

Universiti Teknologi MARA (Perak)

**DYNAMIC INTELLIGENT TUTORING SYSTEM FOR
BLENDED LEARNING USING FUZZY RULES
UiTM Tapah**

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Project submitted in partial fulfilment of the degree of
Bachelor of Science (Hons.) Computer Science with the
supervision of Dr Mohamed Imran Bin Mohamed Ariff
Faculty of Computer and Mathematical Sciences

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SUPERVISOR'S APPROVAL

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STUDENT'S DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline

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ABSTRACT

Intelligent Tutoring System for Blended Learning course is a system which was developed to improve students' performance and assist lecturers work in preparing the blended learning activity for students. The main aim of this project is to develop the engine for the Intelligent Tutoring System for Blended Learning course that can classify the questions based on syllabus contents and Bloom's taxonomy and generate random order of question and random order of answer for different student. In this project, the methods used to achieve the objectives are Fuzzy Logic and Keyword Matching Technique. This is because, based on our preliminary research, it is found that Fuzzy Rules are good in dealing with classifications. Fuzzy Rules along with Keyword Matching Method is used to classify the topic of the subject and the level of difficulty of the questions as well as determining the mark of an answer given by students, result of assessment and to generate random set of questions of assessments which are based on lecturers' preference. This system is targeted for students and lecturers of Computer Science in Universiti Teknologi Mara who are involved in the Fundamentals of Artificial Intelligence (CSC463) course. Other than assisting lecturers in preparing for blended learning material, the significant of this project is to provide dynamic and interactive system in the blended learning session for students. Since this project is to build only the agent of intelligent Blended Learning system, it is built by using Visual Basic programming language and generated by Visual Basic software. The reason for choosing this language for the development of this project is because Visual Basic language is working compatibly with Microsoft Access database application for data storage and retrieval. The method we choose to do automated classification of topic and level difficulty of a question lead to more accurate result of classification. Based on the result obtained, it was revealed the efficiency of Fuzzy Rules in classification. It was shown that the method has achieved its objectives which assist lecturer in preparing contents for blended learning.