# Scientica Jurnal Ilmiah Sain dan Teknologi

### Recommendation System Selection of Boarding House Using Website Based Profile Matching Method

Robi Martoni<sup>1</sup>, Sandi Rahmadika<sup>2</sup>, Denny Kurniadi<sup>3</sup>, Vera Irma Delianti<sup>4</sup>

Department of Electronics Engineering, Universitas Negeri Padang, Padang, Indonesia

#### Abstract (English)

The increasing demand for boarding houses in Padang City, especially from students, raises challenges in choosing a place to live that suits their needs. This research aims to develop a web-based boarding house selection recommendation system using the Profile Matching method. This method matches the user's ideal profile with the actual profile of the boarding house based on criteria such as price, distance, room size, and facilities. The system is designed and developed with a focus on applying the Profile Matching method, which calculates the difference (gap) between ideal and actual profiles to produce the best recommendation. System testing was conducted through Whitebox Testing and Rating Validation Test to assess the accuracy of the system. The results show that the system is able to provide boarding house recommendations effectively with an accuracy of 100%. This system is expected to help students in making more efficient and directed decisions.

## Article History

Submitted: 12 May 2025 Accepted: 21 May 2025 Published: 22 May 2025

#### **Key Words**

Recommendation System, Boarding House, Profile Matching

#### I. INTRODUCTION

The growing population is one of the global challenges, including in Indonesia [1]. Based on the 2019 World Population Prospects data from the United Nations (UN), Indonesia is the fourth most populous country in the world and the most populous country in the ASEAN region. This significant population growth has a direct impact on the increasing need for various infrastructure, including housing, especially in urban areas with high population density [2].

Padang City, as the capital city of West Sumatra Province as well as the center of education and trade, is one of the areas experiencing an increase in housing needs [3]. This is due to the high flow of population migration, especially students and workers from various regions, who come to continue their education or seek employment opportunities [4]. One of the popular housing solutions in the city is boarding houses. Indekos offer convenience and efficiency as a temporary residence at a cost that is relatively affordable compared to other lodging [5].

However, the high demand for boarding houses poses a new challenge for migrants, especially students. They are faced with a variety of choices with various criteria, such as price, facilities, distance from campus, comfort, and safety [6]. The unavailability of integrated information often complicates the decisionmaking process, so many students have difficulty finding a boarding house that suits their needs and preferences. This condition not only impacts students' comfort, but also affects their effectiveness in carrying out their daily activities [7].

In dealing with this problem, a recommendation system is needed that can help students in choosing boarding houses based on predetermined criteria and preferences. One effective method to build such a recommendation system is the Profile Matching method. This method works by matching the expected ideal profile with the actual profile of each available option [8]. Various studies have shown that the Profile Matching method has a high level of accuracy and efficiency in supporting decision making, making it an appropriate choice for this application.

This research aims to develop a recommendation system for choosing boarding houses around the Padang State University campus using the Profile Matching method. This system is expected to be able to provide practical and accurate solutions for students in finding boarding houses that suit their needs, so as to increase their comfort and effectiveness during their studies in Padang City.

#### II. METHODS

Indekos or often called kos-kosan, is a type of temporary residence consisting of several rooms furnished with basic furniture and equipped with facilities according to the standards set by the owner [9]. The selection of boarding houses requires a careful decision-making process. Decision making is a selection process from various available alternatives with the aim of achieving an optimal decision. This process begins with identifying consumer needs and wants, followed by an evaluation of existing options. To choose a suitable boarding house, boarding house seekers need to consider several important factors, such as location, price, and facilities provided [10].

A recommendation system is a system designed to help users manage information overload by providing recommendations tailored to their preferences and needs [11]. Recommendation systems are very useful for users who lack experience or knowledge in assessing and choosing between various alternatives.

# Scientica Jurnal Ilmiah Sain dan Teknologi

These systems serve to filter information, making it easier for users to find and evaluate alternatives that are more relevant and suitable to their personal needs or preferences [12].

The Profile Matching method is a method used in decision making by assuming that there is an ideal level of predictor variables that must be met by the subject under study, not just the minimum level that must be met [13]. In general, the Profile Matching method is a process of comparing the actual data value of a profile to be assessed with the expected profile value, to identify differences in competence (gaps). The smaller the resulting gap, the greater the weighted value obtained, which means that the profile has a greater chance of being recommended [14]. The RAD method has a number of advantages over previous approaches, such as shorter development cycles, a high degree of flexibility, as well as a more optimized process speed, making it the right choice for information system development.

The method used in designing this recommendation system website is the Rapid Application Development (RAD) method. The Rapid Application Development (RAD) method is a development of the Waterfall model with a faster approach. In this method, each software component is developed using the basic principles of the Waterfall model but with a shorter time [5]. The RAD method has a number of advantages over previous approaches, such as shorter development cycles, a high degree of flexibility, as well as a more optimized process speed, making it the right choice for information system development [15].



Fig. 1 Rapid Application Development Method

Figure 1 shows the stages of the Rapid Application Development (RAD) method which consists of several steps, namely Requirements Planning, User Design, Construction, and Cutover [15]. The following are the stages in the RAD method which can be explained as follows:

#### A. Requirements Planning

1) Ongoing System Analysis: The process of finding boarding houses around the Padang State University campus currently uses various sources of information. These include recommendations from friends, family or other individuals, as well as the use of social media platforms such as Instagram and WhatsApp. Boarding house owners often use social media to publish information about their properties, including photos, descriptions, and facilities provided. After obtaining initial information, students generally make an on-site visit to verify the condition of the boarding house as well as to assess its suitability for their needs. The decision to rent or look for other

alternatives is usually made based on the results of direct observation and individual student preferences. This process reflects the importance of a combination of preliminary information and direct assessment in determining the choice of boarding house.

2) Analysis of Prposed System: The system analysis proposed in this research is to develop a webbased boarding house selection recommendation application using the Profile Matching method. The system allows users to select parameters according to their preferences regarding criteria that are considered important, namely core factors (such as price and location) and secondary factors (such as facilities and size). The system then constructs an ideal profile based on the optimal values for each factor, and then compares it with the actual profile of the existing boarding house alternatives. The difference between the ideal profile and the actual profile is calculated to determine the gap, where core factors have a greater weight. Based on these calculations, the system ranks each boarding house alternative, with the alternative that has the smallest gap and the largest weight getting the highest recommendation. This process helps users in choosing the boarding house that best suits their needs and preferences.

#### B. User Design

*1)* System Design: System design will use the Unified Modeling Language (UML) as a tool to model and analyze system requirements. UML helps to visually describe the workflow, interactions between components, and structure of the system.

#### Use case diagram

Use case diagrams are used to describe the interaction between users and the system. The following is a use case diagram for a boarding house selection recommendation system.



#### Activity Diagram

Activity diagram is modeling done on a system and describes the activities of the proposed system. In Figure 3 Activity diagram of this manager shows the flow of manager activities in the system. Activity diagram for managers starts with login using a valid username and password. After logging in, managers can manage system elements such as parameters,

# Scientica Jurnal Ilmiah Sain dan Teknologi

criteria, user data, and gap values, as well as perform actions such as adding, updating, or deleting information. The manager is also responsible for verifying and deciding whether the boarding house data submitted by the owner is approved or rejected.



In Figure 4 Activity diagram of the Boarding House Owner shows the flow of Boarding House Owner activities in the system. The activity diagram for Boarding House Owners starts with login using a valid username and password. After successfully logging in, the owner checks the verification status of the boarding house data that has been submitted. If verified, the owner can add available room information.



Fig. 4 Boarding House Owner Activity Diagram

In Figure 5 this Student Activity diagram shows the flow of Student activities in the system. The Student Activity Diagram describes the flow of user activities without the login process. The process starts when students access the website and see a list of boarding houses around the Padang State University campus. Students then use the recommendation feature to get a list of boarding houses that match the preferences that have been After the set. recommendation is displayed, the activity is considered complete.



Fig. 5 Student Activity Diagram

#### Sequence Diagram

Sequence diagrams are used to model interactions between objects in a system based on time sequence. In Figure 6, the Manager Sequence diagram illustrates the interaction between the admin and the system in carrying out their duties. The manager sequence diagram starts with the manager entering a username and password, which is then verified by the system. If the login is successful, the system displays the dashboard page. In the dashboard, the manager can add new data, such as parameters or criteria, which are then stored in the database. The manager also has the task of verifying the boarding house proposed by the boarding house owner, with the system displaying a list of boarding houses that require verification. The manager can select and change the verification status as needed.



Fig. 6 Manager Sequence Diagram

# Scientica

(2025), 3 (4): 966–974

Jurnal Ilmiah Sain dan Teknologi

In Figure 7, the Boarding House Owner Sequence diagram illustrates the interaction between the Boarding House Owner and the system in carrying out their duties. The sequence diagram for the Boarding House Owner starts with the login process where the Boarding House Owner enters a username and password to be verified by the system. If the login is successful, the system displays the dashboard page, which allows the Owner to add new boarding house data and submit a verification request. Once the boarding house is verified, the owner can add a new room, where the system will process and save the room data, as well as send a saving confirmation. When finished, the owner logs out of the system. This sequence diagram illustrates the flow of activities of the Boarding House Owner in the system.





In Figure 8, the Student Sequence diagram illustrates the interaction of students in accessing boarding house information without logging in. The process begins with students accessing the website, where the system displays a list of available boarding houses. Next, they choose the recommendation feature to find a boarding house that suits their preferences. The system then displays parameters that can be selected, such as price, facilities, distance, and room size. After students select the parameters, the system processes the recommendation request using the Profile Matching method and displays the appropriate results.



Fig. 8 Student Sequence Diagram

#### Class Diagram

Class diagram is a diagram that shows a description of the classes in the system that have a logical relationship.



Fig. 9 Class Diagram

Class diagram is an important part of system modeling that describes the main structure of the designed system. This diagram consists of several main classes, starting with the boarding class, criteria, parameters, rooms, users, gaps, and assessments that represent the contents of the system.

#### Wireframe Design

A wireframe design is a visual representation of the layout of a web page or application that shows the basic structure and main elements without involving graphic design details or final content.

#### C. Construction

At this stage, the author builds a web-based application using PHP language with Laravel Framework based on the design that has been made before. Data storage required by the system will use MySQL.

## Scientica Jurnal Ilmiah Sain dan Teknologi

The development process is carried out in a modular manner with a structured division of tasks and a predetermined time estimate for each part as shown in the table below.

	TABLE I Time Frame		
Module	Task	Time Frame	Tools
Frontend	User interface design for each page	1-3	Fiama
Development	Form implementation for data input	weeks	Figma
Database Development	Database planning and design Database implementation	MySQL	
Backend Development	CRUD for parameter and criteria data Create a boarding house verification feature Profile Matching method logic for calculation	1-2 Month	Laravel

#### D. Cutover

The tests that will be carried out on the boarding house selection recommendation system that has been built are using Whitebox Testing and Rank Validation Test (Ranking Accurcy Test). Whitebox testing serves to test the internal logic, program structure, and control flow of the system while the Rank Validation Test (Rank Accurcy Test) serves to calculate the accuracy of the Profile Matching method that has been implemented into a web-based application by comparing the alternative sequence generated by the system with a sequence that is considered correct or reference as the result of manual calculation.

#### **III. RESULTS AND DISCUSSION**

#### A. Documenttation of Result

*1) Login Page*: The login page is used to enter the main page. Boarding house managers and owners need to enter credentials in the form of username and password to enter the system.



Fig. 10 Login Page

2) Manager Dashboard Page: This page serves as the management center of the system, where the Manager can perform various tasks to ensure the application runs well and all data is managed in a structured manner.

Indekos	Dashboard				
Menu	8				admin admin@gmail.com
# Dashboard	Data Pengguna	Data Indekos	Data Kriteria	Data Parameter	admin@gmail.com
II Pengguna	25	24 - kos 30 - kamar	4	20	
iii Indekos					
II Kriteria	2025 © Robi Martoni				
11 Parameter					
## Gap					
Logout					
> Logout					

Fig. 11 Manager Dashboard Page

*User Data Page*: The user data page is a page used by managers to manage user data.

ndekos	28 Peng	iguna				+ Tambah
Menu	Show				Search:	
Dashboard Pengguna	10 entries No	Name		Email	Role	Action 0
II Indekos	1	robi		robimartoni1@gmail.com	A pemilik_kes	B Delete
📰 Kriteria	2	Ibrahim Mulya Putra		ibrahimmulyaputra@gmail.com	송 pemilik_kos	1 Delete
Parameter	3	Dedy Ayunda		dedyayunda@gmail.com	2 pemilik_kos	1 Delete
👪 Gap	4	Joni Iswanto		joniiswanto@gmail.com		1 Dolete
	5	Zsa Zsa Indah		zsazsaindah@gmail.com	pemilik_kos	1 Delete
Logout	6	Calvin Yudha Permana		calvinyudhapermana@gmail.com	_∧ pemilik_kes	1 Delete
→ Logout	7	Eva		eva@gmail.com	≥ pemilik_kos	1 Delete
	я	лиме Г. 10 Г.	r		A could be	# Delate

Fig. 12 User Data Page

4) Boarding House Data Page: The boarding house data page is a page used by managers to manage requests to add boarding houses made by boarding house owners.





5) Criteria Data Page: The criteria data page is a page for managers to manage the criteria used to rank in boarding house recommendations from adding, editing or deleting criteria data.



#### Fig. 14 Criteria Data Page

6) *Parameter Data Page:* The parameter data page functions as a place to manage all parameters of

# Scientica

Jurnal Ilmiah Sain dan Teknologi

the criteria	that	will	be	evalua	ated	in	the
recommenda	tion syste	em.					
Indekos	BB parameter						+ Tambah
Menu	Show				s	earch:	
Dashboard    Pengguna	10 entries No D Nama Paramo	zter			Bobot	Kriteria 🛛	Action 3
Indekos	1 > 16.000 M				1	Jarak	edr 🖉 Edr
Parameter	2 12.001 M - 16	5.000 M			2	Jarak	🖉 Edit. 🖀 Defete
🔛 Gap	3 8.001 M - 12)	000 M			3	Jarak	<mark>∕Edk</mark> ≣ Delete
Logout	4 6.001 M - 8.0	00 M			4	Jarak	<mark>∕ Edk</mark> ≣ Delete
1. Logons	5 < 6.000 M				5	larak	Ø Edit
	Fig. 15	Param	eter Da	ta Page			

7) Boarding House Owner Page: The boarding house data page is a page used by boarding house owners to manage room data. Boarding house owners can add their boarding house to the system as well as add data for each room of the boarding house.



Fig. 16 Boarding House Owner Page

8) *Landing Page:* The landing page is a page used by students to view data from all boarding houses.





9) Recommendation Page: On the recommendation page, users will select parameters that are already available according to their needs, such as distance, price, size and facilities.

Website ini dibuat untuk memenuhi persyaratan memperoleh gelar sarjana di universitas negeri padang
r sesuai dengan kebutuhanmu, lalu kik mulai rekomendasi
2

Fig. 18 Recommendation Page 10) Recommendation Result Page: The recommendation results page is a page used by students to view the results of boarding house selection based on the criteria and parameters selected in the previous process.

sii nekomendasi berdasarkan krite	ria yang dipilih diurutkan berdasarkan skor tertinggi		-Filter jenis kos 🗸
	Kost Dabule Parkit    Nama Kost Kost Dabule		
C mamikos	Alamat: Jl. Parkit III No.8, Kecamatan Padang Utara, Kota Padang, Sumatera Barat	🛠 5.0 (skor)	
	Jenik Kos Perempuan o Jaraic 401 M – 600 M o Haras: RA 60001 – Rp. 800.000 o Ukuran: 3 x 3 o Fasiltas: S Fasiltas (Kasur, Lemari, Kipas Angin, Meja, Kamar Mandi Dalaim)	Uhat Detail Kama	
	Nama Kos: Kost Dabule		
<b>1</b> 182	Alamat: Jl. Parkit III No.8, Kecamatan Padang Utara, Kota Padang,		
🕜 mamikos	Sumatera Barat Jenis: Kos Perempuan	😭 4.8 (skor)	
	o Jarak: 401 M - 800 M	Uhat Detail Kama	

#### B. Discussion of Results

The following are the steps and results of applying the Profile Matching method to the boarding house selection recommendation application.

1) Determining Criteria: The criteria used in the selection of boarding houses using the Profile Matching method are shown in the following table:

TABLE II Determining Criteria

Criteria	Criteria Type
Price	Core Factor
Distance	Core Factor
Size	Secondary Factor
Facilities	Secondary Factor

In the calculation with the Profile Matching method, there are 2 types of criteria, namely core factors with a value of 60% and secondary factors with a value of 40%. Core factors are aspects (competencies) that are most prominent or most needed by a competency that is expected to produce optimal performance. Secondary factors (supporting aspects) are items other than aspects in the core factor.

2) Determining Parameters and Weighting Values: The second stage in determining recommendations using this method is to determine the parameters and give the weighted value of each parameter. The parameters used in the selection of boarding houses are shown in the following table:

Determining Parameters and Weighting Values:						
Criteria	Parameters	Weight				
Price	> Rp. 1.200.000	1				
	Rp. 800.001 – Rp. 1.200.000	2				
	Rp. 600.001 – Rp. 800.000	3				
	Rp. 300.001 – Rp. 600.000	4				
	< Rp. 300.000	5				
Distance	>1500 M	1				
	1201 M – 1500 M	2				
	801 M – 1200 M	3				
	401 M - 800 M	4				
	< 400 M	5				
Size	2 x 3	1				
	3 x 3	2				
	3 x 4	3				
	4 x 4	4				
	4 x 6	5				
Facilities	< 3 Facilities (Mattress,	1				

TABLE III

Jurnal Ilmiah Sain dan Teknologi

Scientica

3021-0209	3021	-8209
-----------	------	-------

1	Wardrobe, Fan)	
	4 Facilities (Mattress, Wardrobe,	2
	(Fan, Desk)	
	5 Facilities (mattress, wardrobe,	3
	fan, desk, private bathroom)	
	6 Facilities (Mattress, Wardrobe,	4
	Fan, Desk, Private Bathroom,	
	Wifi)	
	> 7 Facilities (Mattress,	5
	Wardrobe, Desk, Private	
	Bathroom, Wifi, AC, Westafel)	

3) Determine The Profile of The Boarding House: The research conducted by the author serves to make recommendations for boarding houses that users want from several places that have been selected. The selected boarding house profiles are as follows:

Criteria	Parameters	Weight
Price	401 M - 800 M	4
Distance	Rp. 600.001 – Rp. 800.000	3
Size	3 x 3	2
Facilities	5 Facilities (mattress, wardrobe, fan, desk, private bathroom)	3

Determining the Gap: Gap is the difference 5) between the value possessed by a candidate alternative, and the specified ideal target value.

Gap = Indekos Profile Value - Selected Profile Value) Based on the boarding house profile and the standard profile that has been selected at the point above, the gap and gap conversion value are obtained as shown in the following table:

TABLE VI Determining the Gap

	T	ABLE IV			Deter	mining the Gap		
Deter		file of The Boarding House				Boarding		~
Boarding House	Criteria	Parameters	Weight	Boarding House	Criteria	House Profile	Value is selected	Gap Value
Kost Mb	Price	801 M – 1200 M	3			Value		
Grup Tipe A	Distance	> Rp. 1.200.000	1	Kost Mb	Price	3	4	-1
	Size	3 x 4	3	Grup Tipe A	Distance	1	3	-2
	Facilities	> 7 Facilities	5		Size	3	2	1
	1 40111100	(Mattress, Wardrobe,			Facilities	5	3	2
		Desk, Private		Kost Dabule	Price	4	4	0
		Bathroom, Wifi, AC,		Parkit	Distance	3	3	0
		Westafel)			Size	2	2	0
Kost Dabule	Price	401 M - 800 M	4		Facilities	3	3	0
Parkit	Distance	Rp. 600.001 – Rp.	3	Kost	Price	4	4	0
1 unkit	Distance	800.000		Mulazamah	Distance	4	3	1
	Size	3 x 3	2		Size	5	2	3
	Facilities	5 Facilities	3		Facilities	2	3	-1
	1 40111100	(mattress, wardrobe,		Kost	Price	3	4	-1
		fan, desk, private		Bangka	Distance	3	3	0
		bathroom)		-	Size	2	2	0
Kost	Price	401 M - 800 M	4		Facilities	3	3	0
Mulazamah	Distance	Rp. 300.001 – Rp.	4	Kost Della	Price	1	4	-3
		600.000	-	Home Tipe	Distance	1	3	-2
	Size	4 x 6	5	C+	Size	3	2	1
	Facilities	4 Facilities	2		Facilities	2	3	-1
		(Mattress, Wardrobe,			ł	1	1	
		Fan, Desk)		6) Cal	culatino (	Core Factor	and Sec	ondary
Kost Bangka	Price	801 M – 1200 M	3	· ·	0	getting the		•
	Distance	Rp. 600.001 – Rp.	3					
		800.000				to calculate		
	Size	3 x 3	2			nd secondary		
				criterion. Th	e equation	for calculati	ng the core	e factor

3

1

1

3

2

criterion. The equation for calculating the core factor and secondary factor is as follows:

$$NCF = \frac{\sum NC}{\sum IC}, NSF = \frac{\sum NS}{\sum IS}$$
(2)

Information:

NCF: Average core factor value NC: Total number of core factor values

IC: Number of core factor items

NSF: Average secondary factor value

NS: Total number of secondary factor values

IS: Number of secondary factor items

	TABLE VII	
in a Com E		a demo Eeste

Calculating Core Factor and Secondary Factor Values:				
Boarding	Criteria Gap Criteria Averag			Average
House	Criteria	Value	Туре	Average
Kost Mb	Price	4	Core	3,5
Grup Tipe	Distance	3	(60%)	

4) Determining the Selected Standard Profile: The selected profile is an individual preference that will be chosen by the user according to their needs. The user's choices are as follows: TABLE V

5 Facilities

> 1.500 M

4 Facilities

Fan, Desk)

3 x 4

> Rp. 1.200.000

(Mattress, Wardrobe,

(mattress, wardrobe, fan, desk, private bathroom)

Facilities

Price

Size

Distance

Facilities

Kost Della

Home Tipe

C+

Determining the Selected Standard Profile

# cientica

### (2025), 3 (4): 966–974

Jurnal Ilmiah Sain dan Teknologi

(3)

A	Size	4,5	Secondary	4
	Facilities	3,5	(40%)	
Kost	Price	5	Core	5
Dabule	Distance	5	(60%)	
Parkit	Size	5	Secondary	5
	Facilities	5	(40%)	
Kost	Price	5	Core	4,75
Mulazamah	Distance	4,5	(60%)	
	Size	3,5	Secondary	3,75
	Facilities	4	(40%)	
Kost	Price	4	Core	4,5
Bangka	Distance	5	(60%)	
	Size	5	Secondary	5
	Facilities	5	(40%)	
Kost Della	Price	3	Core	3
Home Tipe	Distance	3	(60%)	
C+	Size	4,5	Secondary	4,25
	Facilities	4	(40%)	

Calculating Total Value: After obtaining the 7) average results of the calculations for both core factors and secondary factors for each criterion, the total score for each criterion is then calculated. The formula used to compute the total score is as follows: N = (x)%.NCF + (x)%.NSF

Information:

NCF: Average score of the core factor

NSF: Average score of the secondary factor

N: Total score

(x)%: Percentage value for the core factor and secondary factor

TABLE VIII Calculating Total Value			Kritei	
Boarding House	Criteria Typer	Average	Total Score	
Kost Mb	Core (60%)	3,5	3,7	Paran
Grup Tipe A	Secondary (60%)	3,5	5,7	
Kost Dabule	Core (60%)	5	5	
Parkit	Secondary (40%)	5	5	
Kost	Core (60%)	4,75	4,35	KosC
Mulazamah	Secondary (40%)	3,75	4,55	
Kost Bangka	Core (60%)	4,5	4,7	
	Secondary (40%)	4	4,/	
Kost Della	Core (60%)	3		
Home Tipe C+	Secondary (40%)	4,25	3,5	Pengg

Rangking: The ranking is determined by 8) arranging the total scores in descending order, with the highest score representing the most favorable recommendation. Based on the analysis, the first recommendation is Kost Dabule Parkit with a total score of 5, followed by Kost Bangka with a score of 4.7, Kost Mulazamah with a score of 4.35, Kost Mb Grup Tipe A with a score of 3.7, and Kost Della Home Tipe C+ with a score of 3.5, ranked as the last recommendation.

#### C. Testing

Whitebox Testing: This study employs the 1) white-box testing method to evaluate the boarding house recommendation application. This method is chosen because it focuses on testing the logic and code 3021-8209

structure, enabling the identification and correction of errors in the logical flow and code implementation.

The Cyclomatic Complexity (CC) formula is based on the number of nodes and edges in the program's flowgraph. Cyclomatic Complexity (CC) is a metric used to measure the logical complexity of a program. Mathematically, the Cyclomatic Complexity (CC) formula is defined as follows:

$$(G) = E - N + 2 \tag{4}$$

Information: V(G): Cyclomatic Complexity

EL: Number of Edges in the Flowgraph

N: Number of Nodes in the Flowgraph

The following are the results of the boarding house selection application testing using the white-box testing method:

TABLE IX	
Whitebox Testi	n

Whitebox Testing				
Function	Scenario	Result		
Login	The system will direct the user to their respective dashboard page if the login complies with the established rules.	Success		
Register	The system will redirect to the login page if the entered data complies with the established rules.	Success		
Logout	The system will end the session when the logout button is pressed.	Success		
KriteriaController	The system will add, edit, and delete criteria data that has been previously entered.	Success		
ParameterController	The system will add, edit, and delete parameter data that has been previously entered.	Success		
KosCntroler	The system will verify the boarding house data that has been previously entered by the boarding house owner.	Success		
PenggunaController	The system will add and delete user data.	Success		
OwnerKosController	The system will add, modify, and delete new room data and process it into the evaluation table based on the input provided.	Success		
HomeController	The user will select parameters from the boarding house criteria to be used in providing recommendations using the Profile Matching method.	Success		

Evaluation: The accuracy testing aims to 2) ensure that the method on the website functions according to the requirements. This process involves comparing the system's output with reference data

## ocientica Jurnal Ilmiah Sain dan Teknologi

the correctness of the output.

Based on the data processing results through both the website's calculations and manual calculations, 30 Ketua Bem Menggunakan Metode Profile Matching," 2023. ranking similarities were obtained from the 30 M. R. Ramadhani, C. Fauziah, F. Sawitri, A. K. Putri, and D. Hartanti, boarding house data tested. To calculate the accuracy is used.

Akurasi =  $\left(\frac{\text{Jumlah Kesamaan Ranking}}{\text{Total Alternatif}}\right) \times 100\%$ Akurasi =  $\left(\frac{30}{30}\right) \times 100\% = 100\%$ 

Based on the results of the calculation using the from the total of 30 boarding house data tested.

#### **IV. CONCLUSIONS**

Based on the design and implementation results of boarding house recommendation system, the particularly around the Universitas Negeri Padang (UNP) campus, using the Profile Matching method, several conclusions can be drawn:

- A. This study successfully developed a web-based recommendation system to assist students in Z. Hisyam and P. Budi Utomo, "Analisa Perbandingan Metode Profile Negeri Padang campus.
- B. It provides a service that makes it easier for N. Hidayat and K. Hati, "Penerapan Metode Rapid Application students to obtain boarding method, tailored to their needs.
- C. The Profile Matching method used in this final project is capable of providing boarding house suggestions that align better with the users' needs and preferences.
- D. The development of this application was successful, resulting in a recommendation system built using the Laravel Framework, PHP programming language, and MySQL database system.

#### REFERENCES

- F. Afifah Nurullah, "Perkembangan Metode Kontrasepsi di Indonesia," [1] vol. 48, no. 3, 2021.
- T. A. Masangin, T. Widiastuti, and B. S. Djahi, "Sistem Pendukung [2] Keputusan Pemilihan Tempat Kos Dengan Metode Weighted Agregated Sum Product Assessment (WASPAS) (Studi Kasus Kota Kupang Nusa Tenggara Timur)," Jurnal TRANSFORMASI, vol. 17, no. 2, pp. 13–23, 2021.
- F. Ardiansyah, "Sistem Prediksi Harga Sewa Kost Dengan [3] Menggunakan Random Forest Analytics (Studi Kasus : Kost Eksklusif Di Daerah Istimewa Yogyakarta)," 2020.
- S. Rahmadani, I. Gartina Husein, and W. Wikusna, "Aplikasi [4] Pencarian Dan Pengelolaan Kos Di Daerah Universitas Telkom Modul Pemilik Kos," e-Proceeding of Applied Science, vol. 7, no. 6, pp. 2607-2612, 2021.
- [5] D. Handayani and H. Lubis, "Sistem Informasi Manajemen Aplikasi Rumah Kos Dengan Menggunakan Rapid Application Development Berbasis Android Dan Sms Gateway," Jurnal sistem Informasi (JSI), vol. 8, no. 1, pp. 83-88, 2021.
- A. Aziz and Zulkarnaen, "Sistem Pendukung Keputusan Penyewaan [6] Kos-Kosan Di Desa Anjani Mengunakan Metode Simple Adapting Weighting (SAW) Berbasis Web," TEKNIMEDIA, vol. 5, no. 1, pp. 109-118, 2024.
- E. M. Sipayung, C. F. Fiarni, and S. Sutopo, "Sistem Rekomendasi [7] Tempat Kost di Sekitar Kampus ITHB Menggunakan Metode

using the Ranking Accuracy Test method to evaluate Analytical Hierarchy Process (AHP)," Jurnal Nasional Teknologi dan Sistem Informasi, vol. 7, no. 2, pp. 52-60, Aug. 2021, doi: 10.25077/teknosi.v7i2.2021.52-60.

I. Putu and D. Suarnatha, "Sistem Pendukung Keputusan Seleksi

"Sistem Pendukung Keputusan Pemilihan Kost Di Sekitar Fakultas of the method on this website, the following equation Metode Simple Additive Weighting(SAW)," Prosiding Seminar Nasional Teknologi Informasi dan Bisnis, vol. 1, no. 1, pp. 418-422, 2022

M. Husen, "Faktor Faktor Yang Mempengaruhi Persaingan Usaha Rumah Kos (Sewa Kamar) Terhadap Keputusan Mahasiswa Dalam Memilih Rumah Kos Di Kecamatan Sukarame Bandar Lampung Menurut Ekonomi Islam," 2022.

Y. Visher Laja Jaja, B. Susanto, L. Ricky Sasongko, and K. Kunci, above equation, an accuracy of 100% was obtained "Penerapan Metode Item-Based Collaborative Filtering Untuk Sistem Rekomendasi Data MovieLens," Jurnal Matematika dan Aplikasi, vol. 78-83. 2020 [Online]. 9 no. 2 pp. Available: https://ejournal.unsrat.ac.id/index.php/decartesian

N. Indah Putri et al., "Sistem Rekomendasi Hibdrid Pemilihan Mobil Berdasarkan Profil Pengguna dan Profil Barang," TEMATIK - Jurnal

Teknologi Informasi Dan Komunikasi, vol. 8, no. 1, pp. 56-68, 2021. R. D. Kurniawati and I. Ahmad, "Sistem Pendukung Keputusan Penentuan Kelayakan Usaha Mikro Kecil Menengah Dengan Menggunakan Metode Profile Matching Pada UPTD Plut Kumkm Provinsi Lampung," Jurnal Teknologi dan Sistem Informasi (JTSI), vol. 2, no. 1, pp. 74–79, 2021, [Online]. Available: http://jim.teknokrat.ac.id/index.php/JTSI

selecting boarding houses around the Universitas Matching Dan Topsis Dalam Pemilihan Ketua OSIS," Jurnal INFORMA Politeknik Indonusa Surakarta, vol. 6, no. 1, pp. 23-29, 2020.

house Development (RAD) dalam Rancang Bangun Sistem Informasi Rapor recommendations using the Profile Matching Online (SIRALINE)," Jurnal Sistem Informasi STMIK Antar Bangsa, vol. 10, no. 1, pp. 8-17, 2021.