Teaching Data Structures and Algorithms with Java: an innovating experience

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This article describes the process of incorporating JAVA language as the programming language in the subject *Data Structures and Algorithms* of the Bachelorship in Computer Sciences and the Bachelorship in Systems of the National University of La Plata, Argentina. This change became a quite interesting challenge from the pedagogical point of view, since it was necessary to adapt the theoretical and practical contents of the subject to the new programming paradigm, as well as to modify the teaching methodology, implementing intensive laboratory activities. The modification was discussed in depth and analyzed in the context of the programmes it is included in, and the current situation of the teaching of Computer Sciences in Argentina. The decision to undergo this change was impelled by a group of reasons tending to update the curricula of the programmes, thus improving their academic quality. When considering the incorporation of JAVA, its position as one of the most required development platforms of the programming society was also taken into consideration, as well as, the encapsulation and abstraction mechanisms provided by the language and its genericity property to implement highly reusable data structures. Additionally, the use of a current OO language such as JAVA allowed the students to acquire knowledge that can be used in other courses or environments outside of the university. In *Data Structures and Algorithms* it was proposed a specific methodology that gradually introduced the most outstanding features of the JAVA language, in relation with the fundamentals of object oriented programming and adapted to the content course.. This re-structuring turns out to be of great importance, taking into account that there are no records of the use of JAVA as a language in the subjects in which data structures are taught in the universities of our country. With this innovative experience, our university becomes a precursor institution on the topic, worthy of comparison with many foreign universities that have been implementing this change for some years.