"BRANCHED CONCEPTUAL MAP MODELLING AND VISUALIZATION IMPLEMENTATION ON INTELLIGENT TUTORING SYSTEM"

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Abstract

Intelligent tutoring system is a form of e-learning that can measure the level of understanding of each student so that it can overcome the problems of accelerated student learning.

In this Final Project branched conceptual concept maps as learning suggestions is implemented replacing linear learning advice on web-based intelligent tutoring system by utilizing Graphviz. Branched conceptual maps contain subject materials that students have not mastered and manufactured based on the student’s pre-test result. The initial step in making a branched conceptual map is to analyze the answers from the pre-test to determine which material is a critical topic. Then traversal is performed recursively on concept map with critical topics as the initial node. The traversal will result in the form of SVG file that will be displayed in a web page. Directed graph contains nodes that can be clicked to move to the web page containing the video of subject material.

On the page there is a link to the page the subject’s post-test. Students must work on and pass the post-test in order to continue to the next page. If students pass the post-test, the last post-test page will display a link to the subjects that can be studied further. In addition, branched conceptual map will be updated if students passed the post-test.
Based on trial results, it can be concluded that the software can make a branched conceptual map containing learning sequence suggestion appropriately.

**Keyword : Branched Conceptual Map, E-Learning, Graphviz, Intelligent Tutoring Sistem**