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An Application For Detection Of Confidential Disease For The Prevention Of Covid 19 Based On Mobile

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An Application For Detection Of Confidential Disease For The Prevention Of Covid 19 Based On Mobile

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Abstract

Coronavirus disease (Covid19) is an infectious disease caused by the SARSCoV2 virus. Most people infected with COVID-19 show mild to moderate symptoms and recover without specific treatment. However, around 4,444 people are seriously ill and need to see a doctor. The purpose of using information technology to create a comorbid population identification system is to create a classification model for residents with congenital diseases for the prevention of Covid19. This study aims to identify people who have comorbidities using information technology according to evidence of congenital disease. The system development method used is the waterfall method. This survey flow describes the stages or survey procedures of the Covid19 classification application which aims to facilitate the classification of residents with congenital diseases. The result find is an application system or website for the classification of disease detection using a mobile website. This website can classify or classify diseases based on the characteristics and criteria of the disease. When conducting tests, this website facilitates and assists in accessing disease data, especially congenital and chronic diseases. According to the results of this website, it is easy for them to see the name of the disease and the symptoms they are suffering from as a form of preventing the transmission of Covid-19.

I. INTRODUCTION

oronavirus disease (Covid19) is an infectious disease caused by the SARSCoV2 virus. Most people infected with COVID-19 have mild to moderate symptoms and recover without specific treatment. However, some people experience severe pain and need to see a doctor.

The transmission of COVID-19 is very fast. COVID-19 has spread to 144 countries in early March 2020. COVID-19 has been designated by WHO as a global pandemic since March 11, 2020, the completion of the number of COVID-19 sufferers worldwide has reached 121,000 people [1].

COVID-19 is transmitted through several methods. First, COVID-19 is transmitted through droplets of liquid that come from coughing or sneezing. Second, COVID-19 is contagious because there is direct contact (touching and shaking hands) with COVID-19 sufferers / sick people. Third, come into contact with objects contaminated with the COVID-19 virus and then touch your mouth or nose or eyes before washing your hands [2].

Covid-19 is a dangerous virus and the number one killer in the world, so far it has not been handled properly. This application aims to help inform not mean delete or change the work of experts, at least being able to convey knowledge about the Corona virus through the system. Using this method, users can find out whether or not they are infected with Covid-19 according to the signs and types of disease suffered by the patient.

In a professional webinar for UMS nurses at one of the universities, Muhammadiyah University, Surakarta, chronic diseases are the main cause of death in Covid-19 patients, with 67% of patients dying from Covid-19 previously suffering from chronic diseases.

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Based on data from Kompas.com in 2020. Details of co-morbidities in Covid-19 patients who died of congenital diseases: hypertension 23.2% true diabetes 16.8% heart disease 11.1% kidney disease 4.8% obstructive pulmonary disease chronic 4.4% other respiratory diseases 2.2% immune diseases 0.8% cancer 08% Asthma 0.4% Liver disease 0.2%. However, patients with comorbidities in Indonesia also show cure rates. The percentage of patients who were declared cured of comorbidities were as follows: Hypertension 11.5% Chronic obstructive pulmonary disease 10.7% True diabetes 7.3% Heart disease 4.4% Asthma 2.2% Other respiratory diseases 1.8% Cancer 1% Tuberculosis 0.8% Kidney disease 0.% Immune disease 0.4% Liver disease 0.4%.

Infection can be prevented by carriers of the virus, including those known as asymptomatic or asymptomatic (OTG) individuals. People without symptoms are basically at risk of transmitting the virus to people with congenital conditions and are more susceptible to serious infections. The use of masks is highly recommended as an effort to prevent the spread of the corona virus.

The spread of infectious diseases such as the COVID-19 pandemic is determined by the relationship between 2 main factors, based on data from the General Guidelines for Facing the Covid-19 Pandemic for Local Governments Prevention, Control, Diagnosis and Management in 2020, namely the ability to transmit pathogens that cause infection and the characteristics of the human population. as a breeding ground for pathogens. History of illness is one of the factors that causes death, congenital diseases that are dangerous if infected with Covid-19 such as diabetes, heart disease, stomach acid, this is one of the chronic diseases that will further worsen the patient's health condition if infected with Covid-19. Usually digital technology is needed in the management of chronic diseases. Not only chronic diseases, like other diseases too, congenital diseases, all kinds of diseases of course. The point is in chronic disease, to support health in today's era is to use IT or information technology.

This technology is about its relationship with the world of health. Health today can not be separated from the role of the world of technology. As for MRI technology, SCAN Thorax, many Health Consultation Applications have been created, the discovery of Healthy Lifestyle Control Applications, and many other benefits and roles in the field of information and communication technology. Methods that work in MRI technology, for example, for example: MRI itself is (magnetic resonance imaging) which is a medical examination tool that uses magnetic technology and radio waves to form images of organs, bones, and tissues in the body. The organs that can be examined using an MRI are: the brain and spinal cord, heart and blood vessels, bones and joints. Another example then there is a CT SCAN Thorax. Thorax CT Scan is a Diagnostic procedure that uses a computer and a rotating X-ray machine to create cross-sectional images of the body. An example of one of the results of his research is the results of a radiological examination of a chest X-ray in patients with pneumonia, which is needed in obtaining an overview of the severity and causes of pneumonia. The use of CT SCAN in patients with pneumonia is very necessary, but must also be supported by other examinations. Likewise with the COVID-19 Diagnosis. Another benefit is that many health consultation applications have been created. As a result of current technological developments, if we have complaints of pain or discomfort we no longer need to go to the nearest hospital or clinic for consultation. Simply by using the application, we have been able to find out what is in our health problems. Not only that, even drug prescriptions can be produced through these online health consulting applications. [3].

Classification is widely used to choose decisions according to new knowledge obtained from past data processing using a calculation of a solving algorithm, this classification is used in the handling of covid-19 by classifying patients who are infected with covid -19 by analyzing the history of congenital diseases from patients who are infected with covid-19 .

Along with the development of technology at this time, many new inspirations have emerged that can help humans receive information. However , using the large number of available news can cause residents to want more adequate and efficient facilities , especially using technology . Therefore, a technology that can adopt the human way of thinking was developed, namely Artificial Intelligence (AI).

An expert system is a system that uses artificial intelligence or. Expert systems combine knowledge and database searches to solve problems. Expert systems resemble human skills which are translated into system form. This ability can help as a result can be used by many people. Expert systems have several categories, namely the development category and the main development category.

Based on the above, a system was created to classify patients with congenital diseases from patients to prevent exposure to the Covid-19 virus. It is important to convey knowledge to citizens about the world of health, and to convey knowledge about the importance of health for ordinary citizens about the Covid-19 virus and congenital diseases that make it easier to be exposed to the Covid 19 virus.

Many people who contract comorbid diseases are not detected by government officials, causing these people interact with COVID-19 sufferers and there is transmission that causes death in comorbid residents. This study aims to build a classification model for residents who have congenital diseases in preventing Covid-19 and design a congenital disease detection application using the help of a mobile web-based application

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II. Related Works/Literature Review (Optional)

Classification

Classification is a systematic grouping derived from a number of objects, inspiration, books, or other objects into exclusive classes or groups according to the same criteria [4]. In everyday life, grouping has been done by humans, this has been done a lot, it is intended to facilitate and streamline the work.

Application

application is a software (software) or program found on a computer or android that operates on a certain system that is created and updated to run certain command operations (M.Prawiro: 2019) [5].

Meanwhile, according to Jogiyanto, the application also has an understanding, namely the use on a computer, instructions or statements that have been made in such a way that the computer or android can make the input process into output [6]. This Covid-19 originated from a wet market that sells various kinds of animals commonly consumed by the Chinese such as rats, bats, etc. (Handayani, 2020: 120).

PHP dan MySQL

PHP is a server-side web programming language that is open source, PHP is also a script that is integrated with HTML and is located on the server (server-side HTML embedded script). PHP is also a script used to create very dynamic web pages, dynamic means that the display page that will be displayed is created when the page is requested by the client. (Anhar 2010: 3).

PHP and MySQL are a collaboration between programming languages and database services that are popular today. The number of sites using PHP reached 78.9%. PHP is a server-side scripting language which designed for web development. In addition, PHP can also be used as a common programming language used onwebsitessuch as Wikipedia, WordPress, Facebook and others. The use of PHP is widely combined with MySQL. MySQL is a multithreaded, multi-user SQL database management system (DBMS) software. (The Web Technology Surveys, 2019). [7]

Expert System

Permatasari I (2017) Says that a diagnosis is a decision reached after a careful study of the symptoms or facts about something [8]. Diagnosis is a term adopted from the medical and medical fields which makes a process of determining the type of disease by using a method. Look for signs or symptoms that arise. In the world of education, the term "diagnosis" is a relatively new or new term.

Coronavirus Disease 2019 (Covid-19)

Coronavirus is an RNA virus using a particle size of 120-160 nm. This virus mainly infects animals, including bats and camels [9]. Before the COVID-19 endemic, there were 6 types of coronaviruses that could infect humans, namely alphacoronavirus 229E, alphacoronavirus NL63, betacoronavirus OC43, betacoronavirus HKU1, Severe Acute Respiratory Illness Coronavirus (SARS-CoV), and Middle East Respiratory Syndrome Coronavirus (MERS-CoV)).

Gejala Covid19

The most common signs are fever, cough and malaise. Other signs such as increased sputum volume, headache, hemoptysis, diarrhea, and shortness of breath may not always occur in all patients. The clinical picture of a chest CT scan looks like pneumonia, but with abnormal features such as acute cardiac injury, ARDS, and the development of opaque glass observed in the subpleural areas of both lung fields, local and systemic. inflammatory process [10]. Below 4,444 are symptoms of Covid-19 virus patients according to the World Health Organization (WHO). COVID-19 patients who experience respiratory problems also experience other symptoms, including:

1. Nausea or diarrhea. The World Health Organization (WHO) reports that about 5 percent of patients worldwide suffer from nausea. According to data published in The Lancet, 3% of Chinese patients suffer from diarrhea. Generally, patients show symptoms of fever at the onset of infection. The study doesn't explain how the virus affects digestion. This symptom is rare because it only occurs in a small proportion of patients (World Health Organization, 2020).

2. The ability to taste or tongue and smell is impaired. The news reports received by ordinary citizens were shocked because many COVID-19 patients claimed to have lost their sense of taste and smell. Based on a survey of 59 patients in Italy, these signs are rare because only 19%. Patients who lost any of the sensations, 34%. Experts have yet to come up with a perfect answer, but LiveScience estimates the virus infects the lining of the nasal passages. Odor detection cells have difficulty identifying the air that enters when the area is lit. Smell and taste are very dependent on each other. If one sensation doesn't work, the other probably doesn't. Further investigation is needed to find the real cause.
3. According to information from the WHO, if you feel sick, the symptoms of COVID-19 are not only physical but also mental. Many patients complain that they feel sick. Dissatisfaction such as restlessness and feeling sick. According to the journal StatPearls, Characteristics, Assessment, and Treatment of Coronavirus (COVID19), these symptoms generally go unreported. Anxiety, loneliness, stress, and anxiety during the quarantine process cause feelings of unease. Information about the current corona virus can cause anxiety disorders in humans. (WHO, 2019).
4. Based on data from the Centers for Disease Control and Prevention (CDC), patients experience a sense of confusion. This confusion is even a symptom or warning sign of someone with COVID 19. Some patients have difficulty pronouncing their names, according to reports from medical professionals in the United States, Austria, Italy, Germany and China via the New York Times. Other symptoms are less responsive to doctors and resemble people who are dizzy. This symptom is very dangerous because you can be confused by what is happening to your brain. The coronavirus can affect important organs, such as the brain, in very dangerous ways. With this symptom of confusion, it can be difficult to understand why. Low oxygen flow to the brain causes confusion. Health professionals need to be very careful if the patient is in this condition because of the risk of seizures (World Health Organization, 2020).
5. Headaches: when you catch a cold, you often feel dizzy or lightheaded. These symptoms include the abnormal symptoms of COVID 19. According to a study by The Lancet, 8% of patients suffer from it. In some people, this headache can occur due to fever symptoms. High body temperature can cause headaches and dizziness.
6. Muscle aches and muscle aches can indicate various diseases. According to the WHO report, that percentage is about 14% of COVID-19 patients who have it. This condition is an early sign of an infection attack. If you experience these symptoms and are accompanied by fever and dry cough, rest and self-isolate (World Health Organization, 2020). 7. Runny nose: Similar to influenza, but COVID-19 rarely causes colds to colds. The World Health Organization (WHO) says that only about 5 percent of patients suffer from this condition. Patients generally experience symptoms such as sore throat and nasal congestion (World Health Organization, 2020)

Android

U.Maya (2019) says, android is a collection of software for mobile devices that includes an operating system, middleware, and major mobile applications [11]. Android gives its users very wide access to use libraries and tools that can be used to create better software.

III. METHODS

Data Collection

Literature or literature study is a study conducted to collect data and theories for the purpose of writing this research by reading books about android applications, journals, theses and references related to research, as well as journals supporting data on covid 19. According to Arikunto (2006) study writing is a strategy to collect information through searching data through books, magazines, papers, and other writings which are expected to form a hypothetical premise [12]. This study also used a questionnaire. As indicated by Sugiyono (2011) polling is an information gathering procedure that is carried out by giving a lot of questions or articulations that are arranged to the respondent to be addressed [13]. At this stage of the questionnaire/questionnaire, the researcher made an observation by distributing the questionnaire with the aim of making it easier for the management capacity of the surrounding users and what their current opinion about the management was.

System Development Method

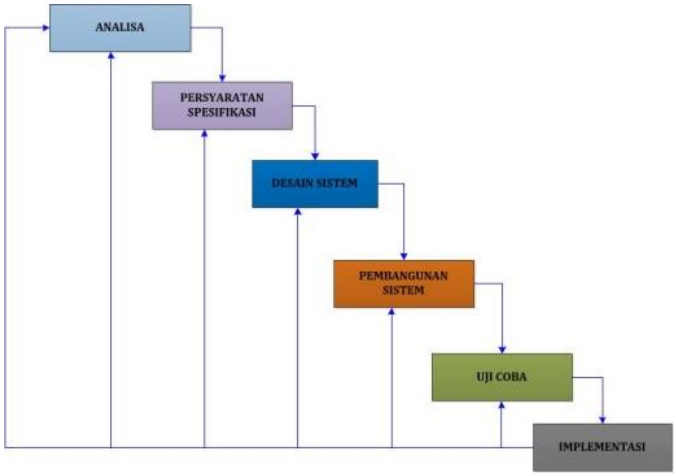

Figure 1 Waterfall Method

is methodology a sequential development process that flows like a waterfall through all phases of a project (analysis, design, development, and testing, for example), with each phase actually completing before the next one begins.

This method contains several stages as follows: 1) Analysis. In the analysis stage of data collection before it is built, it is an obligation before entering the design stage to form an application with the analysis to make the system built to be right on target as desired. The main purpose of this analysis is to determine all things about the work done by the system to carry out an analysis that includes a feasibility study and needs analysis.

1. **Requirements Specification**
   At this stage the interface design will be designed according to the needs and adjustments to the system or device.
2. **System Design**
   In this term, several experiments were carried out to test the system whether the system was running well and there was no damage and was checked before entering the implementation stage. System design serves as the management after all analysis of various development systems and all the requirements needed by all applicable systems. These requirements prepare a design to build a good implementation.
3. **Implementation**
   This stage is the application and operation of the system by the user after going through several stages above.
4. **Maintenance**
   At this stage the system will be monitored and monitored regularly and checked so that the system always runs well and does not experience damage or crashes during operation. This maintenance is carried out to obtain several separate reasons for detecting problems that arise during ongoing testing, maintenance is carried out due to changing business strategies in the system so that maintenance can trigger changes that occur in programs that have been made, and so on [14].

Research

Flow The flow in this study describes the stages or research mechanisms for the Covid-19 classification application which aims to make it easier to classify residents who have congenital diseases. The following is a flowchart of the research that starts from preparation in determining the objectives of the research to be carried out until finally the results that will occur at the end are intended for this research.

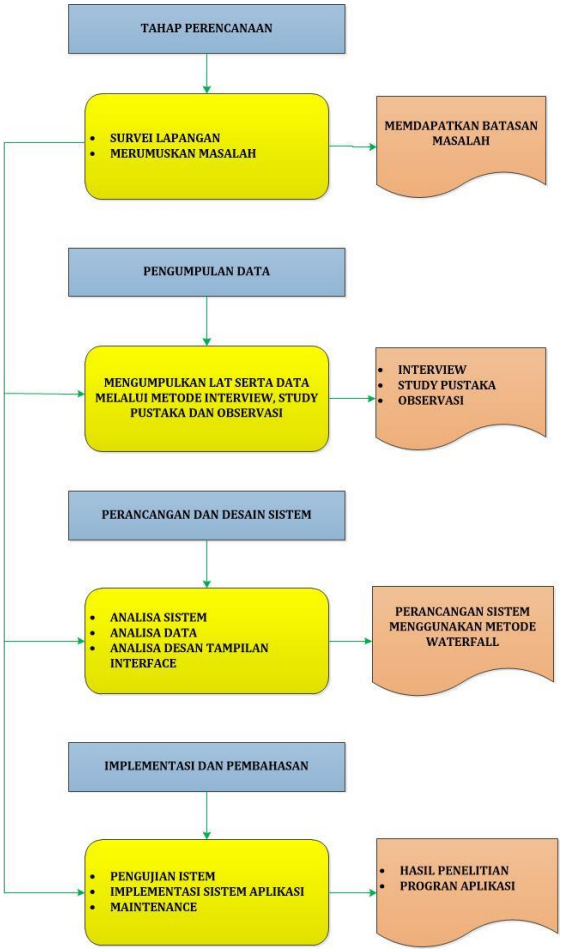

Figure 2 flowchart research

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IV. RESULTS

Design

System design is an illustration ofblue print, which becomes aguidelinefor programmers in making applications [12]. The design used is a Flowchart.

Implementation

of this Disease Classification Design using a mobile application or website link. To try to run the application, the smartphone used is the Xiaomi poco x3 which uses the Android operating system or a mobile website.

a. Main Menu Display

menu display contains 4 menu bars in descending order, namely:

1. Home
2. Profile
3. Guestbook
4. Contact us

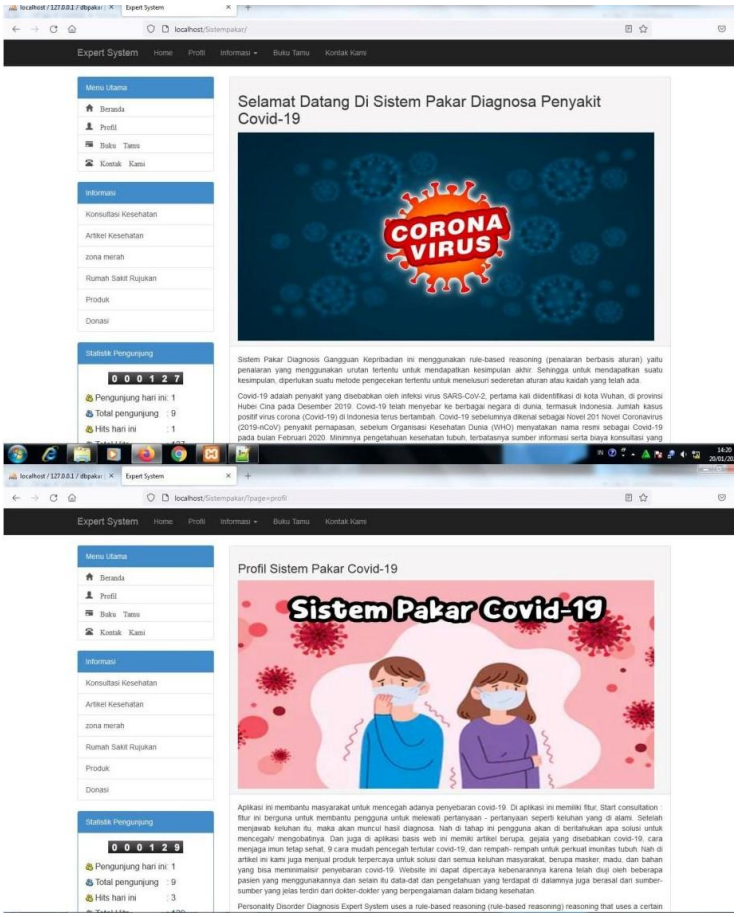

Figure 3 Main Menu

b. Menu Display Page 2

display page 2 contains guestbook, name, email, message content.

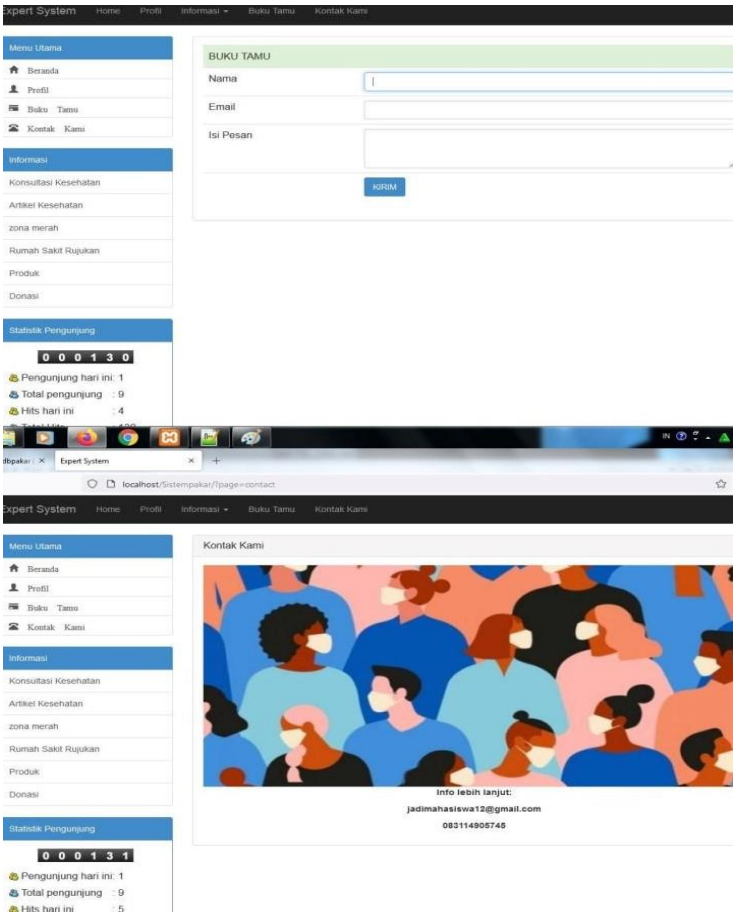

Figure 4 Page 2

c. Display of Diagnostic List Menu

Display of diagnostic list menu contains name, gender, address, occupation.

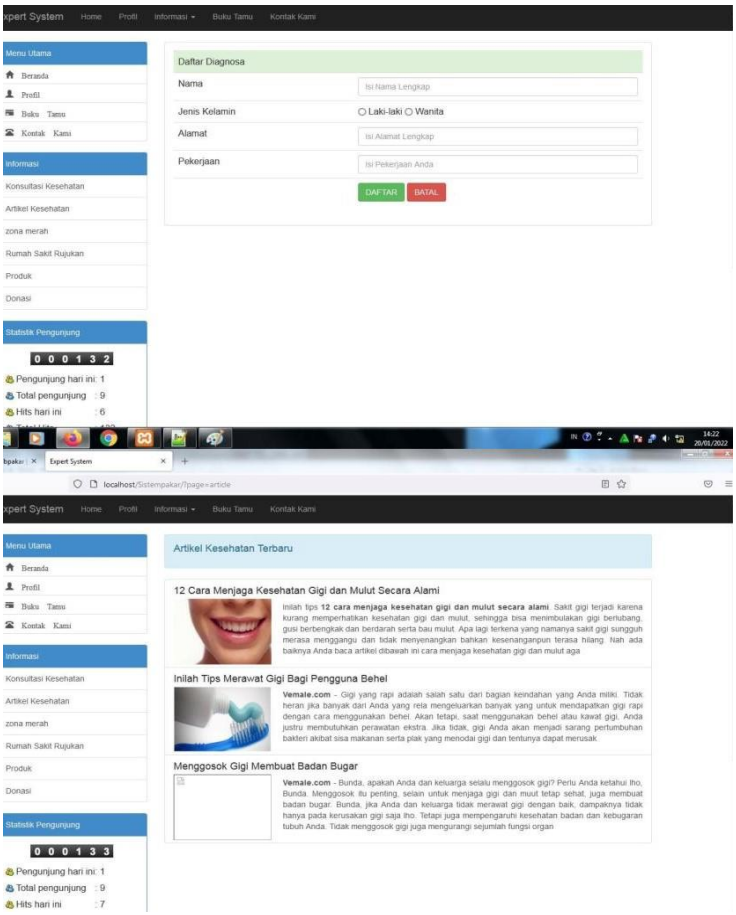

Figure 5 Diagnostic

d. Menu Display Diagnostic Results

results menu display contains the results of the last analysis, the name of the disease and the symptoms.

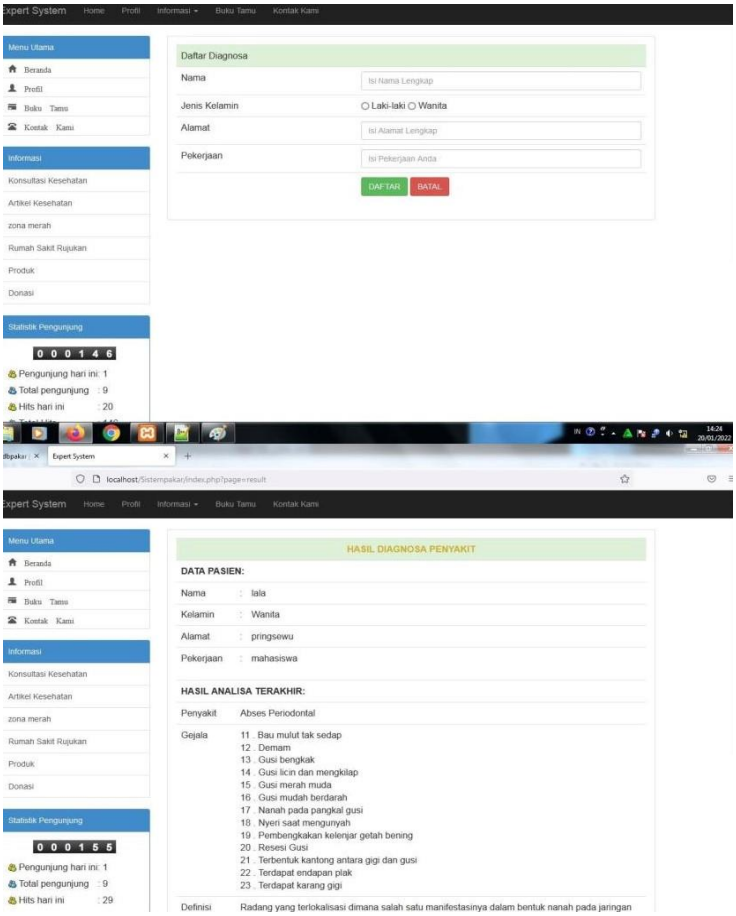

Figure 6 Diagnostic Results

e. Menu Display Output Results

Display the output results menu contains in Figure 7 below is the display of the output results from the diagnostic results menu. The results of this output display the results of the diagnosis of the disease name, the name of the patient data such as the patient's name, patient gender, address, occupation. Then, the results of the last analysis such as the name of the disease, symptoms, definitions, solutions.

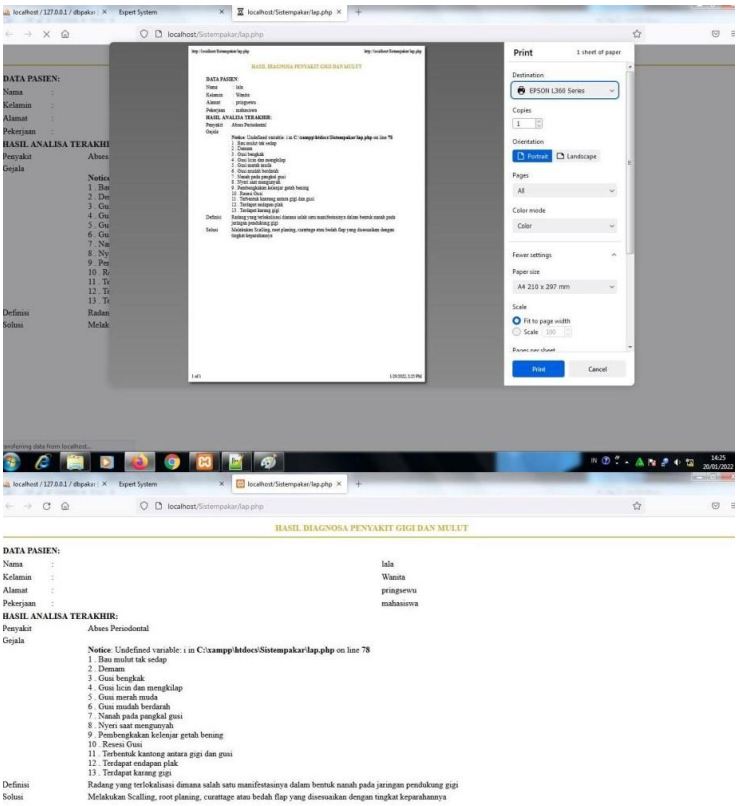

Figure 7 Output Results Menu

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V. CONCLUSIONS

After analyzing the design and discussion of the implementation that has been carried out in designing the Classification of Citizens Based on Congenital Diseases for the Prevention of Covid-19, it can be concluded as follows: This research designs and creates an application system or website for classifying diseases by using the following methodsmobile websites. This website can classify or classify diseases based on the characteristics or criteria of the disease. In the implementation of testing, this website facilitates and assists in accessing disease data, especially congenital and chronic diseases. Because according to the results of this website, it makes it easier for them to check the name of the disease and what symptoms they are suffering from or are experiencing

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