

**UNIVERSITI TEKNOLOGI MARA**

**ANIME RECOMMENDER SYSTEM USING K-  
NEAREST NEIGHBOR ALGORITHM**

**LUQMANUL HAKIM BIN AHMAD**

**BACHELOR OF SCIENCE COMPUTER (Hons.)**

**JANUARY 2022**

## **ABSTRACT**

A recommender system is a system that analyses data and makes recommendations to the user based on their preferences, and rating. Anime is one of the famous entertainments beside movie. Anime has a great community online then since pandemic hit us on March 2020, many people start to watch anime to spend their time at home which make the community bigger. People can watch anime through steaming website that available but with the increasing list of anime month by month, year by year, it makes harder to choose preferred anime. People spend a lot of time than necessary to pick their preferred anime from the massive list of anime. The goal of anime recommender system is to provide a recommendation list of anime to the user based on their preferred anime. So, users will spend less time to search for anime. K- nearest neighbor algorithm is chosen to be implemented in the recommender system. This algorithm will receive an input consist of anime name then it will calculate distances between other anime in the existing dataset. Next, the 10 nearest distances between data and the input will be given to the user. As a results, the recommender system using k-nearest neighbor is successfully be implemented in this project. This recommender system model can be considered as reliable after undergo evaluation phase. The system had a low value of both metrics measured which are 0.67 of RMSE and 19.87 of MAPE. This project report end with summary of project been made to highlight the limitations, contribution, and recommendation for the project.

## TABLE OF CONTENT

<b>CONTENT</b>	<b>PAGE</b>
SUPERVISOR APPROVAL.....	I
STUDENT DECLARATION.....	II
ABSTRACT.....	III
TABLE OF CONTENT.....	IV
LIST OF FIGURES.....	VII
LIST OF TABLES.....	VIII
CHAPTER 1.....	1
INTRODUCTION.....	1
1.1    Background of Study.....	1
1.2    Problem Statement.....	2
1.3    Objective.....	3
1.4    Scope.....	3
1.5    Significance.....	3
1.6    Overview of framework.....	4
1.7    Conclusion.....	5
CHAPTER 2.....	7
LITERATURE REVIEW.....	7
2.1    Recommender System.....	7
2.2    Approaches in Recommender System.....	8
2.2.1    Collaborative Filtering.....	9

2.2.2	Content-based Filtering.....	10
2.3	K-Nearest Neighbor Algorithm.....	10
2.4	Implementation of KNN Algorithm in Various problem.....	12
2.5	Similar Work on Anime Recommender System.....	13
2.6	Implication of Literature Review.....	14
2.7	Conclusion.....	15
CHAPTER 3.....		16
RESEARCH METHODOLOGY.....		16
3.1	Overview of Research Methodology.....	16
3.2	Preliminary Study.....	18
3.3	Data Collection.....	18
3.4	System Design.....	19
3.4.1	System Architecture.....	20
3.4.2	Flowchart.....	20
3.4.3	User Interface.....	21
3.4.4	Pseudocode.....	22
3.5	System implementation.....	23
3.5.1	Coding and Debugging.....	23
3.6	Evaluation.....	24
3.6.1	K-Fold Cross Validation.....	24
3.6.2	Mean Absolute Error (MAE).....	25
3.6.3	Root Mean Square Error (RMSE).....	26
3.7	Conclusion.....	27
CHAPTER 4.....		28
RESULT AND FINDING.....		28

4.1	Conceptual framework.....	28
4.2	Program Codes for Algorithm.....	29
4.3	Prototype Interfaces.....	32
4.4	Evaluation Results.....	34
4.4.1	Functionality Test.....	35
4.5	Conclusion.....	37
	CHAPTER 5.....	38
	CONCLUSION AND RECOMMENDATION.....	38
5.1	Summary of the Project.....	38
5.2	Project Contribution.....	39
5.3	Project Limitation.....	39
5.4	Project Recommendation.....	39
5.5	Conclusion.....	40
	References.....	41
	Appendix A: Plagiarism Checker (Ouriginal).....	46