Universiti Teknologi MARA

House Rental Recommendation Using Fuzzy Analytic Hierarchy Process (FAHP)

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Thesis submitted in fulfillment of the requirements for
Bachelor of Computer Sciences (Hons.)
Faculty of Computer and Mathematical Sciences

January 2017

ACKNOWLEDGEMENT

Alhamdulillah, praises and thanks to Allah because of His Almighty and His utmost blessings, I was able to finish this research within the time duration given. Firstly, my special thanks goes to my supervisor, Miss Nik Marsyahariani Nik Daud because for the support and encouragement that given to me in completing the project.

Special appreciation also goes to my beloved parents, Abdul Hadi Bin Ismail and Zaiton Binti Ibrahim for their support for the past few years and thanks for believing in me.

Last but not least, I would like to give my gratitude to my dearest friends for giving me motivation and advices to complete the project in given time.

ABSTRACT

House rental has become necessary for those who need to study or work far from their homes. Users usually use the house rental website in internet to find a suitable house by considering many factors. The house searching process involves Multiple Criteria Decision Making (MCDM) where a house has many criteria that need to be considered before it can be rented. In order to make it easier for users to find a house rental that suits their requirements, a house rental searching system prototype was proposed by implementing techniques that can help users in making decisions. The solution is to apply Fuzzy Analytic Hierarchy Process (FAHP). This project aims to evaluate whether the technique can be used effectively and facilitate consumers in making decisions. Fuzzy AHP is a combination of Fuzzy Set Theory and Analytic Hierarchy Process (AHP). The development process begins by getting some data requirements from users to be calculated using Fuzzy AHP method. The data are then converted into fuzzy triangular scale and use to form a pairwise comparison matrix. The geometric mean and fuzzy weight for each criterion is then calculated. By using Triangular Fuzzy Number Center of Area, defuzzification takes place and weight for each criteria will be normalized. The result is shown in form of ranking list, which shows suitable and better house rental recommendation for users. Evaluation is performed on a group of targeted users such as university students and workers to test the results accuracy by using the prototype themselves and checked on the results. Accuracy rate obtained is 79.0% which shows that users were satisfied with the results generated by the application. Most lists of the top ten house rental were sorted according to each user's preferences.

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