Design and Implementation of an Agent-based Online Testing System

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ABSTRACT

Testing is one of the cores of learning no matter it is conducted in class or over the network. Because it not only can evaluate students ’ learning proficiency but also discover the adequacy of teaching material. However, tests preparation, conduction, and grading are heavy loaded tasks and quite time consuming. Therefore, how to reduce the workload of teachers from preparing tests to grading examination sheets has always been the focus of many studies. In this thesis, we present an agent-based online testing system which uses agent technology to elliviate the test-related tasks of teachers. This thesis utilizes the features of agents who can communicate, perceive, and interact with each other to assist users in reducing those recurrent and time consuming jobs during the process of creating, conducting, and managing online tests. The proposed system is analyzed using UML, implemented using PHP and JavaScript and is running on top of Linux 9.0 operating system with Apache Web Server and MySQL DBMS. The features of this system are (1) to provide a flexible testing environment where teachers can generate exam. sheets and students can conduct test anytime and anyplace, (2) to provide mixed question types which include true-false test, multiple-choice test, and fill-blank test. The mixed question types can evaluate students ’ learning proficiency and fulfill teachers ’ requirement, (3) to analyze students ’ answers and to provide immediate feedbacks which allow teachers and students to get the test results right away. The feedbacks are important both to teachers and students. They can discover the adequacy of teaching material, and (4) the ability of automatic generating exam. sheet and grading which can reduce teachers ’ workload and allow them to spend more time on preparing teaching material.

Keywords : on-line testing, software agent, evaluation.

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