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EXPERT SYSTEM TO DIAGNOSE DISEASES IN THE HUMAN DIGESTIVE SYSTEM USING THE FORWARD CHAINING METHOD CASE STUDY OF PUSKESMAS HUTAGODANG HEALTH CENTER

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Abstract

The era that is increasingly developing requires that we have to keep up with the times that are increasingly developing. Meant in medical science, in detecting disease must also follow the current developments. Digestion is one of the organs that exist in humans created by God. The digestive system is present in the body, it is difficult to detect any disease that is in the digestive tract. With this expert system, it is able to make it easier to detect digestive diseases with the help of information technology. And the data makes it easier for medicine to detect this disease. By making applications using WEB, with MySQL and XAmpp databases. By using the Forward Chaining method.

1. INTRODUCTION

The human digestive system is a system that assists humans in digesting the food and drinks they consume into substances that are more easily digested by the body and take in various contents that are useful for the internal organs and parts of the body as a whole. In another sense. The digestive system is the process of changing food and absorbing food essences in the form of nutrients needed by the body with the help of enzymes that break down complex food molecules into simple ones so that they are easily digested by the body.

The digestive system in humans is very important for humans because without digestion in humans how can humans digest food that has been consumed by humans.

The functions of the digestive system include receiving the food eaten. Food is reduced physically, further reduction takes place chemically, absorbs the results of digestion, waste materials that cannot be digested are retained and excreted out of the body. The process of digesting food is very important before food is absorbed or absorbed by the walls of the digestive tract. Nutrients cannot be absorbed in their natural form and are not useful as nutrients before the initial digestion process. Food substances will be prepared to be absorbed through certain processes with the help of certain enzymes in the digestive tract. Suhanda (1984).

therefore to make it easier for doctors to diagnose human digestive diseases by using technology that is currently developing to facilitate work in the health sector, because digestion is one of the most important things in human life.

2. RESEARCH METHOD

The Forward Chaining method is a method of drawing conclusions that starts from facts to test hypotheses towards conclusions. Match facts or statements starting with IF (if) to test the hypothesis. The Forward chaining method searches from a problem to its solution.

Some opinions from experts who explain the definition of the Forward Chaining Method, Opinion of Dahria (2011), a search strategy that starts the search process from a set of data, then looks for a conclusion so that it becomes a solution to the problem. Then there is the opinion of Giarratano & Riley (2004), the

forward chaining method is a method of expert systems that seeks or traces solutions through problems. This method is the opposite of the backward chaining method which performs a search starting from the hypothesis to the facts. And thirdly, Akil's (2017) expression, the forward chaining method is thinking in which the focus of attention starts from known data, which can be used in agents to generate conclusions from incoming perceptions.

From some of these opinions, it can be concluded that the forward chaining method is a strategy for finding solutions to problems from a set of data or facts to generate future perceptions.
Techniques that are often used to determine which rules must be executed, then the rules are implemented. The forward chaining method looks for facts according to the IF part of the IF –THEN rules.

3. RESULT AND DISCUSSION

Based on the description of the problem above, the required system requirements are as follows Hardware, Laptop Intel Core i3, Software, Windows 10, Macromedia Dreamweaver 8, Xampp Control, Adobe Photoshop.

Input Display, contains an overview of the input display that will be generated from the system as follows:

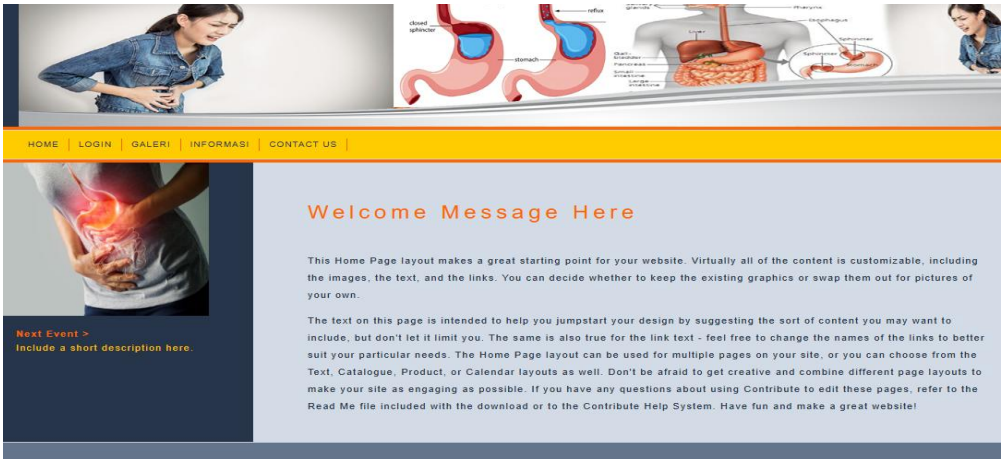

Figure 1. Home view

The main menu display above is the first menu display that appears when run or opened on the http://localhost/lambung/home.php page.

Figure 2. Login Form display

The display above explains how the use of the system is designed. Login here is useful for limiting access from a user and admin.

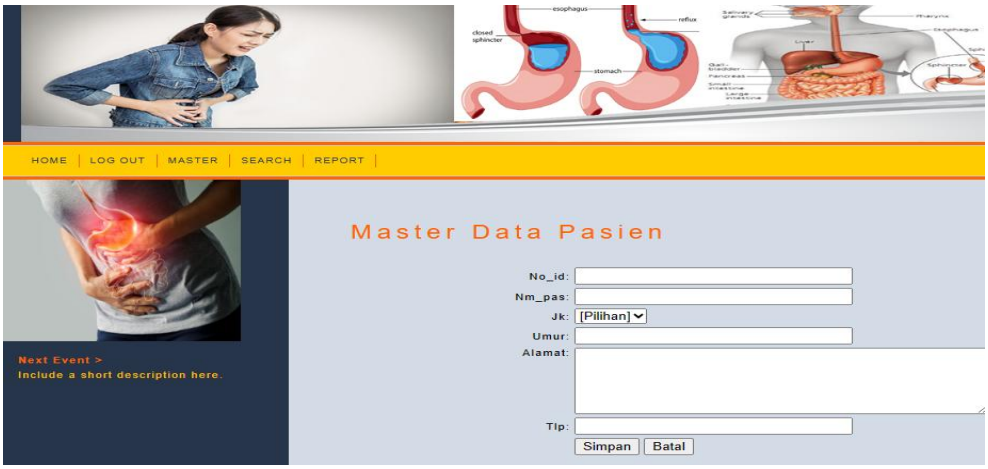

Figure 3. Patient Data Input Display

The display above explains how the admin enters patient data, by filling in some data that must be entered before being marketed.

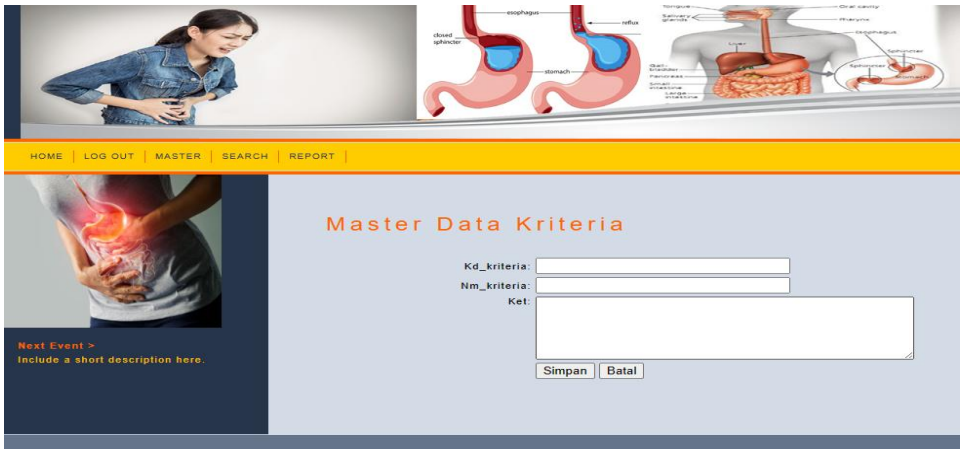

Figure 4. Criteria Data Input Display

The display above explains how the admin enters Criteria data or by filling in some of the required data.

Figure 5. Symptom Data Input Display

The display above explains how the admin enters Symptom data or by filling in some of the required data.

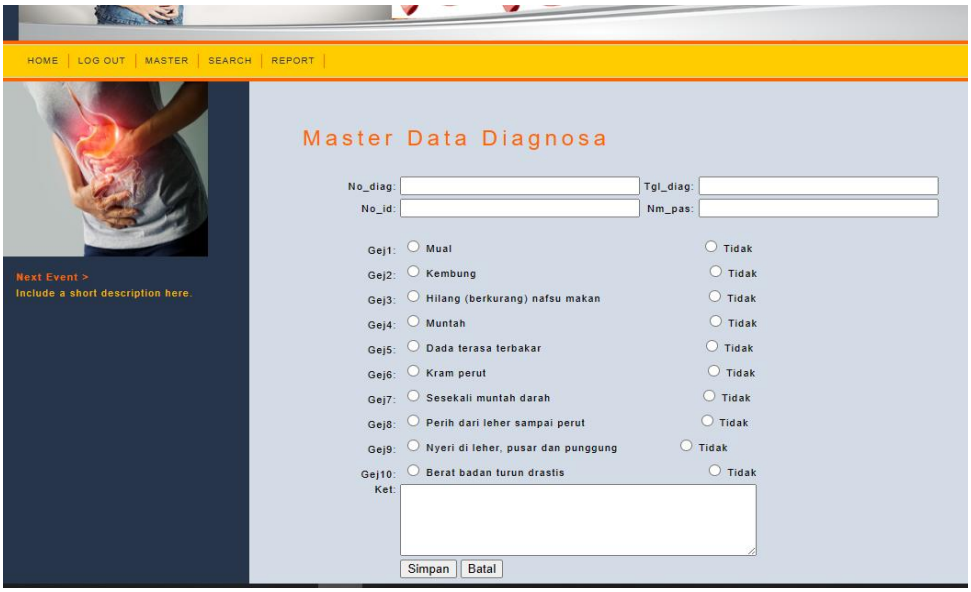

Figure 6. Diagnostic Input Display

The display above explains how the admin enters the diagnostic process data, by filling in some data that must be entered before the results are determined.

Output Display, contains the output display that will be produced by this system as follows:

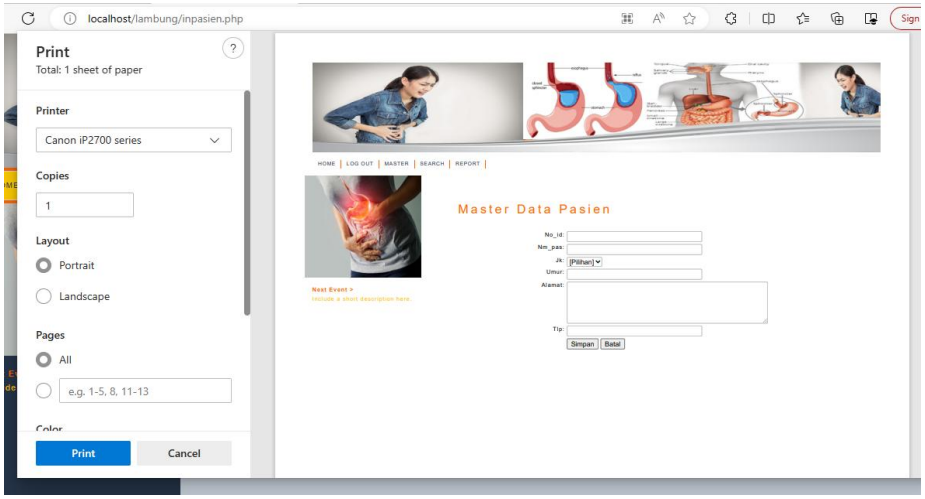

Figure 7. Patient Data Report Display

The display above explains the display for reports from patient data and in this view the admin can print the report directly.

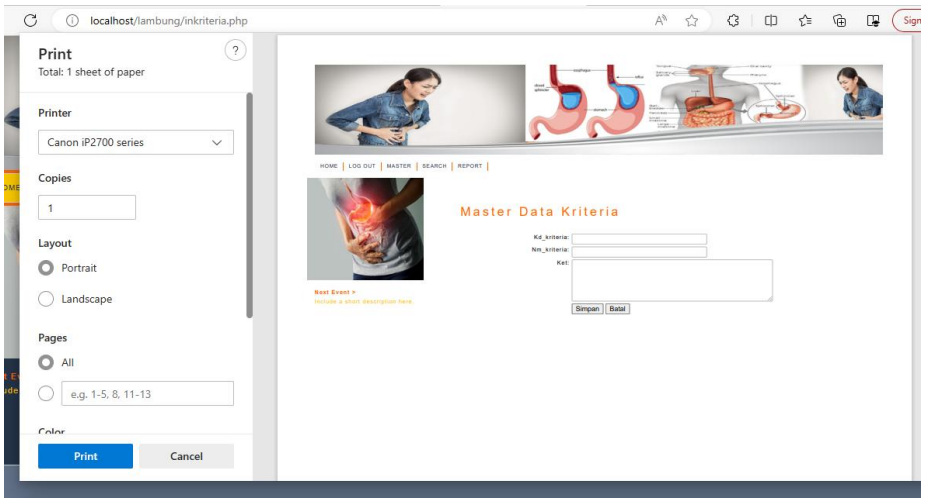

Figure 8. Display of Criteria Data Output Design

The display above explains the display for reports from the criteria data and in this view the admin can print the report directly.

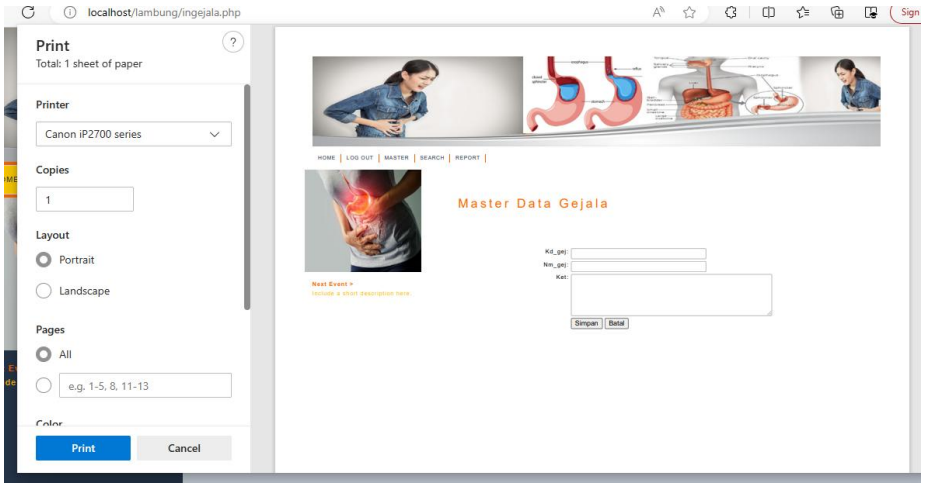

Figure 9. Symptom Data Report

The display above explains the display for reports from Symptom data and in this view the admin can print the report directly.

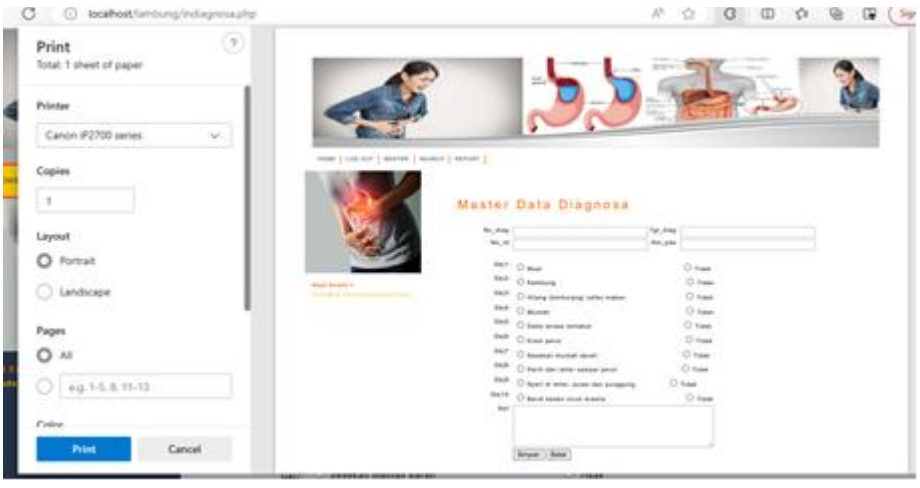

Figure 10. Diagnostic Process Output Report

The display above explains the display for reports from diagnostic data and in this view the admin can print the report directly.

4. CONCLUSION

In discussing the conclusions, here are some conclusions that the author will explain based on the preparation of this thesis writing, namely the design made to make it easier to diagnose digestive diseases, in designing an expert system the results of the diagnosis are presented flexible and responsive. In storing and processing data the author uses the superiority of the PHP and SQL programming languages in which the overall results are stored in a database (MySQL).

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