Universiti Teknologi MARA (Perak)

ANALYZING THE QUALITY OF ARTIFICIAL INTELLIGENCE FINAL EXAMINATION QUESTIONS ACCORDING TO BLOOM'S TAXONOMY AND SYLLABUS CONTENTS

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Project submitted in partial fulfilment of the degree of
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SUPERVISOR'S APPROVAL

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Thesis Supervisor

JANUARY, 2015

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

As the technology of Artificial Intelligence (AI) expanded widely, AI has been used in many fields. It has become one of the most critical courses in the area of Computer Science and thus being offered in many universities worldwide. To ensure AI knowledge is mastered well by students, their understanding on this course should be measured efficiently. To achieve this, the preparations of the examination questions should follow certain guidelines or requirements for example the syllabus contents and the Bloom's Taxonomy model. The main objective of this project is to develop a system that acts as an analyzer to analyze the quality of the final examination question papers according to the Bloom's Taxonomy and syllabus contents. In UiTM, the process of analyzing the final examination question papers is currently done manually by the Examination Unit staff. Problems can occur because there are many sets of final examination questions at one time and obviously a manual check will not give a 100% accurate results. Therefore, there is a need of a system that can analyze the quality of the final examination questions according to the syllabus contents and Bloom's Taxonomy model. The methods used in this proposed project are the Fuzzy Logic and Keyword Matching Technique. Fuzzy Logic is used to classify the keywords to six different levels in Bloom's Taxonomy model and different topics in the Fundamentals of Artificial Intelligence course (UiTM Computer Science Degree Programme). The Keyword Matching Technique is used to find the matching keyword in the proposed final examination questions. The keyword found in the final examination questions were compared with the keyword of Bloom's Taxonomy and syllabus contents that were stored in the database. After that, the compliance percentage of the final examination questions based on the Bloom's Taxonomy model and syllabus contents were generated. High quality final examination question papers will follow closely the Bloom's Taxonomy and have a fair distribution of questions based on the syllabus contents. In this project, it was observed that Bloom's Taxonomy conformity percentage results for the analyzed examination questions papers did not obtain high percentages. As for the syllabus contents result, not any of the proposed examination papers have a fair distribution of questions based on syllabus contents.