Implementation of the AHP-SMARTER Method in the Decision Support System for Giving Sanctions for Violation of Student Disciplines

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Abstract – Violations of school rules are often carried out by students, including lack of respect for teachers, students who are not on time, often late for class, skipping classes, jumping fences, smoking and not paying attention to the rules and other regulations in school. This study aims to build a decision support system for sanctions for violations of student discipline that has the ability to analyze each of the criteria and sub-criteria that have been determined by the school. In this case, students who violate school rules will be punished and given sanctions so as to provide an output value of priority intensity which results in a system that provides an assessment of violations against students. The method used in building this decision support system is by combining the Analytical Hierarchy Process (AHP) method and the Simple Multi Attribute Rating Technique Exploiting Rank (SMARTER) method. Weighting criteria using the AHP method and for ranking using the SMARTER method. The system created can be used to assist in processing data on violations of school rules. With this decision support system, it is hoped that policy makers will have no difficulty in determining what types of actions and sanctions will be given to students who violate school rules.

Keywords - Decision Support System, AHP Method, SMARTER Method, School Rules

I. INTRODUCTION

Each school has its own policy in determining the level of student discipline. The Integrated Islamic Vocational High School (SMK) of Generasi Muslim Cendikia (GMC) still uses a system of calculating points for violations and determining the sanctions for violations that are still manual, namely by recording all events or student problems into a book. The decision support system suggested by the counseling guidance teacher is a system that makes it easier to evaluate the level of student discipline and sanctions for violations effectively and efficiently. Giving sanctions by teachers in the teaching process is influenced by several factors, namely the seriousness factor in learning, consequences, delinquency at the school level, and family stability factors.[2]. Education in Indonesia not only prioritizes the development of cognitive aspects or knowledge of students, but also pays attention to individual development as a whole person[4].

SMK-IT GMC is a vocational school that has quite a lot of students. Every school must have rules and regulations that must be obeyed and followed by every student but not infrequently these rules and regulations are violated, the violations that often occur are students who are not on time, often late for class, skipping class time, jumping fences, smoking and so on.

According to[5]The system of sanctions for violations of the rules in some schools is still in the form of warning letters and direct reprimands to students. Along with presents development of technology and communication a new challenge that can make guidance and counseling more practical. One of them is a Decision Support System which is an approach to decision making[6]. The method that can support solving this problem is by combining the Analytical Hierarchy Process (AHP) method and the Simple Multi Attribute Rating Technique Exploiting Rank (SMARTER) method.

The system built can be used to assist in processing data on violations of school rules, especially student violations[3]. Although basically there are rules and sanctions that have been implemented in schools, the sanctions are still handled in the usual way without clear differences between the violations committed and the sanctions given (different violations the sanctions are almost the same).

Therefore, researchers want to design a decision support system for sanctions for violating student rules. Every student who violates the rules will be given sanctions so that it can provide a deterrent effect and increase the values of decency and order in the school environment. This is useful to facilitate decision making related to disciplinary issues.

II. RESEARCH METHODOLOGY

A. Decision Support System

Decision Support Systems (DSS) are usually built to support a solution to a problem or to an opportunity. Decision Support System (DSS) applications are used in decision making[7]. Decision Support System (DSS) application uses a flexible, interactive and adaptable CBIS (Computer Based Information System), which was developed to support solutions to unstructured specific management problems[8].

B. AHP (Analitical Hierarchy Process)



This method was first developed by Saaty (Saaty, 1980)[9]. The hierarchical model stated by Saaty is a functional hierarchical model with the main input being human perception.

In general, the steps in using the AHP method for solving a problem are as follows[10]:

- a. Defining the problem and determining the desired solution.
- b. Determining the priority of elements
- c. Synthesis
 - The things to do in this step are:
 - 1) Sum the values of each column in the K matrix.
 - 2) Divide each value from the column by the corresponding column total to obtain a normalized matrix.
 - 3) Sum the values of each row and divide by the number of elements to get the priority weight value.
- d. Measuring Consistency
 - The things that are done in this step are as follows:
 - Each value in the first column is multiplied by the priority weight of the first element, then each value in the second column is multiplied by the priority weight of the second element and so on.
 - 2) Sum each row (\sum row).
 - 3) he result of the sum of the rows is divided by the priority element in question so that it gets Lambda. $\lambda = \frac{\sum row}{priority}$ (1)
 - SumLamda (λ) and the result is divided by the number of elements present, the result is called λ max.

$$\lambda_{\max} = \frac{\Sigma \lambda}{n} \tag{2}$$

e. Calculate Consistency Index (CI) with formula: $CI = \frac{(\lambda max - n)}{(\lambda max - n)}$

f. Compare Consistency Ratio (CR) with formula:

$$CR = CI/RC$$
 (4)

g. Checking hierarchy consistency

C. Simple Multi Attribute Rating Technique Exploiting Rank (SMARTER)

According to[2]states that SMARTER is a multicriteria decision-making technique based on the theory that each alternative consists of a number of criteria that have values and each criterion has a weight that describes its importance when compared to other criteria. This weighting is used to assess each alternative in order to obtain the best alternative. SMARTER uses a linear additive model to predict the value of each alternative. The analysis involved is transparent so this method provides a high level of understanding of the problem and can be accepted by decision makers[1].

The model used in SMART is shown in the equation: $U(ai) = \sum_{j=1}^{k} Wj Ui(ai)$ (5)

- Wj = The weighting value of the J-th criterion of the k criteria.
- U(ai) = The utility value of the I-th criterion for the I-th criterion

Where I = 1, 2, ..., m

- The steps of the SMARTER method are as follows[3]:
- a. Determine the number of criteria for the decision to be taken.
- b. Giving weight to each criterion by using an interval of 1-100 for each criterion with the most important priority.
- c. Calculating the normalization of each criterion by comparing the value of the weight of the criteria with the number of weights of the criteria, using the formula:

$$NWj = \frac{Wj}{\sum_{n=1}^{k} Wn} \tag{6}$$

Information :

NWj = Normalization of J-th criterion weights

Wj =J-th criterion weight

k = Number of criteria

Wn= The weight of the N-th criterion.

- d. Provide a criterion value for each alternative
- e. Calculates final grades and performs rankings using the SMARTER model.

D. Research Stages

(3)

To assist in the preparation of this research, it is necessary to have a clear framework for the stages[11]. This framework is the steps that will be taken in solving the problems that will be discussed.



Figure 1. Research Stages

Information :



- a. Identification of problems that occur in SMK-IT Generasi Muslim Cendikia is the current system that is still not standardized in this case different violations (mild and severe) but the handling is the same and the sanctions given are sometimes the same as other violations. In giving sanctions, there is only a warning and a statement letter, so there are several procedures that are not in accordance with the procedures that should have been applied to students.
- b. In this study, data collection was done by interview. observation and literature study. At this stage, it is done to find out, get data and information that will later support this research[12].

Observation Method

Observations were carried out directly at SMK-IT GMC by looking at the daily lives of students and teachers as well as existing problems to find out the types of violations and sanctions that students received if they violated the rules and regulations.

Interview Method

Interviews were conducted by asking directly to the Guidance Counseling teacher who directly handles problematic students at SMK-IT GMC.

Library Study Method

Literature study is done by reading various kinds of information related to the research title. Researchers took reference sources from national scientific journals and books from the internet.

- c. The problem analysis step is needed to determine recommendations for sanctions for violations of school rules committed by students. With this data analysis, a clear picture of the problems discussed will be obtained[7].
- d. Decision Support System Design, this stage is the activity carried out to make the formulation of the model, the selection of what criteria are taken into consideration for decision makers to decide the best alternative, measure and predict the results that occur.[4].
- e. In this study, the authors implement the AHP-SMARTER method so that they are able to provide recommendations for sanctions for violations of school regulations committed by students. This phase translates the design results into software.
- f. The process of testing the application using blackbox. Testing is done by testing all existing navigation, this test ensures that the processes carried out produce output that is in accordance with the design that has been made[13].
- g. Conclusions are drawn after the design, implementation, and testing stages have been completed[14]. This stage discusses the results of the final goal to be achieved, namely the creation of a decision support system application that can later benefit schools related to the provision of appropriate sanctions in accordance with existing standard procedures.[13].
- E. Research Material

The research material used to make a decision support system for the awarding of sanctions for student discipline violations is by using the AHP-SMARTER method. With the object of research SMK-IT Generasi Muslim Cendikia.

F. Design Model

Research with the application of the SMARTER Method in determining the sanctions for violations which will be combined with the AHP method, will use linear sequential in the design model. The activities in linear sequential are:



- a. Requirements analysis is the stage of analyzing the needs needed in making software
- b. The design stage is the translation stage of the analyzed data into a form that is easily understood by users.
- c. Coding is the stage of translating data that has been designed using a particular programming language.
- d. Testing is the stage of testing the software that has been made.

III. **RESULTS AND DISCUSSION**

The implementation of this system is carried out using two process methods, namely weighting criteria using the AHP method and ranking using the SMARTER method.



Figure 3. AHP-SMARTER Method Completion Flowchart

The dotted line indicates the transfer of the calculation process from the AHP method to the SMARTER method, indicating the separation between the AHP process and the SMARTER process. In the AHP method, after the weights are obtained, it will be continued by testing the consistency. The goal is whether the weights are consistent or not. If the weights are consistent, it will result in weighting, and if not, it will return to the pairwise comparison matrix. After the weight is obtained, it will be continued with ranking using the SMARTER method[1]. The weights obtained in the AHP method will be used as weights on the criteria.

Decision Support System Criteria and Alternatives The criteria used in this decision support system are as follows:



		Table 2. Violation Criteria	
No	Criteria	Type of Violation	Po int
1	C1	Attendance at school	
	a	Absence without explanation 1-3 times	5
	b	Absence without explanation 4-6 times	10
	с	Absence without explanation 7-10 times	15
	d	Absence without explanation more	20
2	C2	School Uniform	
	a	Uniforms not in accordance with the terms of the day of use	5
	b	Not wearing shoes at school	5
	с	Wearing a hat in class or hijab is not uniform	5
	d	Incomplete attribute	5
3	C3 a	Leaving School In effective hours without	10
	b	explanation Permission to leave and not return to school is not in the school's interest	15
4	C4	Courtesy of Association	
	a	Jump over the fence	15
	D	Mocking/ threatening/ hitting	20
	с	teachers/ employees	50
	d	Caught pregnant, pregnant, married	10 0
5	C5	Discipline	
	а	Male student wear earrings, bracelets, necklaces, tattoos	10
	b	Male student with long hair, dyeing hair other than black	20
	с	Bringing books, magazines, tapes, VCDs is prohibited	25
	d	Smoking or carrying a smoking device in the school environment	30
	e	Smoking outside the school environment wears school attributes	30
	f	Bring a cellphone and use it during class hours	30
	g	Getting into fights or molesting fellow students	50
	h	Carrying and using illegal drugs and beverages	75
	i	Arrested for a crime and proven	10 0
	j	Carrying sharp weapons & firearms, thereby harming and threatening the safety of others	10 0

No	Action Code	Point Range	School Action
1	T0	0.1 - 0.9	Verbal Reprimand
2	T1	1 - 10	Held coaching by Counseling
			Guidance teachers and homeroom V
			teachers u
3	T2	11 - 25	Parents are called to school, Coaching
			is held by Guidance Counseling
			teachers and homeroom teachers,
			Make guidance statements
4	T3	26 - 40	Parents are called to school, Guidance
			is held by the Guidance Counseling
			teachers and homeroom teacher,
			Makes a guidance statement and gives
			the 1st Warning Letter to
			parents/guardians
5	T4	41 - 55	Parents are called to school, Guidance
			is held by the Guidance Counseling
			teachers and homeroom teacher,
			Makes a guidance statement and gives

No	Action Code	Point Range	School Action		
			a 2nd warning letter to		
			parents/guardians		
6	T5	56-75	Parents are called to school, Guidance		
			from the principal is witnessed by the		
			homeroom teacher, Counseling		
			Guidance teacher and students, Makes		
			a statement letter stamped 6000 about		
			willingness to be issued if the score is		
			above 75 and does not go up class		
7	T6	76 - 100	Parents are called to school, students		
			are returned to parents		

Table 4. Type of Sanction					
No	Sanction Code	Point Range	Type of Sanction		
1	S0	0.1 - 0.9	Doing Cleaning		
2	S1	1 - 10	Not allowed to follow class hours until		
3	82	11 – 25	the change of lessons Make a statement known to the homeroom teacher and		
4	83	26 - 40	parents/guardians 1st Warning Letter and 2 day suspension		
5	S4	41 - 55	2nd Warning Letter and 5 day suspension		
6	S5	56-75	Stay in class		
7	S6	75 - 100	Expelled from school		

The alternatives used in this decision support system are as follows:

This alternative set is the students of SMK-IT GMC, as a sample taken as many as 5 students, so that if there are 5 alternative decisions, then these alternatives can be written as $A = \{Ai | i = 1, 2, 3, 4, 5\}$ with:

A1: Student 1	
A2: Student 2	
A3: Student 3	
A4: Student 4	

A5: Student 5

Calculation Using AHP Method

The next stage is to determine the priority of the elements by compiling criteria and sub-criteria in the form of a pairwise comparison matrix[8]. To find out the results of the weighting of the criteria used in calculating the priority of criteria and sub-criteria with the AHP method, it is necessary to search for values. How to get a value that can be with a certainty value or by conducting a survey through several respondents using a questionnaire sheet[11].The value of certainty is a value that is directly given for certain riteria, while the value of the questionnaire is the value btained from the assessment given by the respondent where each respondent gives a different preference value sing a scale of 1-9 [8].

Determining the priority of elements by compiling these riteria in the form of a pairwise comparison matrix[9].

Table5. Pairwise comparison matrix						
	C1	C2	C3	C4	C5	
C1	1.000	0.500	0.500	0.500	0.500	
C2	2.000	1.000	0.500	0.500	0.333	
C3	2.000	2.000	1.000	0.500	0.500	
C4	2.000	2.000	2.000	1.000	0.500	
C5	2.000	3.000	2.000	2.000	1.000	
Total	9.000	8.500	6.000	4.500	2.833	



Next is to calculate the value of the criteria column elements, where each criterion column element is divided by the number of matrices for each column in table 5, then add up the row matrix of the values of each element.

Table 6. Normalization Matrix of Criteria Element Values

	C1	C2	C3	C4	C5	Total
C1	0.111	0.059	0.083	0.111	0.176	0.541
C2	0.222	0.118	0.083	0.111	0.118	0.652
C3	0.222	0.235	0.167	0.111	0.176	0.912
C4	0.222	0.235	0.333	0.222	0.176	1.190
C5	0.222	0.353	0.333	0.444	0.353	1.706
Total	1.000	1.000	1.000	1.000	1.000	5.000

After determining the number of criteria columns, the next step is to calculate the priority value of the criteria or create a criteria consistency matrix with the formula for the number of criteria elements divided by the number of criteria in this case 5.

Table7. Average matrix of criteria consistency normalization						
	C1	C2	C3	C4	C5	Priority
C1	0.111	0.059	0.083	0.111	0.176	0.108
C2	0.222	0.118	0.083	0.111	0.118	0.130
C3	0.222	0.235	0.167	0.111	0.176	0.182
C4	0.222	0.235	0.333	0.222	0.176	0.238
C5	0.222	0.353	0.333	0.444	0.353	0.341
Total	1.000	1.000	1.000	1.000	1.000	1.000

The next stage is to multiply the elements in the pairwise comparison matrix column multiplied by the priority value results in Table 7, the multiplication results are then added up per each row.

Table 8. The summation matrix of each row						
	C1	C2	C3	C4	C5	Quantity Per Line
C1	0.108	0.065	0.091	0.119	0.171	0.554
C2	0.216	0.130	0.091	0.119	0.114	0.671
C3	0.216	0.261	0.182	0.119	0.171	0.949
C4	0.216	0.261	0.365	0.238	0.171	1.250
C5	0.216	0.391	0.365	0.476	0.341	1.789

The next step is to add up the matrix of the sum of each row in Table 6 with the result of the "priority" value in Table 8.

Table9. The sum of the number of elements per line with the priority

		value		
	Quantity Per Line	Priority	Result	
C1	0.554	0.108	0.662	
C2	0.671	0.130	0.801	
C3	0.949	0.182	1.131	
C4	1.250	0.238	1.488	
C5	1.789	0.341	2.130	
		t =	5.194	
		CI =	0.048	
		IR =	1.12	
		CR =	0.043	Consistence

From table 8, the following values are obtained: t = (1/5) * ((0.554/0.108) + (0.671/0.130) + (0.949/0.182) + (1.250/0.238) + (1.789/0.341)) = 5.194For n = 5 obtained RI₆ = 1.12 so that: CI = (5.194-5) / (5-1) = 0.048RI₆ = 1.12 CR = $(CI/RI_6) = -0.048 / 1.2 = -0.043$ Therefore CR $\leq 0,1$ then the consistency ratio of the

calculation is acceptable (consistent).

From the results of the calculations in the table above, the value of the preference weights can show that the most important weight order criteria with a weight of 34.1%. Next are the criteria for Politeness in Association with a weighted value of 23.8%, the criteria for leaving school with a value of 18.2%, the criteria for school uniforms 13.0% and the criteria for school attendance with a weighting value of 10.8%.

Table 10. Criteri	a Weight Preference	
Criteria	(%) Weight	Weight (Wi)
		J)

		weight	••j)
1	Attendance at school	10.8 %	0.108
2	School uniform	13.0 %	0.130
3	Leaving school	18.2 %	0.182
4	Courtesy of association	23.8 %	0.238
5	Discipline	34.1 %	0.341
Total	ĺ	100%	1

Calculation Using the SMARTER Method

No

Weighting on SMART uses a scale between 0 and 1, making it easier to calculate and compare values for each alternative[1]. The model used in SMART is shown in

Table 11. Criteria Weight Preference

1 C1 Attendance at school a Absence without explanation 1-3 times 5 b Absence without explanation 4-6 times 10 10.8 % c Absence without explanation 7-10 times 15 10.8 % d Absence without explanation more than 10 times 20 10.8 % 2 C2 School Uniform 20 a Uniforms not in accordance a with the terms of the day of use 5 13.0 % b Not wearing shoes at school c 5 13.0 % c Box out uniform 5 13.0 % d Incomplete attribute 5 13.0 % d Incomplete attribute 5 13.0 % d In effective hours without explanation 10 18.2 % d In effective hours without explanation 10 18.2 % d C4 Courtesy of Association 10 18.2 % d Dating in the school 20 23.8 % 23.8 % c Male student wear earrings, bracelets, necklaces, tatoos 10 10 b Male student wear earrings, brac	No	Criteria	Type of Violation	Point	Weigh t Wj
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a In effective hours without explanation Permission to leave and not b 10 b return to school is not in the school's interest 10 4 C4 Courtesy of Association a Jump over the fence 15 b Dating in the school environment 20 23.8 % c Mocking/ threatening/ hitting teachers/ employees 50 5 C5 Discipline a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, bracelets, necklaces, tattoos 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % e environment 30 g Bring a cellphone and use it during class hours 30 g Getting into fights or molecting follow students 50	3	C3	Leaving School		
Permission to leave and not return to school is not in the school's interest 16.2 % 4 C4 Courtesy of Association a Jump over the fence 15 b Dating in the school environment 20 23.8 % c Mocking/ threatening/ hitting teachers/ employees 50 5 C5 Discipline 10 a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 34.1 % c Bringing books, magazines, tapes, VCDs is prohibited 25 30 34.1 % e environment Smoking or carrying a smoking outside the school 30 34.1 % f Bring a cellphone and use it during class hours 30 30 30 g Getting into fights or molesting follow students 50 50		а	In effective hours without explanation	10	18 2 0/
4 C4 Courtesy of Association a Jump over the fence 15 b Dating in the school environment 20 23.8 % c Mocking/ threatening/ hitting teachers/ employees 50 23.8 % 5 C5 Discipline 10 a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % environment Smoking device in the school environment 30 g Bring a cellphone and use it during class hours 30 g Getting into fights or molesting follow students 50		b	Permission to leave and not return to school is not in the school's interest	15	18.2 %
a Jump over the fence 15 b Dating in the school environment 20 23.8 % c Mocking/ threatening/ hitting teachers/ employees 50 5 C5 Discipline a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % environment Smoking outside the school environment 30 f Bring a cellphone and use it during class hours 30 g Getting into fights or molesting follow students 50	4	C4	Courtesy of Association		-
b Dating in the school environment 20 23.8 % c Mocking/ threatening/ hitting teachers/ employees 50 5 C5 Discipline a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % e environment 30 f Bring a cellphone and use it during class hours 30 g Getting into fights or molecting follow students 50		а	Jump over the fence	15	
c Mocking/ threatening/ hitting teachers/ employees 50 5 C5 Discipline 10 a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % e environment 30 34.1 % f Bring a cellphone and use it during class hours 30 g Getting into fights or molecting follow students 50		b	Dating in the school environment	20	23.8 %
5 C5 Discipline a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % d smoking device in the school 30 34.1 % environment Smoking outside the school 30 34.1 % f Bring a cellphone and use it during class hours 30 30 g Getting into fights or molecting follow students 50		с	Mocking/ threatening/ hitting teachers/ employees	50	
a Male student wear earrings, bracelets, necklaces, tattoos 10 b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % d smoking device in the school 30 34.1 % environment Smoking outside the school 30 34.1 % f Bring a cellphone and use it during class hours 30 g Getting into fights or molesting follow students 50	5	C5	Discipline		-
b Male student with long hair, dyeing hair other than black 20 c Bringing books, magazines, tapes, VCDs is prohibited 25 Smoking or carrying a 30 34.1 % d smoking device in the school environment 30 34.1 % f Bring a cellphone and use it during class hours 30 30 g Getting into fights or molecting follow students 50		а	Male student wear earrings, bracelets, necklaces, tattoos	10	
c Bringing books, magazines, 25 tapes, VCDs is prohibited 25 Smoking or carrying a d smoking device in the school 30 34.1% environment Smoking outside the school e environment wears school 30 attributes f Bring a cellphone and use it during class hours 30 g Getting into fights or 50		b	Male student with long hair, dyeing hair other than black	20	
Smoking or carrying a d smoking device in the school 30 34.1 % environment Smoking outside the school e environment wears school 30 attributes f Bring a cellphone and use it during class hours g Getting into fights or g molesting follow students 50		с	Bringing books, magazines, tapes, VCDs is prohibited	25	
Smoking outside the school e environment wears school 30 attributes f Bring a cellphone and use it during class hours g Getting into fights or g molesting follow students 50		d	Smoking or carrying a smoking device in the school environment	30	34.1 %
f Bring a cellphone and use it during class hours 30 Getting into fights or molecting follow students 50		e	Smoking outside the school environment wears school attributes	30	
Getting into fights or g molesting fellow students 50		f	Bring a cellphone and use it during class hours	30	
molesting tenow students		g	Getting into fights or molesting fellow students	50	



h	Carrying and using illegal drugs and beverages	75
i	Caught pregnant, pregnant, married	100
j	Arrested for a crime and proven	100
k	Carrying sharp weapons & firearms, thereby harming and threatening the safety of others	100

Sample Calculation Using the SMARTER Method NIS : 1719

Name : Supriadi

Type of Violation :

- 1. Do not enter without information 4 days a week
- 2. Incomplete attribute
- 3. Permission to leave and not return to school and not in the interest of the school
- 4. Jump over the fence
- 5. Bring cellphones to school and use them during class hours

Calculations using the SMARTER method are as follows : a. Finding the utility value is as follows:

Utility value formula :

$$Ui (ai) = 100 \frac{(Cmax - Cmin)}{(Cmax - Cmin)}\%$$
(7)

Information: *Ui* (*ai*) = the utility value of t

Ui(ai) = the utility value of the 1st criterion for the i-th criterion

- *Cmax* = maximum criterion value
- *Cmin* = minimum criterion value

How to get the utility value as follows:

1. School Attendance Criteria

$$Ui (ai) = 100 \frac{(10-5)}{(20-5)}\%$$
$$Ui (ai) = 100 \frac{(5)}{(15)}\%$$
$$Ui (ai) = 100.0.3333\%$$
$$Ui (ai) = 33.33$$

2. School Uniform Criteria

$$Ui (ai) = 100 \frac{(5-5)}{(5-5)}\%$$

$$Ui (ai) = 100 \frac{(0)}{(0)}\%$$

$$Ui (ai) = 100.0\%$$

$$Ui (ai) = 0$$

3. Criteria for Leaving School $Ui (ai) = 100 \frac{(15-10)}{(15-10)} \%$ $Ui (ai) = 100 \frac{(5)}{(5)} \%$ Ui (ai) = 100.1 %Ui (ai) = 100

4. Criteria for Courtesy of Association

$$Ui (ai) = 100 \frac{(15 - 15)}{(50 - 15)} \%$$

 $Ui (ai) = 100 \frac{(0)}{(35)} \%$

Ui (ai) = 100.0 %Ui (ai) = 100

5. Order Criteria

$$Ui (ai) = 100 \frac{(30 - 10)}{(100 - 10)}\%$$

 $Ui (ai) = 100 \frac{(20)}{(90)}\%$
 $Ui (ai) = 100.0.2222\%$
 $Ui (ai) = 22.22$

- b. The result value is obtained from: Formula = Value of utility x normalization
 - 1. School Attendance Criteria
 - Result = 33.33 x 0.108= 3.60 2. School Uniform Criteria
 - Result $= 0 \ge 0,13=0$ 3. Criteria for Leaving School
 - S. Criteria for Leaving School Result = $100 \ge 0.182 = 18.2$
 - 4. Criteria for Courtesy of Association Result $= 0 \ge 0.238 = 0$
 - 5. Order Criteria Result = $22.22 \times 0.341 = 7.58$

= 29.38

c. Looking for the Final Result of SMARTER Calculation = $U(ai) \sum_{j=1}^{m} NWjUi(ai)$ (8) Result = 3.60 + 0 + 18.2 + 0 + 7.58

NIS : 3454

- Name : Muhamad Sunardi Type of Violation :
- 1. Did not enter / did not attend without explanation / alpha more than 3 times
- 2. Hijab is not uniform
- 3. Uniforms not in accordance with the terms of the day of use
 - Calculation using the SMARTER method
- a. Finding the utility value is as follows:1. School Attendance Criteria

$$Ui (ai) = 100 \frac{(5-5)}{(20-5)}\%$$

$$Ui (ai) = 100 \frac{(0)}{(15)}\%$$

$$Ui (ai) = 100 .0 \%$$

$$Ui (ai) = 0$$

2. - School Uniform Criteria

 $Ui (ai) = 100 \frac{(5-5)}{(5-5)}\%$ $Ui (ai) = 100 \frac{(0)}{(0)}\%$ Ui (ai) = 100.0%Ui (ai) = 0

- School Uniform Criteria Ui (ai) = $100 \frac{(5-5)}{(5-5)}\%$

$$Ui (ai) = 100 \frac{(0)}{(0)}\%$$



\$3

S2

Ui(ai) = 100.0%	33.33		
IIi(ai) = 0	0		
0t(ut) = 0	100	29.38	T3
	0		
5. Order Criteria	22,22		
(50 - 10)	0		
$Ui(ai) = 100 \frac{1}{(100 - 10)}\%$	0	15.15	т2
(100 - 10)	0	15.15	12
$U_i(z_i) = 100^{(40)}$	44.44		
$O((at) = 100 {(90)}\%$	100		
$U_i(a_i) = 100 \ AA \ AA \ 06$	0	33 36	Т3
O((u)) = 100.44.44%	22.22	55.50	15
Ui(ai) = 44.44	22.22		
	66.67		
b. The result value is obtained from:	0	14.78	T2
Formula = Value of utility x normalization	22.22		
	0		
1. School Attendance Criteria	100		
Result $= 0 \times 0.108 = 0$	0	29.57	T3
2. –School Uniform Criteria	11.1		
Result = $0 \times 0.13 = 0$	22.22		
$\frac{1}{10000000000000000000000000000000000$	66.67	14.78	T2
- School Uniform Criteria	22.22	1	
Result $= 0 \ge 0, 13 = 0$	66.67		
5. Order Criteria	0	25.4	Т3
Result = $44.44 \times 0.341 = 15.15$	0		
	100		
	100	• •	

c. Finding the Final Result of SMARTER Calculation $= U(ai) \sum_{j=1}^{m} NWjUi(ai)$ R

Result	= 0 +	0 + 0	+15.15 =	15.15

Ne	Student	Cuitoria	Dairt	Normalizati
NO	Name	Criteria	Point	on
		C1.b	10	0.108
		C2.d	5	0.130
1	Supriadi	C3.b	15	0.182
	-	C4.a	15	0.238
		C5.f	30	0.341
		C1.a	5	0.108
2	Muhamad	C2.a	5	0.130
2	Sunardi	C2.c	5	0.130
		C5.g	50	0.341
		C3.a	15	0.182
2	Lalu Akbar	C4.a	15	0.238
3	Hasibuan	C5.d	30	0.341
		C5.f	30	0.341
	Dars Andianta	C1.c	15	0.108
4	Roy Ardianto	C2.d	5	0.130
	Putra	C5.f	30	0.341
		C1.a	5	0.108
	Develo	C3.b	15	0.182
5	Rumlan	C4.a	15	0.238
	Hasanudin	C5.b	20	0.341
		C5.e	30	0.341
	Maulana	C1	1.5	0.100
6	Gilang	CI.c	15	0.108
	Apriano	C3.1	30	0.341
		C1.c	15	0.108
-	Wahyuni	C2.c	5	0.130
/	Sawitri	C2.d	5	0.130
		C3.a	10	0.182
		C1.d	20	0.108
8	Marhan Ristu	C2.a	5	0.130
		C3.b	15	0.182
0	Lalu Fikto	C5 f	30	0 3/1
7	Alanda Sofia	0.1	50	0.541
		C1.d	20	0.108
10	Dohmi	C2.d	5	0.130
10	Ballu	C4.a	15	0.238
		C4.b	20	0.238
	Table 13. Adva	nced SMART	ER Calculation	n Results
		Final		Type of
Util	ity Value	Result	Action	Sanction

Table 12 SMADTED Calculation Day

	0	33 36	Т3	\$3
22	.22	55.50	15	55
22				
66	.67			
	0	14.78	T2	S2
22	.22			
	0			
1	00			
	0	29.57	T3	S3
1	1.1			
22	.22			
66	.67	14.79	T2	62
22	.22	14./8	12	52
66	.67			
	0	25.4	T 2	62
	0	25.4	13	53
1	00			
1	00			
	0	29	T3	S3
1	00			
22	.22	7.58	T1	S1
1	00			
	0	14.12	T1	62
	0	14.15	12	52
1	4			
_		Table	14. Value Range	
_	No	Value Range	Information	
	1	1 - 10	Normal	
	2	11 - 25	Slight/Light	
	3	26 - 40	Medium	
	4	41 - 55	Heavy Enough	
	5	56 - 74	Heavy	
	6	75 - 100	Very Heavy	

Use Case Diagram

- 1. In the Use Case Diagram below, there are 4 actors who play a role in the running of the program. The first actor is the BK teacher, the BK teacher can do the login process, manage data such as student data, violation data, witness data, action data, summons, and change passwords.
- 2. The second actor is students, in this system students can log in and view their own data.
- 3. The third actor is the principal, in this system the principal can log in and see all the existing data. The principal also received a report
- 4. The fourth actor is the student's guardian, in this system the student's guardian can log in and view the data on rules, violations, sanctions and student/children's own data. Guardians of students can also receive summons.







enguku	r Konsistensi Krite	ria												
Matriks	Perbandingan Kri	iteria												
Pertama berpasar sedangk	-tama menyusun hira ngan antara kriterta-l an isi nilai perbandin	arki dimana o kriteria dalari igan antara (diawali de n bentuk 1) sampa	ngan tujuan, natrik. Nilai d i dengan (9) l	kriteria dan al lagonal matril sebalikannya,	lternatif-altern k untuk perbai kemudian diju	atif lokas ndingan s imlahkan	i pada tingk watu eleme perkolom.	kat palin In denga Data ma	g bawah. n elemen trik terse	Selanjutny itu sendiri but seperti	a menetapk diisi dengar terlihat pad	an perb i bilangi a tabel	andingan 1n (1) berikut.
							C1	C2		C3	C	1	C5	
1 - Keh	adiran di Sekolah						1	0.5		0.5	0.	5	0.5	
2 - Pak	alan Sekolah						2	1		0.5	0.	5	0.333	
3 - Mer	ninggalkan Sekolal	h					2	2		1	0.	5	0.5	
4 - Sop	an Santun Pergau	lan					2	2		2	ī		0.5	
5 - Kete	ertiban						2	3		2	2		1	
stal kol	lom						9	8.5		6	4.	5	2.83	3
ersesua erikut.	alan, kemudian menj	umlahkan pe	erbaris set	elah itu hasil	penjumlahan	dibagi dengan	banyakr	iya kriteria :	sehingga	i ditemuk	an bobot p	rioritas sepe	rti terlih	iat pada
	C1	C2		C3		C4		C5		Bot	ot Priorit	as		
1	0.111	0.055	2	0.083		0.111		0.176		0.1	08			
2	0.222	0.118	3	0.083		0.111		0.118		0.1	30			
3	0.222	0.235	5	0.167		0.111		0.176		0.1	82			
4	0.222	0.235	ŝ	0.333		0.222		0.176		0.2	38			
5	0.222	0.353	3	0.333		0.444		0.353		0.3	41			
Matriks	Konsistensi Kriter	ria												
Untuk m perbandi seperti ti	engetahui konsisten ingan dengan bobot erlihat pada tabel be	matriks perb prioritas krite rikut.	andingan eria B dar	dilakukan pe seterusnya.	rkalian selurul Kemudian diju	h isi kolom ma umlahkan setia	itriks A p ip barisni	erbandingar ya dan dibai	n dengar gi penjur	n bobot p mlahan bi	rioritas krit aris dengar	eria A, isi ko h bobot prior	lom B n itas ber	atriks sesuaian
	C1		C2		C3		C4			C5		Bob	ot	
1	0.111		0.059		0.083		0.11	L		0.176		5.1	12	
2	0.222		0.118		0.083		0.11			0.118		5.14	13	
3	0.222		0.235		0.167		0.11	L		0.176		5.2	14	
4	0.222		0.235		0.333		0.223	2		0.176		5.2	55	
5	0.222		0.353		0.333		0.44			0.353		5.24	14	
Berikut t	abel ratio index berd	lasarkan orde	o matriks.											
rdo ma	triks	1	2	3	4	5		5	7		8	9		10
atio inc	lex	0	0	0.58	0.9	1.12	1	1.24	1.32		1.41	1.46		1.49
Consiste Ratio Inc Consiste	ncy Index: 0.048 dex: 1.120 ncy Ratio: 0.043 (Ko	nsisten)												

Figure 6. Criteria Weight Calculation

Between TablesRelationships



Figure 5. Between Tables relationships

Sistem Implementation

This section will discuss the implementation of system analysis and design. The things discussed in the implementation include the opening view, the main menu display, the sub menu display, the input and output design display[16],[17],[18].[19].[20].

Display of the Criteria Calculation Form using the AHP Method.

Dashboard/Main Page Form Display



Figure 7. Main Page Form

Student Data Form Display

On the student data page, student data is directly imported into the database by first filling in student data using Microsoft Office Excel because the number of students is quite large.



Beranda	Import D	ata Siswa								
Data Sirwa	Import D	ata Geura								
Data Pelanggaran	Pitih Fil	Tidak ada file	yang dipit	ih 🛛	Impo	rt -				
Data Tata Tertib	Data Sis	wa								
Dota Sanksi										
	Show						Search:			
	entries									
LANDLARAM										
Input Data Pelanggar	NIS	Nama Siswa	Kelas	Jurusan	JК	Lahir	Tanggal Lahir	Alamat	Ayah	Nama Ibu
Data Sowa Pelanggar	1777	Nurul. Hikmah	201	AP2	P	Pengengat	2002- 11-20	KUIQ	HJ-Ialifah	Hj.Minasari
Laporan >	1779	Rangga Cahaya Widaya	201	AP2	L	Mong 1	2001- 02-28	Mong 1	Satim	Minalip
	1780	RANI SEPTIA	X0	AP2	р	KUKUN	2001- 12-17	KUKUN	AMAQ RANI	MIATRE

Display of Violation Data Form

On the violation data page, each violation is directly inputted by selecting the criteria for the violation, the type of violation, the point of violation and the percentage of weight that has been normalized into decimal form.

PELANGGARAN					
🖨 Beranda	Data Pelanggaran				
In: Data Sirwa	Tambah Pelaroparan				
in Data Pelanggaran	Show 0		Search:		
16. Data Tata Tersh	entries				
In Outo Satisti	Kode Pelanggaran	Jenis Pelanggaran	Point	Persentase	Aksi
Data Tindakan	C1 - Kehadiran di Sekolah	a. Tidak masuk / tidak hadir tanpa keterangan/ alpha 1-3 kali	5	0.108	Ubah Hapus
ELANDIARAN	C1 - Kehadiran di Sekolah	b. Tidak masuk/ tidak hadir tanpa keterangan/ alpha 4–6 kati	10	0.108	Ubah Hapus
 Input Data Pelanggar Data Siswa Pelanggar 	C1 - Kehadiran di Sekolah	c. Tidak masuk/ tidak hadir tanpa keterangan/ alpha 7-10 kali	15	0.108	Ubah Hapus
rotas Laporan >	C1 - Kehadiran di Sekolah	d. Tidak masuk/ tidak hadir tanpa keterangan/ alpha lebih dari 10 kali	20	0.108	Ubah Hapus
•	C2 - Seragam Sekolah	a. Seragam tidak sesuai dengan ketentuan hari penggunaannya	5	0.130	Ubah Hapus
	C2 - Seragam Sekolah	b. Tidak bersepatu' memakai sandal selama di sekolah	5	0.130	Ubah Hapus
	C2 - Seragam Sekolah	c. Memakai topi dalam kelas/ jilbab tidak seragam	5	0.130	Ubah Hapus
	C2 - Seragam Sekolah	d. Atribut tidak lengkap	5	0.130	Ubah, Hapus
	C3 - Meninggalan Sekolah	a. Pada jam efektif tanpa keterangan	10	0.182	Ubsh Hepos
	C3 - Meninggalan Sekolah	b. Izin keluar dan tidak kembali lagi ke sekolah/ bukan kepentingan sekolah	15	0.182	Ubah Hapus

Figure 9. Violation Data Form

Display of Rules of Conduct

The fields on the code of conduct data page are the code of conduct and the name of the code of conduct.

Beranda	Tata Tertib		
Data Sizera	Torobak Tata Ta		
Deta Pelanggaran	Show 10	Search:	
Data Tata Tertilo	entries		
Data Sankai	Kode Tata Tertib	Nama Tata Tertib	Aksi
Data Tesdakan	A - Kewajiban Siswa	1. Siswa masuk sebelum jam pelajaran dimutai jam 07.15 Wita dan pulang jam 14.15, kecuali hari Jum候at pulang jam 11.15 Wita.	Ubah
			Binness of
Input Data Pelanggar	A - Kewajiban Siswa	 Menggunakan pekalan seragam : a. Senin dan Selasa : Putih-Abu dan Topi b, Rabu dan Kamis : Pakalan Jurusan c, Juru4C^{ma}t : Pakalan Imtaq d, Sabtu : Pakalan Pramuka 	Ubah Haput
- Deta Sixwa Pelanggar etnian - Laparan →	A - Kewajiban Siswa	3. Mengikuti kegiatan sekolah separti : Upacara, lintag dan kegiatan-kegiatan lain yang ditentukan sekolah.	Ubah Hapus
۲	A - Kewajiban Siswa	4. Menjaga kebensihan ruang kelas dan lingkungan sekelah.	Ubah Hapus
	A - Kewajiban Siswa	5. Menjaga keamanan sarana dan prasarana sekolah.	Ubah Haput
	A - Kewajiban Siswa	6. Menggunakan bahasa yang santun terutama bahasa Indonesia yang baik dan benar.	Ubah Hapus
	A - Kewajiban Siswa	7. Meminta izin keluar kelas, kalau ada keperluan yang sangat urgen dan dicatat pada buku piket.	Ubah Hapes
	A - Kewajiban	8. Hadir dalam tatap mukalpraktik (PSG) minimal 95%.	Ubah

Figure10. Rules of Conduct For

Sanction Form Display

The sanction data page is filled with inputting the sanction code, point range and type of sanction.

Tambah Data Sa	anksi		
Kode Sanksi			
Pilih kode			
Rentang Point			
Jenis Sanksi			
Tambah			
Data Sanksi Tambah			
Data Sanksi Tambah Silow 10		Search	
Data Sanksi Tambah Show 10 entries		Sainth	
Data Sanksi Tambah Show 10 entries Kode Sanksi	e Rentang Point	Sarch	Aksi
Data Sanksi Tambah Show 10 entries Kode Sanksi SO	e Rentang Point 0.1-0.9	Search Jach Sanka Tepuran Lian	Aksi Shiki May
Data Sanksi Show 10 entries Kode Sanksi 50 51	8 Rentang Point 0.1-0.9 1-10	teinte André Sankat Traguran Liane. Trada distriaur mengkud jam pelajaran sehidah pergentian pelajaran.	Abril Ubab Mag Ubab Mag
Data Sankal Tambah Snow 10 entriss Kode Sankal 50 51 51 52	8 Rentang Point 0.1-0.9 1-10 11-25	Interio Antois Sonaka Teguran Lukan Tisan ditakhan mengkulari pen pelaparan antalah pengertain pelaparan Pelandagi penyejakan ditakhala dahi wali kekap tengi bua' wali muti	Aksi Ulak kap Ulak 140
Data Sanksi Teenbah Show Ja entriss Kode Sanksi 50 51 51 52 53	 Rentang Point 0.1-0.9 1-10 11-25 26-40 	Isono Sankal Toporen Laan. Toda di Sankan megihadi pan pelajaran sehinda pergentian selajaran. Toda di Sankan megihadi pan pelajaran sehinda pergentian selajaran. Mendosa pemyakan di Bahadukai dah waki kakad reneng kual waki mundi di 1 den skursing 2 keni	Akal Usush Tear Usush Tear Usush Tear Usush Tear
Data Sanksi Tembah Srow 10 entriss Kode Sanksi 50 51 51 52 53 53 54	 Rentang Paint 0.1-0.9 1-10 11-25 26-40 41:55 	Isonite Sankad Toporen Linon TSilan distano mengkuti jian pelaperan sankalih pengertian pelaperan Menduari pemyatan dikakhuti dahi wali ketad meng hadi wali 1911 dan kenonga 2 keni 1912 dan starang 8 keni	Abd Data Data Data Data Data Data Data Dat

Action Data Form Display

The action data page is filled with inputting the action code, point range and type of action.

Tambah Data	Tindakan		
Kode Tindaka	0		
Pilih kode			
Rentang Poin			
Jenis Tindaka	5		
-			
Tambah			
Data Tastak			
Data Tindaka	n		
Data Tindaka Tambah	n		
Data Tindaka Tambah Show	•	Seach	
Data Tindaka Tambah Show 10	n 8	Seroh	
Data Tindaka Tambah Show 10 entries	•	Sarph	
Data Tindaka Tambah Show 10 entries Kode Tindakan	e e Rentang Point	Search	Ak
Data Tindaka Tambah Show 10 entries Kode Tindakan T0	e Rentang Point 0.1-0.9	Sareh	Ak
Data Tindaka Tambah Show 10 entries Kode Tindakan T0 T1	 Rentang Point 0.1-0.9 1-10 	Search. Mette Tinskakan Distarkan Figuran tich guru DK. Distarkan Fedurationan tich guru DK.	A.

Violator Data Input Form Display

On the violator's data input page, all student data already exists so that if there are students who violate the admin immediately look for the student's name and click the violating button.

	Pelangg	aran Siswa				
	Show		Search			
	entries					
	NIS	Nama Siswa	TTL	Kelas	Jurusan	Aksi
	1719	Supriadi	Begung, 2002-02-22	×I	мм	Nelangga
	1720	SURIATI	LOKAK, 2002-05-26	×I	мм	Melangga
	1721	TAUPAN AZHAR	MAWUN, 2002-06-02	XI	мм	Netargga
	1722	Abdul Rahman	BERAMI, 2001-06-21	20	AP1	Metangga
	1723	ANIAS MARA	Gunung Batu, 2001-12-31	201	AP1	Melangpa
n: •	1724	AYUN ARIFIN	Sengkol, 2003-02-17	XII	AP1	Helangpa
0	1725	BAIQ NIDA YASNITA	BUN GUMBUK, 2002-12-23	20	AP1	Melango
	1726	BAIQ SOVIANTI	BUNJURU, 2002-09-24	201	AP1	Melango
		Dec (Term Brender)				_

Figure 13. Violator Data Input Form

After selecting the violating student, it will be processed by selecting the criteria for the violation and the type of violation then the violation process.



Prost	s Pelanggaran Siswa						
Tan	ygal Kejadian	hh/bb/tttt					
NS		1691					
New	1 Firms						
The second		Baiq Widaw	vati				
Kela	s	201					
Junu	san .	ММ					
Ville	da Delananaran						
Krite	na Pelanggaran						
C1 -	Gehadiran						
No	Kriteria Pelanggari	n heleb	Jenis Pel	langgaran	Point	-	00
2	C1 - Kehadiran di C	ikol ih	b. Tidak	masuk / tulak natur unga keterangan atala 1-3 kau masuk / tulak hadir tanna katerannan' ataba 8.45 kali	10	+	
-	C1 - Kehadran d C	akolah	o. Tidak	masuko olaak nadar sampa katerangaro alpina 4-to kati marak/tidak badir tanna ketarangano alpina 7,10 kati	10	+	
1	C1 - Kehadiran di S	picours	C. TIGSKI	masuki tidak nasir tanpa keterangani alpha 27 Ju kau	10	+	
14	CX - Menaderall Gi S		0.11086	menter over men such scarsallars after anter the 10 kgs	20	_	
C2 - 1	Seragam Sekolah					1	
No	Kriteria Pelanggar	10	Jenis Pela	inggaran	Point	AS	ksi
1	C2 - Seragam Seko	Lah	a. Seragar	m tidak sesuai dengan ketentuan hari penggunaannya	5	+	
2	C2 - Seragam Seko	45	b. Tidak b	ersepatu/ memakai sandal selama di sekolah	5	H	
3	C2 - Seragam Seko	Lah	c. Memaki	ai topi dalam kelasi jilbab tidak seragam	5	+	
C4 - 1	CZ - Seradam Seko Sopan Santun dan Per	lah i paulan	d. Atribut	tidak lenakap	5		
No	Kriteria Pelanggar	an		Jenis Pelanggaran	Point	Ak	esi.
1	C4 - Sopan Santur	Pergautan		a. Melompat pagar	15		
2	C4 - Sopan Santur	Pergaulan		b. Pacaran dilingkungan sekolah	20	t	
3	C4 - Sopan Santur	Pergaulan		c. Mengejek/ mengancam/ memukul. gunu/ karyawan	50	t	
C5.1	(startilized					-	
No	Kriteria Pelanggaran	Jenis Pela	nggaran		Pa	int	AS
1	C5 - Ketertiban	k. Ketahua	n hamil, me	inghamili, menikah	1	30	
2	C5 - Ketertiban	a. Siswe la	ki-laki men	sakal anting, gelang, kalung, tato	3	0	
3	C5 - Ketertiban	b. Siswa la	ki-laki bera	mbut gondrong, mengecat rambut selain warna hitam	1	0	
4	C5 - Ketertiban	c. Membay	va buku, ma	ajalah, kaset, DVD terlarang	2	5	
5	CS - Ketertiban	d. Merokok	/membaw	a alat untuk merokok di lingkungan sekolah	3	0	
6	C5 - Ketertiban	e. Merokok	di tuar ting	jiungan sekolah memakai artribut sekolah	1	0	
	CS - Ketertiban	f. Membaw	ra HP dan n	menggunakannya saat jam pelajaran	3	0	
7				y' menganiaya teman		0	
7	C5 - Ketertiban	g. Tertibat				-	
7 8 9	C5 - Ketertiban C5 - Ketertiban	g. Terlibat	va dan men	nggunakan obat-obatan dan minuman terlarang		5	
7 8 9 10	C5 - Ketertiban C5 - Ketertiban C5 - Ketertiban	g. Terlibat h. Membav i. Ditangka	perkelahian va dan men p karena tir	nggunakan obat-obatan dan minuman terlarang ndak pidana dan terbukti	7	5	
7 8 9 10	C5 - Ketertiban C5 - Ketertiban C5 - Ketertiban C5 - Ketertiban	g. Terlibat h. Membay i. Ditangka j. Membay lain	perkelahian va dan men p karena tir ia senjata ti	ggunakan obet-obatan dan minuman terlarang udak pidana dan terbukti njam dan senjata api, sehingga merugikan dan mengancam keselamatan orang	1	5 10	

Figure 14. Student Violation Filling Page

After the violation process will be summed up all types of violations committed then will be shown the type of sanctions that will be given and the actions that will be taken by the Counseling Guidance teacher.

Display of Violation Point Calculation Result Form The results obtained after all violations are processed are the display of the number of points, the sanctions obtained and the actions to be taken by the Counseling Guidance teacher. After the calculation results appear, the Admin can

9 pelanggaran						
Berarda	Proses Pelanggara	in Oleh Sis	wa			Hasil Sanksi dan Tindakan
Data Sizes	Proses pelanggarar	n berhasil d	Hasil perhitungan point			
Data Pelanggaran						petanggaran
Data Tata Tertib	Biodata SALY	Y KARL	INA			37 75
	NIS	: 1748				57.75
Jeta Seresi	Nama	SALY KA	RLINA			Sahksi yang didepatkan berdasarkan point:
lata Terdakan	Kelas	: XII				(S3) - SP 1 dan skorsing 2 hari
	Junisan	AP1				Tindakan yang dilakukan berdasarkan point (T3) - Orang tua dinanggil ka
rgut Oata Pelanggar	TTL	Kuta, 200	01-08-01			sekolah Diadakan pembinaan oleh
Data Tana Delamont	Alamat	: Kute II				guru BK dan wati ketas. Membu pernyataan bimbingan dan membuat surat peringatan 1 unt orang tua/ wati murid.
	Nama Ayah	MUHNAR	4			
Laporan >	Nama Ibu	Ganing				
•	Proses Pelanggaran	n Oleh Sis yang d	wa ilakukan :			
•	Proses Pelanggaran Pelanggaran No. Kriteria Pelanggara	n Oleh Sis yang d	wa ilakukan : Jenis Pelanggaran	Point	Persontase	
•	Proses Pelanggaran Pelanggaran No. Kriteria Pelanggara 1 C1 - Kehad Sekolah	yang d yang d m	na ilakukan : Janis Pelanggaran b. Tolak masuki tistik hadir tanga takarangari digba 4.6 bati	Point.	Persentase 0.108	
•	Proses Pelanggaran Pelanggaran Nen Pelanggar 1 C1 - Kehad 2 C1 - Kehad Sekolah	yang d yang d an iran di	NA lilakukan : Jonis Pelanggaran b. Tolak masul/ tolak hadr tanpa katerangun/ algos 4 6 kal c. Talak masul/ tolak hadr tanpa katerangun algos - 10 kal	Point 10 15	Persentase 0.108 0.108	
•	Proses Pelanggaran Pelanggaran Neu Kriteria Pelanggara 1. C1- Kehad Sakolah 2. C1- Kehad Sekolah 3. C2 - Sengg Sekolah	n Oleh Sis yang d n iran di iran di iran di	Idakukan : Janis Pelanggaran Stala masuh/tidak hudir tanga Stala masuh/tidak hudir tanga C. Talak masuh/tidak hudir tanga C. Talak masuh/tidak hudir tanga C. Talak masuh/tidak hudir tanga G. manutat pup dalam katau/jidah tidak manutat pup dalam katau/jidah tidak	Point 10 15 5	Persentase 0.108 0.109 0.130	

Figure 15. Violation Point Calculation Results Page

After the violation committed by the student is processed, the admin can print the violation card.

Data Siswa		Dat	ltar Pelanggara	Hasil perhitungan point pelanggaran			
Nama	SALY KARLINA	No	Kriteria Pelanggaran	Jenis Pelanggaran	Poin	Persentase	27 75
Tempat Lahir Kelas	: XII	1	C1 - Kehadiran di Sekolah	b. Tidak masuk/ tidak hadir tanpa keterangan/ alpha 4-6 kali	10	0.108	51.15
Jurusan	: AP1	2	C1 - Kehadiran di Sekolah	c. Tidak masuk/ tidak hadir tanpa keterangan/ alpha 7-10 kali	15	0.108	Sanksi yang didapatkan berdasarkan point:
Jenis Kelamin	: P	3	C2 - Seragam Sekolah	c. Memakai topi dalam kelas/ jilbab tidak seranam	5	0.130	(S3) - SP 1 dan skorsing 2 har
Alamat Nama Ayah	: MUHNAN	4	C2 - Seragam Sekolah	d. Atribut tidak lengkap	5	0.130	Tindakan yang dilakukan
Nama Ibu Ganing	5	C3 - Meninggalan Sekolah	b. Izin keluar dan tidak kembali lagi ke sekolah/ bukan kepentingan sekolah	15	0.182	berdasarkan point	
		6	C4 - Sopan Santun Perpaulan	a. Melompat pagar	15	0.25	(13) - Orang tua dipanggil ke sekolah Diadakan pembinaan oleh guru BK dan wali kelas.
		7	C5 - Ketertiban	d. Merokok/ membawa alat untuk merokok di lingkungan sekolah	30	0.25	Membuat pernyataan bimbingan dan membuat sura
			CS - Ketertiban	e. Merokok di luar lingkungan sekolah memakai artribut sekolah	30	0.25	peringatan 1 untuk orang tua wali murid.
			CS - Ketertiban	di Inglungin sekidah 6. Menoket Gi Inglungan sekolah memukai antribut sekolah	30	0.25 Puyung, Mengeta	peringatan 1 untuk oran wali murid. 2021-09-06 hui Guru BK/Wali Kelas

Figure 16. Violation Result Print Form page

IV. CONCLUSION

Based on the research carried out up to the stage of designing, implementing, and testing the software, it can be concluded that from testing the process of calculating student discipline violations with the AHP-SMARTER method, it can be used and is able to provide the right solution in making decisions about giving sanctions to participants. students who violate school rules. From the results of this study, the 5 highest violations committed by students were taken by looking at the first violation point 78.5 sanctions given S6 and actions taken by T6, the two students with 46.5 violation points with S4 sanctions and T4 sanctions, the third students with 31.25 violation points with S3 sanctions and T3 sanctions, the four students with 21.5 violation points with S2 sanctions and T2 actions and the five students with violation points 15.75 with a S2 sanction and T2 action. The decisions taken by the Counseling Guidance Teachers, homeroom teachers and principals can be accounted for with the support of model calculations in the decision support system.

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