UNIVERSITI TEKNOLOGI MARA

SALES PREDICTION OF BUBBLEBEE USING PREDICTIVE ANALYTICS

NUR ALIAH ARDINI BINTI AHMAD FAIRUS

BACHELOR OF INFORMATION SYSTEM
(Hons.) BUSINESS COMPUTING

JULY 2025

ACKNOWLEDGEMENT

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, I would like to express my deepest gratitude and appreciation to my supervisor, Dr. Teh Faradilla Binti Abdul Rahman. Her continuous encouragement, feedback, and insightful suggestions have significantly contributed to the success of this research. I am incredibly fortunate to have had the opportunity to work under her supervision, which has helped me grow both academically and personally.

Other than that, my heartfelt thanks go to my lecturer for CSP600, Nor Hasnul Azirah Binti Abdul Hamid, for her constant encouragement and willingness to assist me with any challenges I encountered during my research. Her dedication to teaching and her thoughtful guidance have played a vital role in the development of my research and in shaping my understanding of the subject matter. I am also immensely grateful to my family, partner, friends for their unconditional love, understanding, and support. They have been a source of strength throughout this journey, always encouraging me to persevere, even in moments of doubt.

Most importantly, I would like to acknowledge myself for the determination, perseverance, and self-discipline I have demonstrated throughout this journey. Despite the challenges and obstacles, I remained focused and committed to achieving my goals. The long hours of hard work, the moments of doubt, and the dedication to pushing through have all contributed to my growth and success. I take pride in the resilience I have shown, and the lessons learned along the way, knowing that this achievement reflects not only my academic abilities but also my personal strength and commitment to excellence.

ABSTRACT

Food industry often facing challenge to stay in market where it can be curb by forecasting sales of the company. This study focuses on BubbleBee, a Malaysia-based food and beverage company that faces challenges in sales prediction due to manual reporting, human errors, and limited insights into customer purchasing patterns. The aim of the project was to develop a sales prediction dashboard using predictive analytics. Using the CRISP-DM methodology, three objectives were achieved which are identifying current business processes and problems, implementing predictive models, and visualizing the predictions through a dashboard. Random Forest, Random Tree, and REP Tree models were tested, Random Forest showing the best performance with highest correlation coefficient = 0.9514 and lowest for MAE, RMSE, RAE and RRSE which is 90.9897, 159.1296, 35.3763%, and 46.3614% respectively. The 80:20 split further confirmed its accuracy which achieved 0.9474 for correlation coefficient 76.2784 for MAE and 146.54 for RMSE. A Power BI dashboard was created to present actual and predicted sales and was positively evaluated by the expert and manager for being user-friendly, visually clear, and helpful for planning while suggested some minor improvements such as the standardization of fonts and colours. The findings suggest that predictive analytics can reduce human error, improve decision-making, and support data-driven planning for small businesses. Future improvements should include collecting more complete data and using a larger dataset to improve accuracy and support better business decisions.

TABLE OF CONTENTS