Mapping of Higher Education Specialties through the Implementation of a Decision Support System

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Abstract

The vocational orientation of lyceum graduates, higher education students and fresh university graduates present particular interest for the majority of each country's youngsters. These issues have not been investigated extensively, especially in the field of decision sciences. Nevertheless, they have important practical implications because they are directly connected to the decrease of the youth unemployment, one of the top priorities in all European countries. The most used tools in vocational orientation and career planning are the job profiles. These tools include a description of the different professions through information systems. The description of a profession includes any type of information about it, such as statements, roles & responsibilities, expected results, required skills & qualifications, experience etc.
In previous work, the authors presented the analysis and design of a digital guide; a web based Decision Support System (DSS) aiming to assist its users in getting thoroughly informed and eventually choosing the most appropriate for them higher education studies. The digital guide has a twofold goal: i) support youngsters that aim to choose the most appropriate for them higher education studies, and (ii) inform students or graduates searching for information about their specialty's vocational prospects. To the best of our knowledge, this is the only DSS in Greece that presents the departments of all Technological Educational Institutions. These departments are categorized according to their specialty, their vocational prospects and HE institutions.
In this work, the implementation of the proposed web-based DSS is presented. This DSS has been implemented using PHP, MySQL and Ajax techniques to create a synchronous web application. Special versions of the web application have been created for smart mobile devices, to deal with the limited screen size and the touch-screen capabilities of these devices. The implementation of the features that are presented in this paper include:

- The development of the user-friendly interfaces, whatever the type (e.g. desktop PC, tablet, smartphone) of the device the user uses.
- The SQL queries to the Database Management System.
- The implementation of a Data Warehouse that includes job profile database historical data and helps to answer aggregate queries.
- The implementation of a service that can use criteria provided by the user to form recommendations.

KEYWORDS

Decision Support System, Higher Education, Specialty of Studies, Vocational Orientation.