

The Highest Retail Price Checker for Web Based Medical Equipment and Necessities

Muhammad Daffa Nugroho

Computer Science Department, School of Computer Science,

Bina Nusantara University,

Jakarta, Indonesia 11530

muhammad.nugroho005@binus.ac.id

*Correspondence: muhammad.nugroho005@binus.ac.id

Abstract – In the business world that is in medical equipment and staples for customers, the availability and also the need for data is also very important. As time goes on, the data is getting more diverse, which makes various products that are uniform but have significant price differences. This triggers confusion for customers to choose a product, so a price checking application is needed. The purpose of this report is to create a price comparison website application that displays the best prices for medical equipment products and staples. The data collection methodology uses Ideation which collects related journals, books, and credible sources. The application design methodology uses the Waterfall method for web development and maintenance. Product data retrieval is done by using the HTML Web Scraping method. How to test the application is done by Alpha Testing and Beta Testing and also Checking Input Output with BlackBox Testing. From the results of data collection and Web Development PriceCheck provides benefits where customers can find out the best price for the product they are looking for which is also available at the right store.

Keywords: Ideation; Waterfall; HTML; Web Scraping; Alpha Testing; Beta Testing; Black Box Testing

I. INTRODUCTION

Indonesia is currently facing a COVID-19 pandemic. Consumer needs in buying an item during this pandemic are increasing sharply. People are competing to buy medicine, medical equipment, basic needs to anticipate the scarcity of goods to be purchased. This talkative incident in buying something has happened twice, namely at the beginning of 2020 and mid 2021. This is triggered because many out there are spreading fake news or commonly called hoaxes. The term hoax itself is news that contains things that are

uncertain or not in accordance with existing facts (Juditha, 2018)^[1]. Several fake news that made the public nervous and were released by the Directorate of Information Application Control, Directorate General of Information Applications, Ministry of Communication and Information of the Republic of Indonesia on July 11, 2020, included 931 cases (Julianus Edwin Latupeirissa, 2021)^[2]. Social media has changed the way we examine news and production behavior by blurring the contours between professional journalists and users (Rahayu, 2020)^[3]. The news that has been circulating can change people's mindset about buying an item, especially medical equipment and basic necessities.

Medical equipment is widely used in various aspects of health services such as diagnosis, prevention, screening, monitoring, and rehabilitation therapy (Faruq, 2017)^[4]. Health services for the community are not possible without medical equipment (Jamshidi, 2014)^[5]. Medical equipment is a category of goods that is in great demand by the public during this pandemic. Sales of medical equipment have greatly increased, even at certain moments, they can become rare items due to being hunted by the public. Basic goods are a category of goods that are important for people's lives. Almost every day people are in direct contact with basic necessities. This can be seen from the total public expenditure allocated for food reaching 60% (Nuryati, 2016)^[6]. Many basic necessities are used to support people's lives and cannot be replaced by other goods. During this pandemic, basic necessities include items purchased by the public. Basic necessities will usually be processed into daily food, either for personal consumption or for resale. Changes in people's mindset in buying an item cannot be avoided. People became very panicked and immediately hunted for items related to medical equipment and basic needs or what is often known as panic buying. Panic buying can occur due to negative feelings such as fear, feelings of

uncertainty or doubt, and a sense of panic that underlies a person to act to buy an item in excess (Lins, 2020)^[7]. Uncertainty in the information provided by the government will give the public a separate assessment of the situation that is received excessively so that it is difficult for people to make rational decisions and will gradually weaken public trust in the government (Octaviani, 2021)^[8]. Public trust is a form of confidence and availability in taking actions both for one's own interests and for others based on trust (Lewicki, 2006)^[9].

In economic life there are always terms of demand (demand) and supply (supply) that are interconnected (Hidayah, 2020)^[10]. Demand (demand) is the amount of an item needed within the scope of the market with a certain price level, income level, and period. Supply is the amount of an item offered by the seller within the scope of the market in a certain period and at a certain price level (Fatimah, 2018)^[11]. Demand (demand) and supply (supply) have an impact that makes the circulation of goods in the market scope. Without supply and demand, the circulation of goods will stop and the effect will be to hamper the daily activities of people. Prices and supplies of goods can be seen from the balance that occurs between supply and demand in a market (Eko, 2009)^[12]. If the balance between supply and demand does not occur, there will be a moment where prices soar because of limited stock. People's interest in buying an item is not proportional to the amount of stock in the market. This moment is widely used by irresponsible sellers to increase the price of an item and the impact is that many people are anxious about the unreasonable increase in the price of goods. Medical equipment items such as medicine, oxygen, masks, and basic necessities are items that have the risk of rising prices during the current pandemic. Indonesia itself has anticipated the price increase by making a policy of the highest retail price. This policy is contained in the regulation of the minister of health of the republic of Indonesia number 98 of 2015 concerning the provision of information on the highest retail price of drugs, while for basic goods the government has regulated the regulation of the minister of trade of the republic of Indonesia number 7 of 2020 concerning reference prices for purchases at the farmer level and reference prices. sales at the consumer level.

One of the solutions given to overcome the problems mentioned above is a web application that can display data for examiners of the highest retail prices for medical equipment and basic necessities which have a positive impact. Where to provide assistance in knowing market price information so that people are aware of market price games for goods, especially medical equipment and basic necessities. People also don't need to bother to access many websites to find out the high retail price of an item. it is enough to open a website that accesses the required information. Web scraping is a method for retrieving a semi-structured document from the internet which is generally a web page in a markup language (HTML and XHTML) and then analyzing the document to retrieve some data that can be used for other purposes (Turland, 2010)^[13].

Web scraping is very helpful for users because it can save time and effort in finding data circulating in cyberspace. Web scraping is usually used by sellers in online shops to collect data from competitors. It is undeniable that application makers also use the web scraping method to collect circulating data. Using the web scraping method can be an effective solution if done properly.

The aim of this research is to obtain a web application that can display information on the circulating retail prices of goods related to medical equipment and basic necessities. The existence of this application will have a positive impact on the community in receiving accurate and reliable information. This can increase public awareness of sellers who are naughty in playing market prices. With increasing public awareness of market prices, unscrupulous sellers must think twice when they want to increase the price of goods, especially medical equipment and basic necessities. People also don't need to bother accessing many websites to find out the highest retail price of an item. It is enough to open a website to access the required information. The public can also play an active role in submitting reports to stores that have raised prices too high.

II. METHODS

The method used in this research is to take data from the marketplace and credible sources from the government. Based on this data, the website will filter out shops that are committing fraud or raising prices above the government-set price. For the development and maintenance of the website using the waterfall method. In testing the website to check according to the input and output using black box testing.

2.1 Application Design Method

This application will be made on a website basis. The research methods used in designing this application include:

1. The data collection method consists of collecting ideas, the process of collecting ideas or what is commonly called ideation. Then collect data by collecting theories originating from journals, books and related credible sources, as well as conducting research on available data validation.
2. The application development method, using the Waterfall method, which consists of several parts, namely:
 - **Analysis :**
Is part of the overall method of data collection.
 - **Design :**
It is part of making mood boarding for design inspiration from UI/UX, the process of making wireframes to become a web design framework, carrying out the web design process based on previously made wireframes, carrying out the prototyping process of designs that have been made.

- **Coding:**

It is a coding process for the frontend, collecting marketplace data with web scraping techniques, and doing the coding process for the backend.

- **Testing:**

Is the process of deploying to a domain that has been provided.

III. RESULTS AND DISCUSSION

1. First step we must login to access the website, from here user can sign in, sign up, and forgot password.

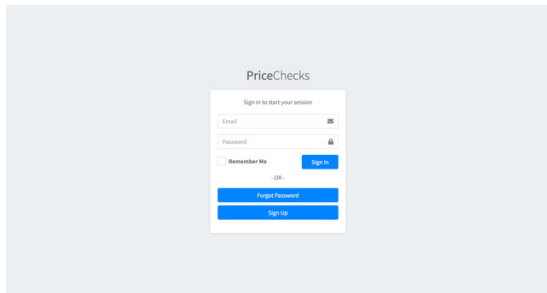


Figure 1. Login Page

2. User must be filled this form registration to access member.

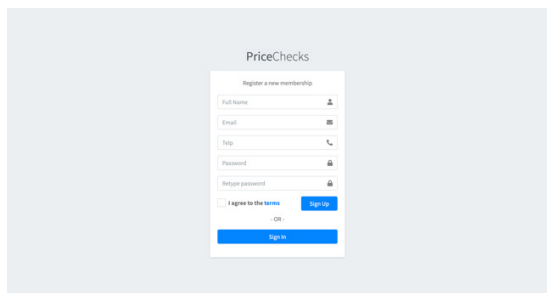


Figure 2. Registration Page

3. To forget the password, the user must have an account first and enter the email that has been registered after that the user will receive a link to reset the password.

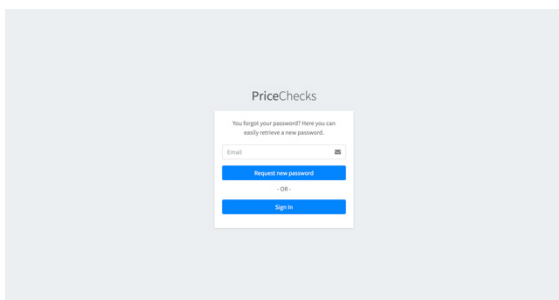


Figure 3. Reset Password Page

4. After successfully login, in navigation bar user can access to check product, check shop, or report shop. user can directly search product or shop from home page based on search by.

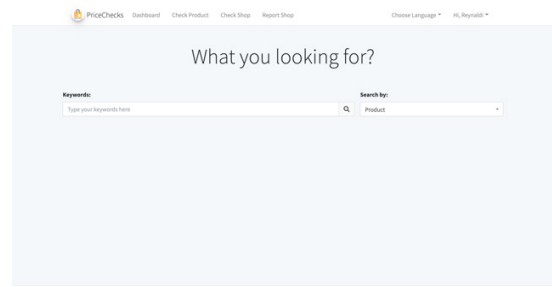


Figure 4. Home Page

5. Example search from Home Page.

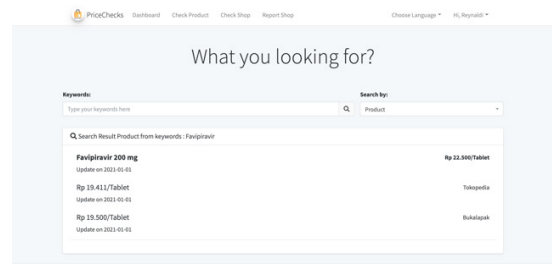


Figure 5. Search from Home Page

6. From this can directly search product.

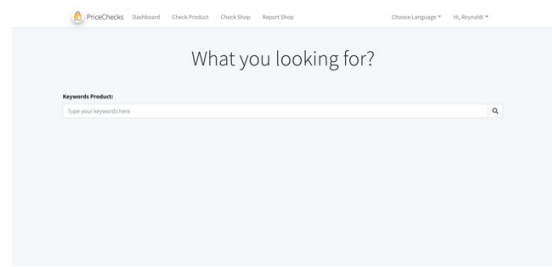


Figure 6. Product Page

7. Example result from Product Page.

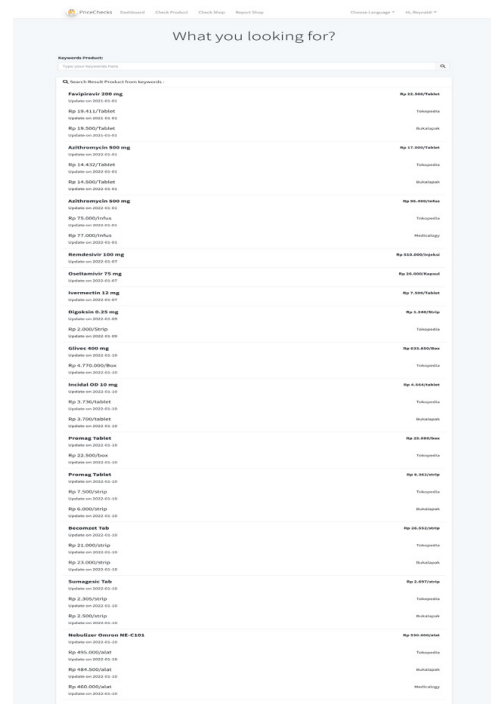


Figure 7. Result From Product Page

8. From this can directly search shop. Example result from Product Page.

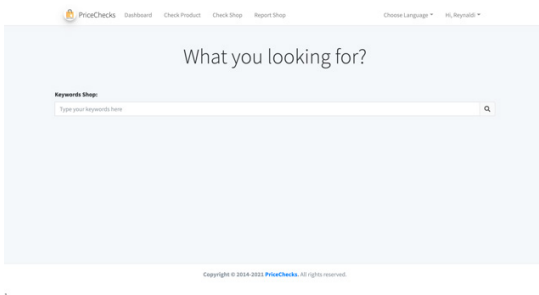


Figure 8. Shop Page

9. Example result from Shop Page.

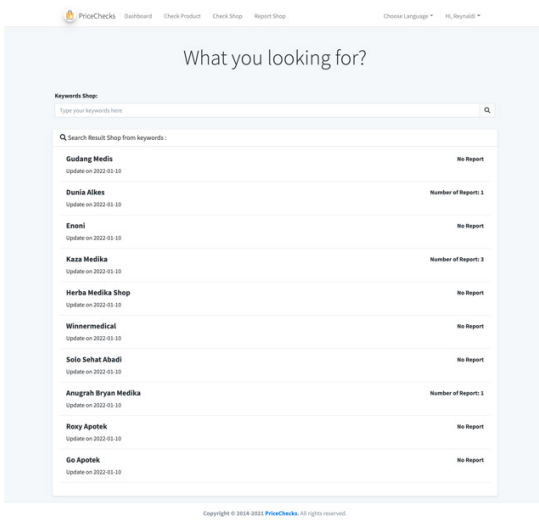


Figure 9. Result from Shop Page

10. Users can report stores that have increased prices that have been set so that the government can process them.

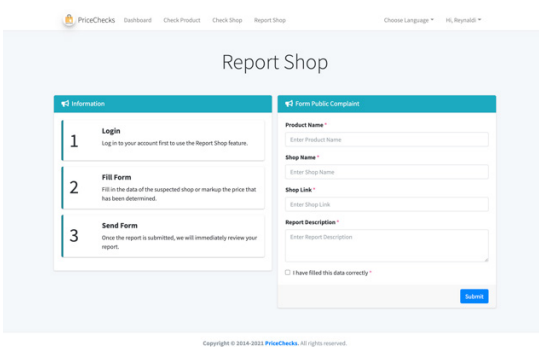


Figure 10. Report Shop

11. User can change their name and their phone number.

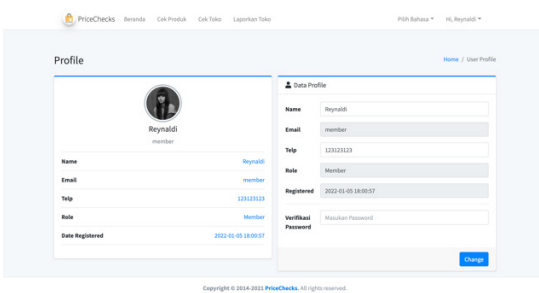


Figure 11. Profile Page

IV. CONCLUSION

As technology develops, some people do not know about the price benchmarks that have been set by the government so that those who own shops take excessive profits which can cause economic inflation. With PriceCheck, it is hoped that people will help the government in developing the country and in the future, it is hoped that this research can be useful for further research as a comparison or data source.

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