Processing Student Comments on Understanding of Lecture Materials Using Rule Based Automata Finite State Model

by Febri Febri

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Processing Student Comments on Understanding of Lecture Materials Using Rule Based Automata Finite State Model

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Abstract. *Serang Raya University, is a private tertiary institution in the province of Banten, There are 4 faculties, Vocational D3 and 17 Study Programs, in the process of teaching and learning activities each lecturer has a different way of teaching students. Faculty of Information Technology, Computer Science Engineering study program with 30 lecturers, 9 classes, 59 courses and 126 students. This does not require the possibility that with the number of courses taken on campus there are sti ll many students who do not understand what the lecturer is delivering. Management of student comments on the understanding of lecture material is designed to make it easy for students to comment on the lecturer's presentation of the material. This is also used as evaluation material for lecturers regarding the delivery of material. Currently, Serang Raya University does not have a website-based information system. From this discussion, comments are made with the Rule-based Finite State Automata model. In reading the comments, this produces a system that can read comments word by word until the end of the word with a space separator so that it finds keywords, namely the keywords understand and don't understand.*

Keywords: *Finite State Automata, College , Evaluation of Learning Outcomes, Online Learning, Prototyping*

1. INTRODUCTION

Serang Raya University, is a private tertiary institution in the province of Banten, There are 4 faculties, D3 Vocational and 17 Study Programs, in the process of teaching and learning activities at Serang Raya University each lecturer has a different way of teaching students. There are those who apply a teaching system where the lecturer will always provide material and explain in full, but there are also lecturers who implement a teaching system where students make presentations, usually the University will hold a final student satisfaction assessment of the lecturer which is carried out in the semester, but does not yet have an assessment lecturers in the form of web-based comments to comment on lecture material delivered.

The research will be carried out at the Faculty of Information Technology, Computer Science Engineering study program. With 30 lecturers, 9 classes, 59 courses and 126 students. This does not require the possibility that with the number of courses taken on campus there are still questionnaires. A closed questionnaire is a questionnaire that contains closed questions that limit the respondent's answers by having to choose the answers listed in the questionnaire. While the open questionnaire is a questionnaire that contains open questions that allow respondents to give the desired answer in the words they choose themselves.

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Answers from closed questionnaires are easy to analyze with rating scales and statistical techniques. Most researchers who study teacher evaluation focus only on quantitative data and ignore qualitative data. Student comments may contain subjective knowledge about a teacher, teaching methods, and presentation skills as well as suggestions for improving teaching quality.

2. RESEARCH METHODS

Applied Research

The system development research carried out is a type of Applied Research. Applied research is research aimed at obtaining a solution to a problem, the applied research model is more directed at creating innovation and developing science and technology. implementation of the analysis and design results using the Visual Study Code programming and SQL Server Database.

Finite State Automata readings

This reading with FSD was carried out by analyzing comments by word until finally keywords were found to determine the understanding of Q1 students as a state or condition, which can be described as follows:

Sampling/Metode Pemilihan Sampel

The data source was taken from the information technology faculty, computer systems study program, the number of samples consisted of 170 respondents, each respondent filled out a questionnaire consisting of NIM Class, Comments. From the three data, one sample data is taken, namely comments to be analyzed. The method of analysis is to count how many words you understand or don't understand in each student's comment by using a finite state automata so that it will produce output with a percentage of students who understand and do not understand for each course meeting.

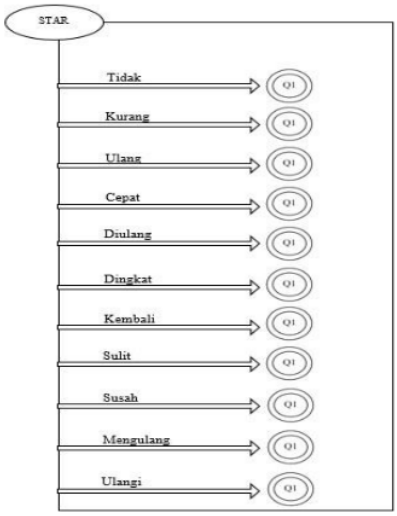
3. RESULTS AND DISCUSSION

Research Results

Based on the results of research to determine student understanding in courses at Serang Raya University, this is done by analyzing comments using keywords to determine student understanding in learning that is being carried out in class by implementing the Finite State Diagram method in student assessments to determine understanding through comments made done . Here's the analysis.

Table 1. Student understanding of courses at Serang Raya University

KW1 (P)	=	KW2 (P)	=	Tidak Paham
KW1 (P)	=	KW2 (Na)	=	Tidak Paham
KW1 (NA)	=	KW2 (P)	=	Paham
KW1 (NA)	=	KW2(Na)	=	Tidak Terdeteksi



Information :

KW1=Keyword 1

KW2= Keyword 2

P = Kata Kunci Ditemukan

Keterangan :

KW1=Keyword 1

KW2= Keyword 2

P = Kata Kunci Ditemukan

Na = Tidak Ditemukan

Picture 1. the analysis

Table 2. Student understanding of courses at Serang Raya University

Keyword 1 TidakPaham	Tidak, Kurang, Ulang, Cepat,Diulang, Singkat, Kembali, Kurang, Sulit, Susah,Mengulang, Ualang
Keyword 2 Sudah Paham	Sudah, Paham, Memahami,Mudah, Dimengerti, Mengerti, Dipahami, Jelas

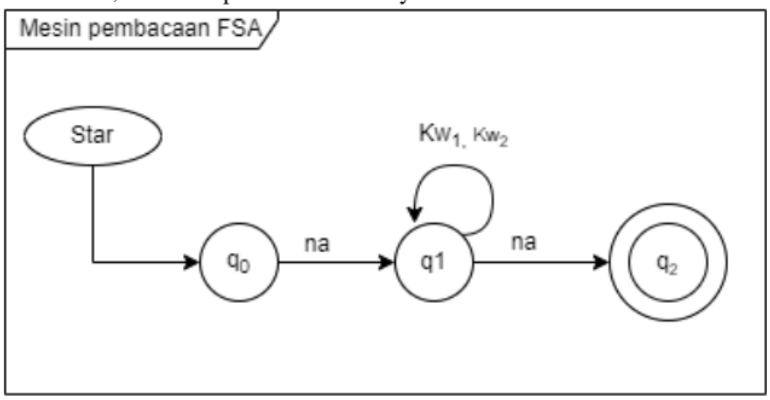
Research Discussion

In Processing Student Comments on Understanding Lecture Material Using the Rule- Based Finite State Automata Model to help

Finite State Auomata Reading Machine

This machine is a reading of a finite state diagram program with the Finite State Automata machine model. Here are some illustrations and examples:

Finit State Automata, contoh inputan komentarnya:



Picture 2. Finite State Automata

Input : saya mudah memahami penjelasannya

q0 Saya (na) q1 mudah (kw2) memahami (kw2) q2 penjelasannya (na) = diterima mesin

Input : saya tidak paham

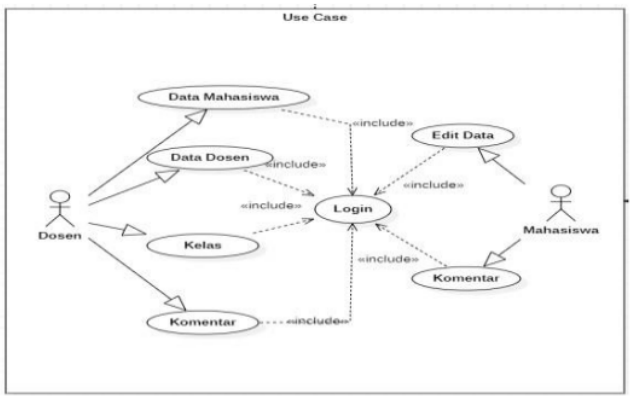
q0 Saya (na) q1 tidak (kw2) paham

(kw2) = ditolak mesin

Discussion

The purpose of the application of understanding lecture material from comment management is to increase enthusiasm for learning and be more active in socializing, therefore, what the campus needs is a comment management system to analyze a comment that is input by students to determine student understanding to improve student learning and make it as benchmark by the lecturer with what has been

Use Case Diagram



Picture 3. Use Case Diagram

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research that has been done, the conclusions can be drawn as follows:

1. Processing Student Comments on Understanding Lecture Materials Using the Rule-Based Finite State Automata Model by reading cases up to the last word with a space separator.
2. From the management of student comments, you can find out which students already understand and do not understand the material presented, by reading to find keywords.
3. Helping lecturers to find out students who understand and do not understand the material they convey, so that it becomes material for evaluation by the lecturer in delivering the material so that the teaching and learning process becomes more optimal.

Suggestion

Maximizing the teaching and learning process so that learning becomes more optimal. In the future, because this model is still new to use, hopefully this research model can be reused with different or the same research and this program can be developed even better.

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