a constant and assign one digit. Print on one line the constant, the power of two (N^2), the power of three (N^3) on the console.

BASICS03-008: Declare a variable. Assign one digit in the range of [1;9]. Print on the console the multiplication table with that variable.

BASICS03-009: Calculate and print on the console the perimeter of a triangle.

BASICS03-010: Calculate and print on the console the area (лицето) of a triangle.

BASICS03-011: Calculate and print on the console the perimeter of a rectangle.

BASICS03-012: Calculate and print on the console the area of a rectangle.

BASICS03-013: Calculate and print on the console the perimeter (the length) of a circle.

BASICS03-014: Calculate and print on the console the area of a circle.

BASICS03-015: Declare a variable. Assign one digit in the range of [1;9]. Print on the console the multiplication table with that variable.

BASICS03-016: A bus leaves from point A to point B with speed of 80 km/h. At the same time, a car leaves from point B to point A with speed of **x** km/h. The distance between point A and point B is **S** kilometers. After how many minutes, the bus, and the car will meet? Print the result on the console.

BASICS03-017: Write a JavaScript program to convert degrees in radians. Print on the console an appropriate message.

BASICS03-018: Write a JavaScript program to convert km/h into km/min. Print on the console an appropriate message.

BASICS03-019: Write a JavaScript program to convert km/h into m/s. Print on the console an appropriate message.

BASICS03-020: Declare a variable. Assign an integer number. Print on the console the variable, the binary, octal and hexadecimal representation.

BASICS03-021: Are there any not correctly defined expressions in the following excerpt? If any – which one(s)? Why?

```
let a = 1;
let b = a;

let r1 = a+--b;
let r2 = a+++b;
let r3 = a---b;
let r4 = a-++b;
let r5 = a*++b;
let r6 = a*--b;
let r7 = a****++b*b;
let r8 = a****++b//b;
```

BASICS03-022: You have the following excerpt of a JavaScript code:

```
let a = 1;
let b = 3;
let result = a****++b/b++++*a;
```

Try to calculate the value of the result variable, without executing the code.