# Universiti Teknologi MARA

# Entity Relationship Diagram (ERD) Learning Courseware

**Nur Afiqah Binti Azizan**

**Thesis submitted in fulfilment of the requirements for
Bachelor of Information Technology (Hons.) Business Computing
Faculty of Computer and Mathematical Sciences**

**July 2020**

# 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 and gratitude goes to my supervisor, Miss Nor Azila Binti Awang Abu Bakar who give endless guidance, encouragement, support, time and contribution. Not to be forgotten, my lecturer for CSP600 and CSP650, Miss Nik Marsyahariani Binti Nik Daud for a complete guidance given through these two semesters. In addition, an appreciation and special thanks to lecturers and others who are involved in this research for their commitment and contribution in providing useful information and idea.

Special appreciation also goes to my beloved parents and other members for their moral and emotional support along the way. Without all their support, maybe I could not able to complete my research successfully. Last but not least, I would like to give my gratitude to my dearest friends who give efforts and time to help to through this final year project progress.

# ABSTRACT

Entity Relationship Diagram (ERD) Learning Courseware is software designed for educational purposes where the user can used it using CD-ROM. This courseware can help the students and to learn the Entity Relationship Diagram (ERD) topic in interesting way and it also can be used by the lecturer as an educational material to deliver learning content. The solve the current problem that face by the students, The ADDIE model has been used as a guideline in designing and developing of the courseware that consists five phases which are analysis, design, development, implementation, and evaluation. Moreover, the courseware testing and user evaluation has been conducted by developer and users in order to identify the functionality and usability of the courseware. To identify the usability of the courseware, user evaluation is used the ISO (International Organization for Standardization) for usability metrics which includes effectiveness, efficiency, and satisfaction. The user evaluation involved 5 selected students as a user to evaluate the usability of the courseware. As a result from the user evaluation, the effectiveness of the courseware are 83.33% which the courseware are easy to use by the users. Then the result for efficiency can be measure using time-based efficiency and overall relative efficiency while for result of satisfaction are 87.5 which means the users are satisfied with the usability of the courseware. Based on this usability result it can help the developer to improve the courseware. Also, the courseware need to be improve with more interactives, activities and content to improves user in understanding the ERD topic.

# TABLE OF CONTENTS

**CONTENT**        **PAGE**

## CHAPTER THREE: METHODOLOGY

## CHAPTER FOUR: ANALYSIS AND DISCUSSIONS

## CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS