## STUDENT SATISFACTION ANALYSIS OF PHARMACY STUDY PROGRAM ON OFFLINE LEARNING PERFORMANCE AT UNIVERSITAS MUHAMMADIYAH KALIMANTAN TIMUR USING C4.5 ALGORITHM

## **THESIS**

Submitted in partial fulfillment of the requirements for a Bachelor of Computer Science

## **SUBMITTED BY:**

## MUHAMMAD NURUL FADJRI 1811102441112



## DEPARTMENT OF INFORMATION ENGINEERING FACULTY OF SCIENCE AND TECHNOLOGY UNIVERSITAS MUHAMMADIYAH KALIMANTAN TIMUR SAMARINDA

2022

## Student Satisfaction Analysis of Pharmacy Study Program on Offline Learning Performance at Universitas Muhammadiyah Kalimantan Timur Using C4.5 Algorithm

## **THESIS**

Submitted in partial fulfillment of the requirements for a Bachelor of Computer Science

**Submitted By:** 

Muhammad Nurul Fadjri 1811102441112



# DEPARTMENT OF INFORMATION ENGINEERING FACULTY OF SCIENCE AND TECHNOLOGY UNIVERSITAS MUHAMMADIYAH KALIMANTAN TIMUR SAMARINDA

2022

## **APPROVAL SHEET**

STUDENT SATISFACTION ANALYSIS OF PHARMACY STUDY PROGRAM ON OFFLINE
LEARNING PERFORMANCE AT UNIVERSITAS MUHAMMADIYAH KALIMANTAN
TIMUR USING C4.5 ALGORITHM

## ARRANGED BY : MUHAMMAD NURUL FADJRI 1811102441112

Has carried out the thesis examination and was declared to have passed, At the date of 5 July 2022

Advise

Wawan Joko Pranoto, S.Kom., M.Ti

NIDN: 1102057701

**Examiner** 

Rudiman, S.Kom., M.Sc

NIDN: 1105068202

Dean

Protato Sarjito, MT., Ph.D.

MIDN: 0610116204

Head of Study Program

Assila Johar Latipah, M.Cs NIDN: 1124098902

### STATEMENT OF THESIS AUTHENTICITY PAGE

The undersigned below,

: Muhammad Nurul Fadjri Student name

: 1811102441112 NIM Concentration : Computer Science

Declare that the thesis with the following title: Student Satisfaction Analysis Of Pharmacy Study Program On Offline Learning Performance At Universitas Muhammadiyah Kalimantan Timur Using C4.5 Algorithm

Supervisor

: Wawan Joko Pranoto, S.Kom., M.Ti

1. This paper is completely ORIGINAL and has NEVER been submitted for a Bachelor's Degree in Computer Science, either at Universitas Muhammadiyah Kalimantan Timur (UMKT) or at any other tertiary institution.

2. This paper is my own ideas, formulations and research, without any help from other parties except the direction of the Advisory Lecturer

3. In this paper there are no works or opinions of others, except in writing that is clearly stated as a reference in the manuscript with the name of the author mentioned and mentioned in the Bibliography of this paper.

4. The software used in this study is entirely my responsibility, not the responsibility of

Universitas Muhammadiyah Kalimantan Timur (UMKT)

5. I make this statement in truth, if in the future there are irregularities and untruths in this statement, then I am willing to accept ACADEMIC SANCTIONS with the revocation of the degree that has been obtained, as well as other sanctions in accordance with the norms that apply at Muhammadiyah College.

> Samarinda, 30 June 2022, That state,

Muhammad Nurul Fadjri 1811102441112

## **FOREWORD**

## بِسْمِ ٱللَّهِ ٱلرَّحْمَانِ ٱلرَّحِيمِ

Praise and gratitude I pray to Allah SWT. With his blessing, I was able to complete the preparation of this thesis. The title of the thesis that I propose is "Student Satisfaction Analysis Of Pharmacy Study Program On Offline Learning Performance At Universitas Muhammadiyah Kalimantan Timur Using C4.5 Algorithm"

This thesis is submitted to fulfill the graduation requirements for the Thesis course at the Faculty of Science and Technology, Universitas Muhammadiyah Kalimantan Timur. There is no denying that it took a lot of effort to complete this thesis. However, this work would not have been completed without the people around me who support and help me. I'll give thanks to:

- 1. Mr. Prof. Dr. Bambang Setiaji as Chancellor of the Universitas Muhammadiyah Kalimantan Timur, and Prof. Ir. Sarjito, MT, Ph.D as the Dean of the Faculty of Science and Technology Universitas Muhammadiyah Kalimantan Timur, who has been pleased to provide the author with the opportunity to complete his studies at the Universitas Muhammadiyah Kalimantan Timur.
- 2. Mrs. Asslia Johar Latipah, S. Kom., M.Cs as Chair of the Informatics Engineering Study Program, Universitas Muhammadiyah Kalimantan Timur.
- 3. Mr. Wawan Joko Pranoto, S.Kom, M.TI as a supervisor who has provided guidance and suggestions to help this thesis.
- 4. All Lecturers of Informatics Engineering Study Program who have educated and provided knowledge during lectures and all staff who have always been patient in serving all administration during this research process.
- 5. Parents, brothers and nephews who have given tremendous support and love.
- 6. A friend of guidance who has provided assistance and motivation to the author.
- 7. International Informatics Engineering friends who are very Freak have helped me and also support.

- 8. Ej33Coffee, Angkringan Takasimurah, Angkringan Mr. Tatto and Angkringan Elly who have provided a place to write this thesis.
- 9. Wise Juice and Vaporesso Tarot baby who have accompanied the writer when the writer was working on this thesis.
- 10. Twice who has inspired the author and also helped the writer in doing the thesis by listening to the song.

May all goodness and help all get a blessing from Allah SWT. and finally I realize that this thesis is still far from perfect, because of the limited knowledge that I have. For this reason, I humbly expect suggestions and constructive criticism from all parties in order to build this research report.

Samarinda, February 2022

Writer

## **ABSTRACT**

Student satisfaction, which includes the difference between importance and perceived outcomes or results, is an assessment of whether the alternatives selected can at least meet or exceed the expectations of the student, and whether the results achieved are Dissatisfaction can arise when student expectations are not met. Meet expectations. There are five dimensions that measure service quality based on the difference between expectations and consumer-perceived performance: Concrete, Reliability, Responsiveness, Safety, and Empathy.

Student satisfaction ratings are based on questionnaires completed by students. Survey results are processed using the C4.5 algorithm. The C4.5 algorithm is a classifier algorithm that creates a decision tree. The decision tree method transforms a very large problem into a decision tree representing rules. Rules are easy to understand in natural language. Based on the results of surveys conducted, the use of the C4.5 algorithm helps degree programs improve their services according to the results of questionnaires completed by students.

Keywords: C4.5 Algorithm, Questionnaire, Dimension

## **TABLE OF CONTENTS**

FRONT P	PAGE	i
FOREWO	ORD	ii
ABSTRAC	ст	iv
LIST OF 1	TABLE	vii
LIST OF F	PICTURE	viii
LIST OF A	ATTACHMENT	ix
СНАРТЕ	R 1	1
INTRODU	UCTION	1
1.1	Background	1
1.2	Research Formulation	2
1.3	Research Purposes	2
1.4	Research Problem	3
СНАРТЕ	R 2	4
LITERATI	URE REVIEW	4
2.1	Student Satisfaction	4
2.1.	.1 Factors Affecting Student Satisfaction	4
2.2	Service Quality	5
2.3	Educational Facilities	5
2.4	Quality of Academic Service	6
2.5	Data Mining	6
2.6	C4.5 Algorithm	7
2.7	Decision Tree	7
2.8	Rapid Miner	8
СНАРТЕ	R 3	11
RESEARC	CH METHODOLOGY	11
3.1	Types of research	11
3.2	Population and Sample	11
3.3.	.1 Validity test	11
3.3.	.2 Reliability Test	12
3.3	Data collection technique	12
3.4	Percentage Calculation	14
3.5	C4.5 Algorithm	15
3.6	Research design	15

CHAPTE	R 4	19
RESULT	RESULTS AND DISCUSSION	
4.1	Research data	19
4.2	Validity Test and Reliability Test	19
4.3	Percentage Calculation	21
4.4	Data processing	25
4.5	Decision Tree	29
4.6	Discussion	31
СНАРТЕ	R 5	33
RESULT		33
5.1	Conclusion	33
5.2	Suggestion	33
REFREN	REFRENCES	
ATTACHMENT		35

## **LIST OF TABLE**

Table 1 Literature Review	9
Table 2 Questionnaire	
Table 3 Validity Test	21
Table 4 Reliability Test	21
Table 5 Student Satisfaction Score	22
Table 6 Student Satisfaction Survey Results	22
Table 7 Student Satisfaction Scale Results	24
Table 8 Student Satisfaction Scores Per Aspect	24
Table 9 Entropy and Gain	26

## LIST OF PICTURE

Picture 1 Decision Tree Structure	. 18
Picture 2 Likert scale	. 24
Picture 3 Flow chart	. 26
Picture 4 Result data from Questionnaire	. 29
Picture 5 Guilford Reliability	. 31
Picture 6 Data processing	. 34
Picture 7 Rapid Miner Process	. 38
Picture 8 Process in Validation	. 38
Picture 9 Decision Tree	. 39
Picture 10 Decision Tree Explanation	. 40
Picture 11 Δccuracy	<b>4</b> ۲

## **LIST OF ATTACHMENT**

Attachment 1 Data from Questionnaire	. 35
Attachment 2 Data from Validity Test	. 40
Attachment 3 Data from Reliability Test	. 46
Attachment 4 Tabulated Data	. 47
Attachment 5 Graphics from Google Forms	. 50
Attachment 6 R Table	. 57
Attachment 7 Questionnaire from Google From	. 60
Attachment 8 Biography	. 61
Attachment 9 Data Retrieval Permission Letter	. 62
Attachment 10 Response Letter	. 63
Attachment 11 Validity Test Letter	. 64
Attachment 12 Consultation Sheet	. 65
Attachment 13 Turnitin	. 67