

Lesson 4:

JavaScript language introduction

Lesson goal

JavaScript (JS) is going to be used in most of the subsequent modules for both client- and server-side programming.

Before applying JS in one of those environments, we need to learn the language basics and learn to develop simple code within a chosen environment.

Important details to investigate

- Setting up your JS programming environment (using a Web browser with programmer features, Node.js environment or online editor/interpreter;
- function declarations and functional expressions;
- querying a parameter or variable for its type;
- object-oriented model and class defining features;
- variables and their scopes;
- JS standard objects and their functionality;
- function type and its application;
- JS prototypes;
- closures.

External resources in English

- A thorough introduction to language's core features (sections 1..9 can be useful for now):
<https://javascript.info/js>
- A more in-depth discussion of JS semantics – see JavaScript Succinctly book at
<http://www.syncfusion.com/resources/techportal/ebooks>

Assignment

1. Create a source file functions.js and include the following functions in it:
 - calculating n-th number of the Fibonacci sequence
 - checking if the string provided as parameter is a palindrome
 - determining the name of the type of the parameter provided to a function
 - converting a natural number into collection of “coin” values where the nominals available are provided as the second parameter – the function's invocation may look as follows: amountToCoins(46, [25, 10, 5, 2, 1])
2. Create a file classes.js and include the definitions of at least two classes forming inheritance hierarchy. The class names and content should match the domain of your prospective semester project. Make sure to implement:
 - constructor functions
 - getter and setter functions