UNIVERSITI TEKNOLOGI MARA

PET HERO PET CARE SERVICES MOBILE APPLICATION RECOMMENDATION SYSTEM USING CONTENT-BASED FILTERING

FARAH 'ALIYA BINTI JASMIN

BACHELOR OF COMPUTER SCIENCE (HONS.)

AUGUST 2023

ACKNOWLEDGEMENT

Alhamdulillah, first and foremost, I would like to praise Allah the Almighty, the Most Gracious, and the Most Merciful for His blessing given to me during my study and in completing this final year project proposal. I would like to express my greatest appreciation to my supervisor, Madam Nor Azida Binti Mohamed Noh who guided me throughout this project. Thank you so much, Madam for your invaluable guidance and advice during the past two semesters. Besides, I would like to thank, my Project Formulation, CSP600, and CSP650 lecturer, Dr. Noor Hasimah Binti Ibrahim Teo for her feedback and encouragement which helped me a lot to complete this project. Next, a heartfelt acknowledgment goes to my mother and father who are always be supportive and motivates me whenever I have needed it the most. On top of that, I also want take this opportunity to acknowledge everyone who has helped me in completing the project by exchanging interesting ideas and sharing their experiences. Last but not least, I would like to express my gratitude to myself for persevering and completing this final year project despite the challenges and obstacles encountered along the way. It was a difficult and rewarding experience, and I am grateful to have successfully completed it.

ABSTRACT

Following the abatement of the COVID-19 epidemic, there was a notable surge in the demand for pet care services and various other commercial enterprises. Due to the high demand, pet owners frequently express dissatisfaction with the lack of immediate availability of pet care services, which is attributed to the significant demand for such services. Additionally, pet owners had difficulty finding pet care service providers that fit their budgets and preferences. Therefore, the introduction of the Pet Hero Pet Care Services Mobile Application using Content-Based Filtering techniques with TF-IDF algorithm can help overcome these challenges. The mobile application was developed utilizing the Mobile Application Development Life Cycle (MADLC). The system generate pet care service provider recommendations by calculating the cosine similarity score between the user's input preferences and pet care service providers information available in the system, identifying the most relevant providers and ranking them as top-N recommendations. This is done by comparing the TF-IDF weights of the content features in the user's preferences and the item. The cosine similarity is a numerical value that falls between the interval of 0 and 1. When the magnitude of the value approaches zero, it indicates that the two vectors are orthogonal or perpendicular to one another. A value closer to one indicates a smaller angle and a higher degree of similarity between the examined items. The study findings revealed that pet care service providers with a cosine similarity score higher than 50% are very relevant to users, while those with lower scores still provide value by suggesting new pet care service providers that may be of interest. Next, precision and recall are used to evaluate the accuracy of the deployment of the recommendation model. Thus, to address future work, a hybrid model combining collaborative and content-based filtering should be implemented with a context-aware pre-filtering approach to address data sparsity. With the introduction of semantics and factorization, the similarity of contexts can be addressed further to aid in handling sparsity.

Keywords: Pet Care Service Providers Recommendation, Content-Based Filtering , TF-IDF algorithm, Precision and Recall

TABLE OF CONTENT