

# Teaching introductory programming with JavaScript in higher education

Győző Horváth<sup>a</sup>, László Menyhárt<sup>a</sup>

<sup>a</sup>Department of Media & Educational Informatics,  
Eötvös Loránd University, Budapest, Hungary  
[gyozo.horvath@inf.elte.hu](mailto:gyozo.horvath@inf.elte.hu), [menyhart@inf.elte.hu](mailto:menyhart@inf.elte.hu)

## Abstract

As the Internet penetration rate continuously increases and web browsers show a substantial development, the web becomes a more general and ubiquitous application runtime platform, where the programming language on the client side exclusively is JavaScript. This is the reason why recently JavaScript is more often considered as the lingua franca of the web, or, from a different point of view, the universal virtual machine of the web. In addition, the JavaScript programming language appears in many other areas of informatics due to the more wider usage of the HTML-based technology, and the embedded nature of the language. Consequently, in these days it is quite difficult to program without getting in touch with JavaScript in some way.

In this article we are looking for answers to how the JavaScript language is suitable for being an introductory language in the programming related subjects of the higher education. First we revisit the different technologies that lead to and ensure the popularity of JavaScript. Following this, the properties of the language are compared with the expectations from a first programming language. Next, a detailed investigation is given about how the methodology, output requirements and curriculum of the introductory programming education can be transposed to JavaScript. The supported platforms and integrated development environments (IDEs) are also reviewed from the point of view of beginner programmers just started to programming. Finally, the advantages of using this language are also covered in the light of the subsequent subjects and concepts.

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