



# SISTEM PAKAR IDENTIFIKASI PSIKOPAT DENGAN METODE FORWARD CHAINING BERBASIS WEB

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## Abstract

*Psychopaths (Antisocial Personality Disorder) are mental disorders that can be used as a reference to create an expert system. The purpose of this research is to design and build an expert system to identify psychopaths with a web-based forward chaining method and to analyze and find out the symptoms of a psychopath in order to make sufferers and society feel at ease. The type of data used in this study is qualitative data which emphasizes the description of the process and words rather than the results such as the results of mathematical calculations or in the form of numbers. The author has several conclusions that expert systems can replace the role of experts who can provide suggestions or problem solutions to users, expert systems are often made using the PHP and MySQL programming languages, and the forward chaining method is suitable for use in web-based psychopath identification expert systems. This is because by asking questions first, conclusions can be drawn from the problem. The suggestions for the next researchers are the development of this software becomes practical for users, this web-based psychopath identification expert system can be created into android-based and an expert system in order to make it more and more practical because it relates to the cure of human soul.*

## BACKGROUND

Nowadays human life is effected by the rapid developments in science and technology, information, and communication or often referred to as ICT (Information and Communication Technology). The tool used in implementing this technology, information, and communication is a computer. Computers are tools used to process and process data according to commands that have been formulated (Krisbiantoro; 2018; 1).

Utilization of this computer can plunge into the world of medicine where one example is the expert system software developed by the Artificial Intelligence community. Some of the advantages of having an expert system include, with the help of an expert system, ordinary people or those who are not experts in a particular field will be able to answer questions, solve problems, and make decisions that are usually done by an expert, increase productivity, and provide responses (answers).

Psychopaths are psychiatric conditions with obstacles that cause sufferers to have difficulty adjusting to social norms that exist in their environment (Fakhriyani; 2019; 68). The term "Psychopath" in mental health science is used widely for people who experience antisocial personality disorder or Antisocial Personality Disorder (ASDP) is a human disorder in which those affected by this disorder are unable to work well with other people, groups, or society. Santoso et al; 2017; 24).

Psychiatric experts, namely psychologists, are one of the keys to designing and building an expert system because psychologists are suitable for dealing with personality disorders such as psychopaths. Then, the knowledge or expertise of the psychologist is entered into a computer system. An expert system is a computer-based system that adopts facts, reasoning, and human knowledge, so that it can solve problems like an expert or expert in their field (Pratiwi; 2019; 5).

Forward chaining is a method that can be used to identify a psychopath. The method starts from matching the existing facts first, then conclusions are drawn by the expert system to find out a problem experienced.

### **Formulation of the problem**

In accordance with the background above, the problems to be solved in this study can be formulated as follows: 1.

1. How to design and build an expert system in identifying web-based psychopaths?
2. What is the flow of applying the forward chaining method to this web-based psychopath identification expert system?

### **The purpose of the research**

The objectives of this research are as follows:

1. To design and build an expert system to identify psychopaths using a web-based forward chaining method.
2. To analyze and find out the symptoms of a psychopath in order to make the sufferer and society feel at ease.

## **RESEARCH METHODS**

### **Data collection**

The data collection techniques used are:

1. Interview is a method used to collect data or information by speaking directly to the data or information provider. The type of interview used is a structured interview that uses a list of questions to obtain complete data or information. Interviews were conducted with Fety Nurhidayati, S.Psi., Psychologist., M.Si., CH, CHt as the head of the Psychology Bureau Atmaveda Consultant and Anisa Pauzana, S.Psi. as an assistant.
2. Literature Study is a method used to collect data or information by finding and viewing references as research guidelines. References in question are books, journals, or literature related to research.

### **Data analysis technique**

Data analysis technique is a method used to process raw facts or data into information. The data analysis technique used by the author is qualitative inductive analysis. Qualitative inductive analysis is a technique that encourages the completion of a case by collecting specific rules, then being drawn into general rules that will be described in a certain form.

## **DISCUSSION**

### **Basic Knowledge and Rules**

The knowledge base is a collection of knowledge that is formulated to form rules and aims to solve a problem from the representation of expert knowledge. The following is data collection in the form of a table division that is related to each other below:

**Table 1. Kinds of Symptoms**

Symptoms Code	Symptoms
1	Don't care about someone's feeling
2	No remorse and guilt. Sometimes a psychopath admits his actions, but he greatly underestimates or denies the consequences of his actions and has no reason to care.
3	A very irresponsible and persistent attitude, and does not care about norms, rules, and social obligations. Indicated by engaging in physical fights and resulting in detention, such as damaging buildings, engaging in illegal work, stealing, or molesting others.
4	Always lie.
5	Feeling happy to offend.
6	Indifference to society.
7	Lack of empathy. For psychopaths, chopping off chicken heads and chopping off people's heads made no difference.
8	No remorse and guilt. Sometimes a psychopath admits his actions, but he greatly underestimates or denies the consequences of his actions and has no reason to care.
9	Unable to maintain a relationship to last, even though there is no difficulty in developing it.
10	Frequently changing partners.
11	Hurting partners.
12	Very low frustration tolerance and a low threshold for venting aggression, including acts of violence.
13	Unstable emotion
14	Aggressive
15	Angry easily
16	Inability to experience guilt and benefit from experience, especially from punishment.
17	Don't be deterred by punishment.
18	Making the same mistakes over and over again.
19	Highly inclined to blame others, or offer reasonable rationalizations, for behavior that puts the patient in conflict with society.
20	Manipulative and cheating. Psychopaths also often show dramatic emotions even though they aren't really. They also lack the physiological responses normally associated with fear such as sweaty hands, palpitations, dry mouth, tension, or shaking. People with psychopaths do not have these feelings because psychopaths are often referred to as "cold".
21	High IQ or genius.
22	Well-knowledge
23	In criminal cases, psychopaths are identified as murderers, rapists, and corruptors. However, this is only 15% to 20% of the total psychopaths. The rest are individuals who look perfect, speak well, are charming, have extraordinary charm and are fun.
24	Failure to plan for the future or impulsivity, as demonstrated by walking around without a clear job or goal.
25	No respect for personal safety or the safety of others, demonstrated by driving while drunk or repeatedly speeding.
26	Sometimes you don't care about other people's feelings.
27	Sometimes egocentric and thinks he is great.

28	Sometimes there is no sense of remorse and guilt. Sometimes a psychopath admits his actions, but he greatly underestimates or denies the consequences of his actions and has no reason to care.
29	Sometimes they have a very irresponsible and persistent attitude, and do not care about norms, rules, and social obligations. Indicated by engaging in physical fights and resulting in detention, such as destroying buildings, engaging in illegal work, stealing, or molesting others.
30	Sometimes lie.
31	Sometimes it's nice to commit offense
32	Sometimes has an indifferent attitude towards society.
33	Sometimes lack of empathy. For psychopaths, chopping off chicken heads and chopping off people's heads makes no difference.
34	Sometimes it is not possible to maintain a relationship to last, even though there is no difficulty in developing it.
35	Sometimes changing partners.
36	Sometimes it hurts partner.
37	Sometimes there is a very low tolerance for frustration and a low threshold for venting aggression, including acts of violence.
38	Sometimes emotions are unstable.
39	Sometimes aggressive.
40	Sometimes like to be angry.
41	Sometimes not being able to experience guilt and benefit from the experience, especially from punishment.
42	Sometimes it is not deterred by punishment.
43	Sometimes make the same mistake over and over again.
44	Sometimes very inclined to blame others, or offer reasonable rationalizations, for behavior that puts the patient in conflict with society.
45	Sometimes manipulative and cheating. Psychopaths also often show dramatic emotions even though they aren't really. They also lack the physiological responses normally associated with fear such as sweaty hands, palpitations, dry mouth, tension, or shaking.
46	People with psychopaths do not have these feelings because psychopaths are often referred to as "cold".
47	Sometimes high IQ or genius.
48	Sometimes extensive knowledge.
49	Sometimes perfect in appearance, good in speech, charming, has extraordinary charm and fun.
50	Sometimes not respecting personal safety or the safety of others, shown by driving while drunk or repeatedly speeding.

**Table 2. Illness and Solution**

Disease Code (Grades)	Disease Name (Grade)	Solution
P001	Low	Following 2 or more treatments or management below! 1. Managing emotions or behavior 2. Behavioral therapists both individually and in groups. 3. Give attention and direct it to a better one. 4. Given medication or therapy from a psychiatrist. 5. Given antidepressants. 6. Change the environment into a healthy environment and provide support (motivation) especially for low and moderate psychopaths. 7. Psychoanalysis depending on needs. 8. Psychodrama depends on needs. 9. Psychosurgery.
P002	Medium	Following 4 or more of the treatments or management below! 1. Managing emotions or behavior 2. Behavioral therapists both individually and in groups. 3. Give attention and direct it to a better one. 4. Given medication or therapy from a psychiatrist. 5. Given antidepressants. 6. Change the environment into a healthy environment and provide support (motivation) especially for low and moderate psychopaths. 7. Psychoanalysis depending on needs. 8. Psychodrama depends on needs. 9. Psychosurgery.
P003	High	Following 6 or more of the treatments or treatments below! 1. Managing emotions or behavior 2. Behavioral therapists both individually and in groups. 3. Give attention and direct it to a better one. 4. Given medication or therapy from a psychiatrist. 5. Given antidepressants. 6. Change the environment into a healthy environment and provide support (motivation) especially for low and moderate psychopaths. 7. Psychoanalysis depending on needs. 8. Psychodrama depends on needs. 9. Psychosurgery.



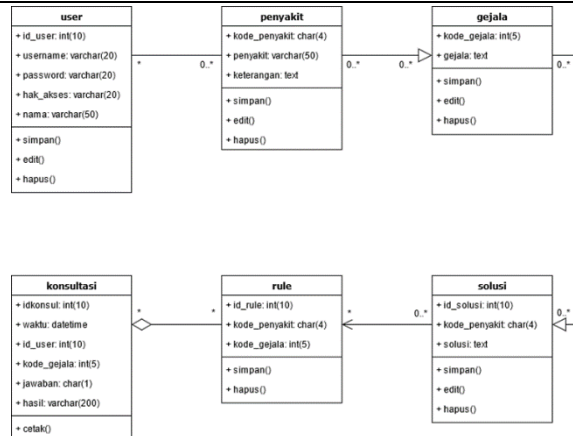


Figure 2. Class Diagram System

Activity Diagram

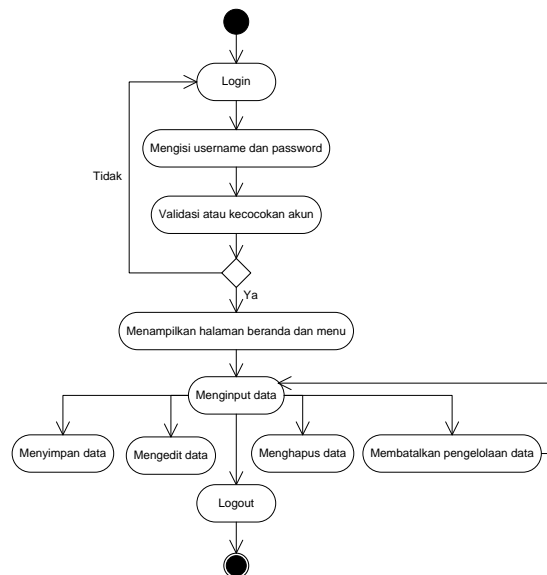


Figure 3. Activity Diagram Administrator in the System

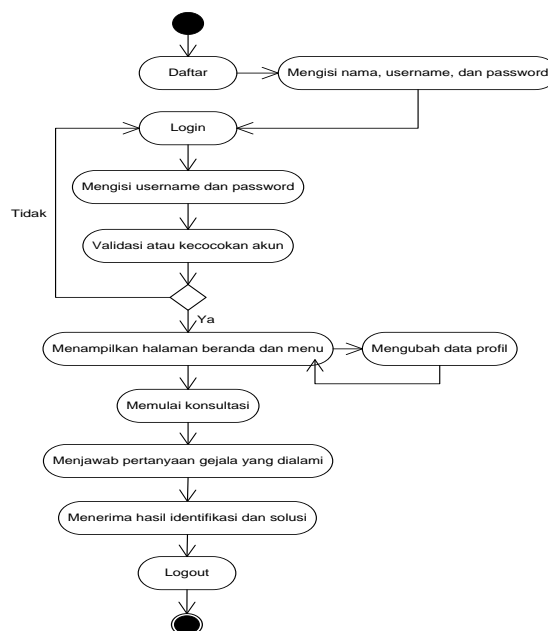


Figure 4. Activity Diagram User in the System

### Sequence Diagram

Sequence diagrams are diagrams that visualize processes or flows that occur in software and predict how a system will respond. Sequence diagram is also a diagram that defines the use case in detail and shows an object and components will correlate with each other. The following is a form of a sequence diagram.

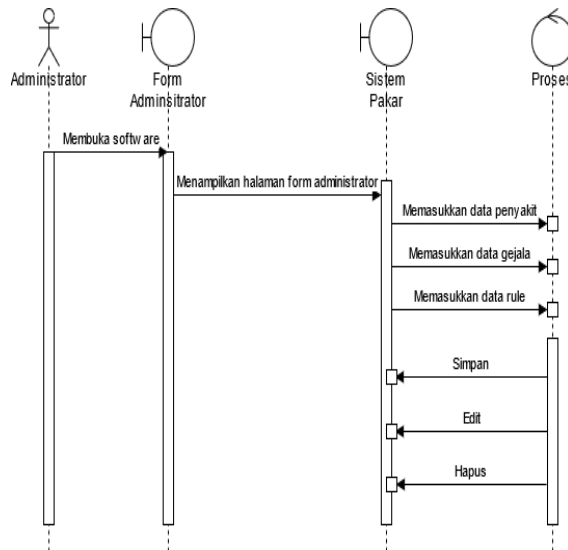


Figure 5. Sequence Diagram Administrator in the System

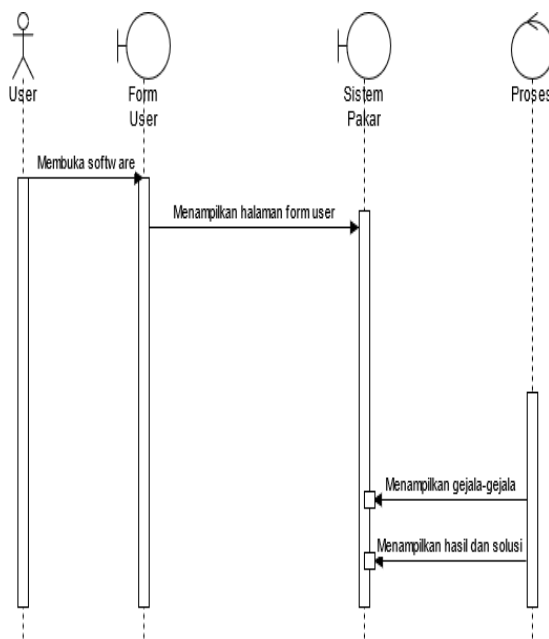


Figure 6. Sequence Diagram User in the System

### Application Trial

#### 1. Administrator and User Login Pages

This page is an interface page that gives administrators and users access to the expert system. In general, the login page asks to enter a username and password.





c. Disease Data Input Page (Levels)

This page is an administrator page that can input disease codes, levels, and descriptions.

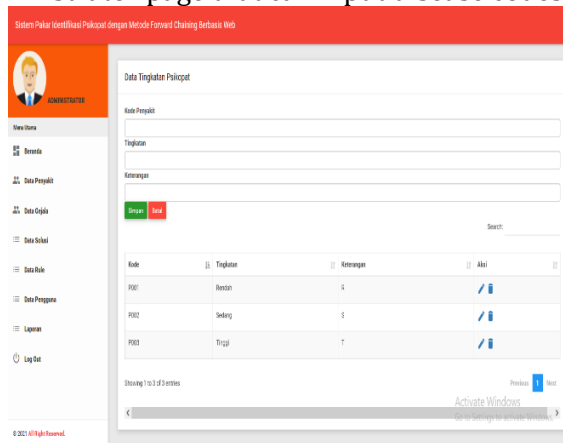


Figure 10. Input Illness Data Page (levels)

d. Disease Data Edit Page (Levels)

This page is an administrator page that can edit disease codes, levels, and descriptions.

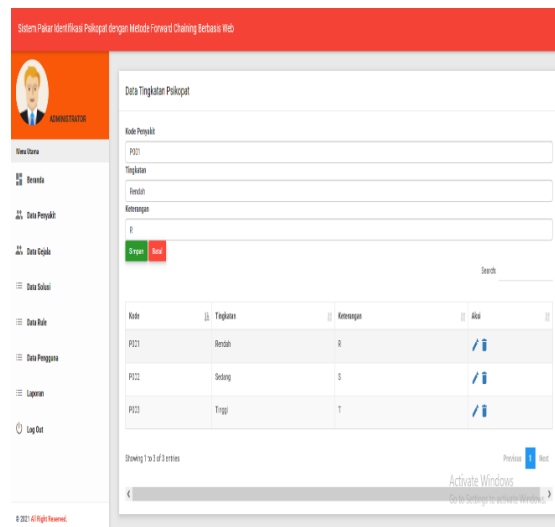


Figure 11. Page Data Illness Edit (levels)

e. Symptom Data Input Page

This page is an administrator page that can input symptom codes and symptom information for psychopaths.

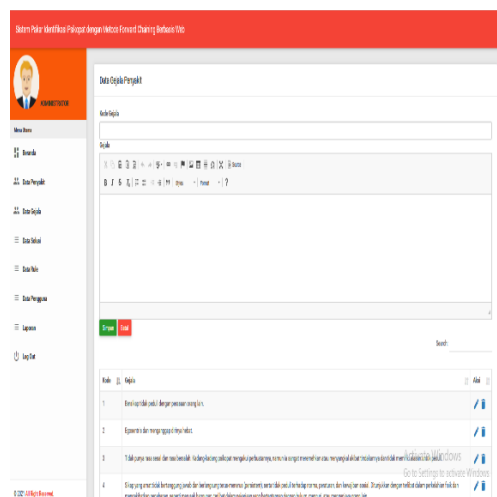


Figure 12. Input Symptoms Data Page

f. Symptom Data Edit Page

This page is an administrator page that can edit symptom codes and symptom information for psychopaths.



Figure 13. Symptom Data Edit Page

g. Solution Data Input Page

This page is an administrator page that can determine solutions to psychopaths.

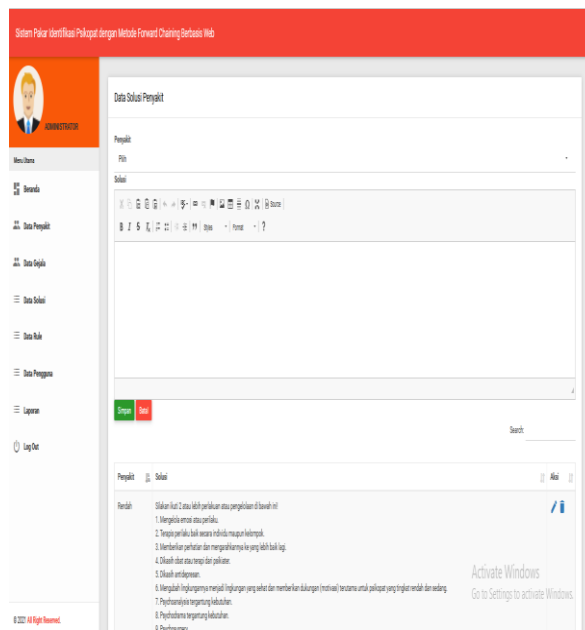


Figure 14. Solution Data Input Page

h. Solution Data Edit page

This page is an administrator page that can edit solutions on psychopaths.

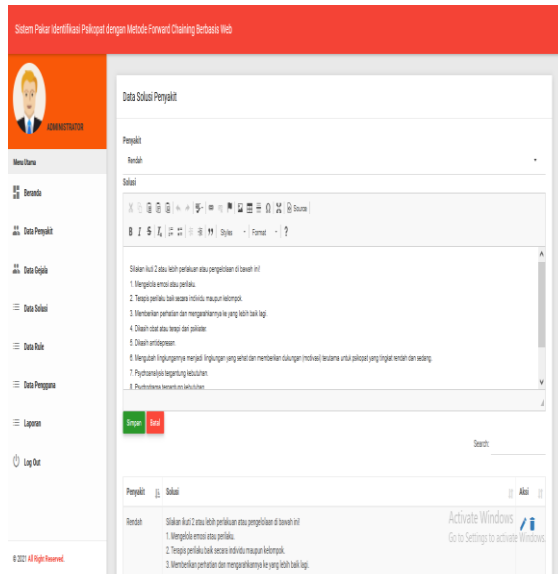


Figure 15. Solution Data Input Edit Page

i. Data Rule Input Page

This page is an administrator page that can input the specified rules.

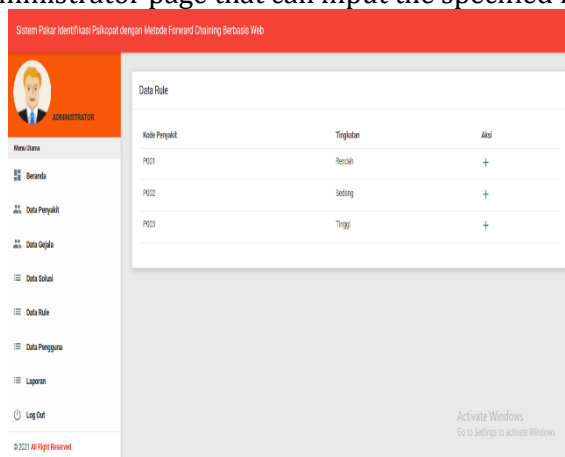


Figure 16. Input Data Rule Page (1)

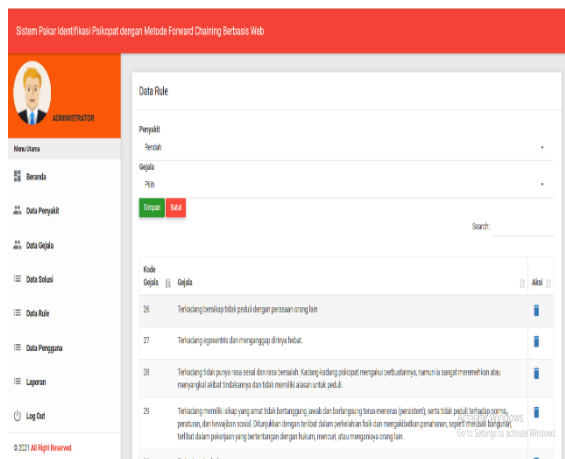


Figure 17. Input Data Rule Page (2)

j. User Data Input Page

This page is an administrator page that can input user data. Users are divided into users of the software and administrators. The addition of users is done by determining access rights first by the user administrator.

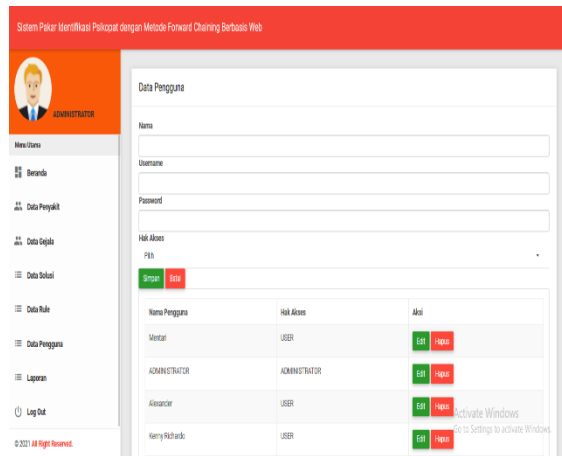


Figure 18. User Data Input Page

k. User Data Edit Page

This page is an administrator page that can edit user data.

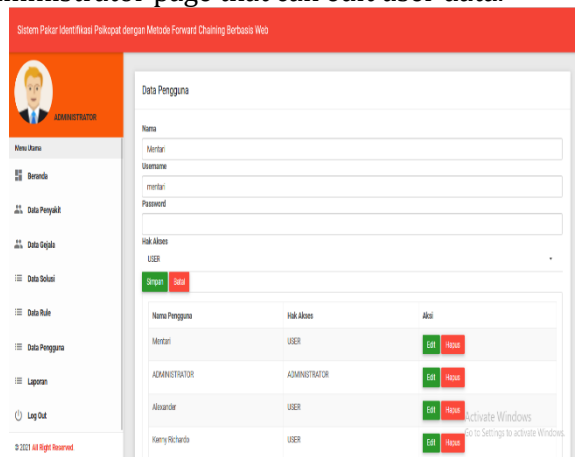


Figure 19. User Data Edit Page

l. Report Page

This page is an administrator page that can see the results of psychopath identification and the results can be printed which can be seen in the Picture below.

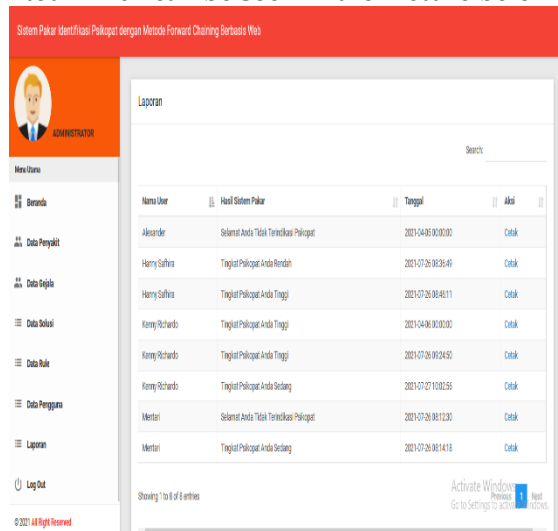


Figure 20. Report Page

m. Report Print Page

This page is an administrator page that can print the results of the consultation which can be seen in the Picture below.

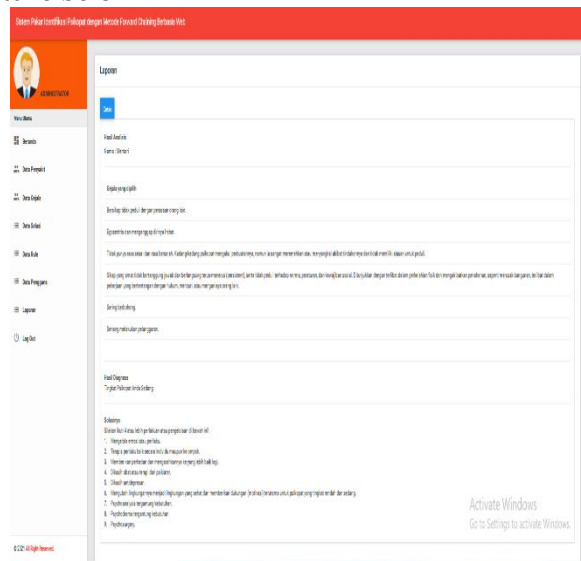


Figure 21. Report Print Page

n. User Homepage

This page is the main page that is displayed to the user as a prospective psychopath after the user has successfully obtained validation on the login page. This home page is accompanied by indicators of the use of this expert system for users who will use it.

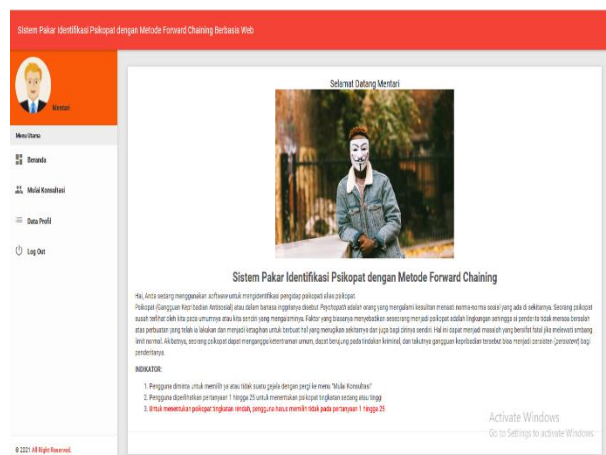


Figure 22. User Homepage

o. Consultation Start Page

This page is a page that contains a series of symptoms that will be determined or selected by the user as a psychopath candidate to get the psychopath identification results.

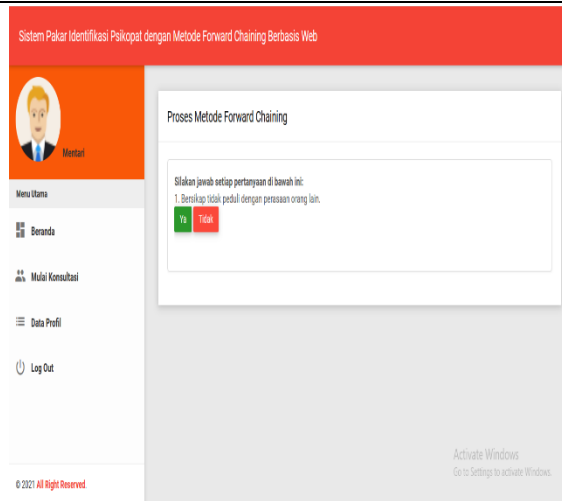


Figure 23. Consultation Start Page (1)

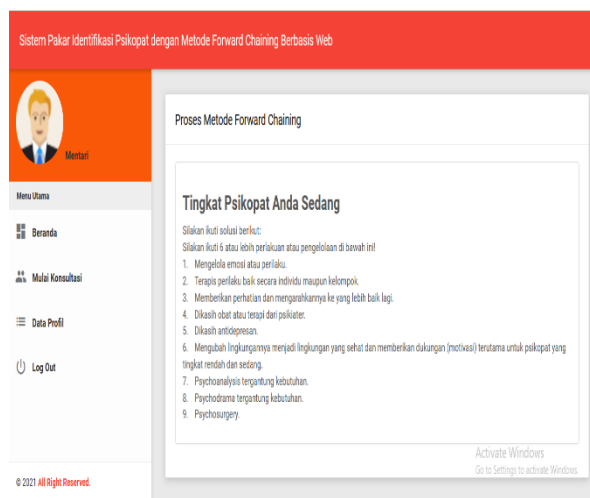


Figure 24. Consultation Start Page (2)

p. Profile Data Page

This page is a page that allows users to change their own identity. Can be seen in the picture below.

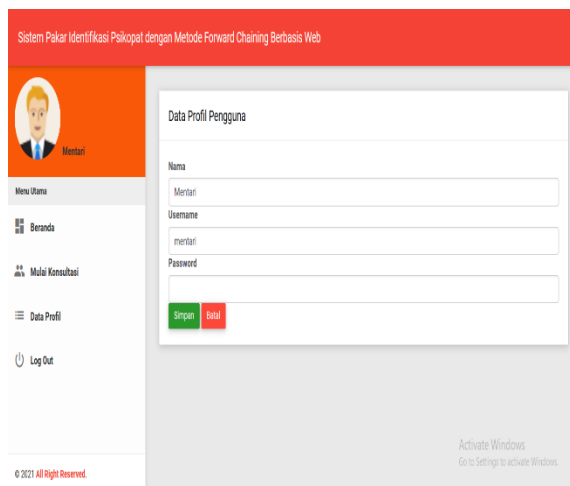


Figure 25. Profile Data Page

**CLOSING  
Conclusion**

After analyzing, making a design, until finally to the stage of testing the system that has been designed in advance which has been described in the results and discussion, it can be concluded that:

1. An expert system can replace the role of an expert who can provide suggestions or problem solutions to users so that users automatically identify a problem and get an initial solution that might help users before ending up with more serious problems.
2. The expert system is made using the PHP and MySQL programming languages because it makes the database (database) neatly organized and with the help of HTML as a container and CSS as a display support. Then in this psychopath identification expert system, it can be seen that each table or file has a primary key in a field that is considered unique to call each other data.
3. The forward chaining method is suitable for use in this web-based psychopath identification expert system because by asking questions first, conclusions can be drawn.

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