

# Design of Nutrition Consultation Service Application at the Teaching Factory Nutrition Care Center of Politeknik Negeri Jember

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**Submission date:** 10-Nov-2024 12:09AM (UTC+0700)

**Submission ID:** 2513791308

**File name:** IJHIS\_Revision\_Paper\_31\_17-27\_2.pdf (1.06M)

**Word count:** 3433

**Character count:** 19717



Article

# Design of Nutrition Consultation Service Application at the Teaching Factory Nutrition Care Center of Politeknik Negeri Jember

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## Abstract

A website is one of the digital healthcare service platforms that can be accessed through smartphones, facilitating the connection between healthcare providers, nutritionists, and the public for healthcare services. The Teaching Factory Nutrition Care Center is a nutrition service center managed by healthcare providers from the Department of Health at Politeknik Negeri Jember. Clients visiting the center can receive health consultations related to tracking their health, adopting a healthy diet, daily nutrition consultations, issues related to stunting in infants and toddlers, as well as consultations for pregnant mothers. The identified problem is the lack of a profile website that provides information to the public and the manual booking of consultations through staff or via WhatsApp. Result: A design proposal for a web-based application is suggested as a promotional and informational platform. It should have features including an information menu for healthy diets related to various diseases, a schedule of nutrition counselors, an online chat with nutrition counselors, and information related to articles or news about health and nutrition. The design process followed the waterfall method up to the design stage. The website design has been successfully completed.

**Citation:** M. C. Roziqin, E. Selviyanti, and D. S. H. Putra, "Design of Nutrition Consultation Service Application at the Teaching Factory Nutrition Care Center of Politeknik Negeri Jember", *IJHIS*, vol. 2, no. 1, pp. 17-27.

**Keywords:** Application, Website, Consultation, Nutrition

Received: 11-01-2024  
Accepted: 20-04-2024  
Published: 27-05-2024



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## 1. Introduction

In light of the coronavirus pandemic that has occurred in various regions of Indonesia over the past few years, we have learned many lessons regarding the achievement of improved accessibility and communication quality, primarily through the utilization of digital technology. Most activities and communications have shifted towards the virtual world, commonly known as the digital world. According to the Ministry of Communication and Information Technology, the government has been increasing the development of public service applications based on digital technology. This digitalization can save up to 50 percent of service time and budget, as well as achieve a 60 percent efficiency improvement in work [1]. In 2023, the Association of Indonesian Internet Service Providers (Asosiasi Penyelenggara Jasa Internet Indonesia) Survey reported that internet penetration in Indonesia had reached 78.19 percent, showing an increase of 1.17 percent from the previous year [2]. This growth can be attributed to the fact that both companies and the general public have integrated internet usage into their daily lives for various activities. Currently, the Internet has become a primary platform that brings together doctors, patients, healthcare providers, nutritionists, and the public for healthcare services [3]. One way to provide digital-based healthcare services is through the use of applications that can be accessed via smartphones. These applications can take the form of either websites or mobile apps. A website is a web page that can display

documents, information, and facilitate a two-way interaction through software with an internet connection [4]. In the modern era, nearly every institution or organization worldwide has a website for information dissemination, communication, and promotion. Politeknik Negeri Jember has a Teaching Factory Nutrition Care Center (NCC). The Teaching Factory Nutrition Care Center (NCC) is a Nutrition Service Center managed by consultants from the Department of Health at Politeknik Negeri Jember. The Teaching Factory Nutrition Care Center (NCC) is designed for the public and employees of Jember State Polytechnic to seek health consultations. The Teaching Factory Nutrition Care Center (NCC) is staffed by 8 (eight) healthcare consultants [5]. Clients who visit the Teaching Factory Nutrition Care Center (NCC) can receive health consultations, including health tracking, establishing healthy diet plans, daily nutrition consumption consultations, and more [6]. The Teaching Factory Nutrition Care Center (NCC) also provides consultations related to stunting, infant health, child health, and maternal nutrition. Stunting is a condition of failure to thrive in toddlers caused by chronic malnutrition during the first 1,000 days of life [7]. Clients who visit the center typically undergo an initial data collection process related to their personal information and then proceed to consult with a counselor based on a scheduled booking. Currently, the booking of consultations is done through WhatsApp. The fundamental issue identified during observations and interviews at the Teaching Factory Nutrition Care Center (NCC) is the absence of a profile website that provides information about the Teaching Factory Nutrition Care Center (NCC) to the general public. The impact of not having a profile website for the Teaching Factory Nutrition Care Center (NCC) is that many people are unaware that Politeknik Negeri Jember has a Teaching Factory Nutrition Care Center (NCC). This profile website is crucial because it offers unlimited reach in terms of time and space. Another issue identified at the Teaching Factory Nutrition Care Center (NCC) is the presence of a web-based service at <https://app.nccpolije.id/> for nutrition consultation with nutritionists, but it cannot yet be conducted online or through live chat. This situation requires individuals to make bookings when they wish to consult with a nutritionist and ultimately contact a staff member manually. Based on the existing issues, it is proposed to design a web-based application as a promotional and informational platform for the Teaching Factory Nutrition Care Center (NCC) at Politeknik Negeri Jember.

The design of this application or website will include a company profile containing all the information related to the Teaching Factory Nutrition Care Center (NCC). The website design will feature several functionalities, including an information menu for healthy diets related to various diseases, a schedule of nutrition counselors, an online chat with nutrition counselors, and information about articles or news related to health and nutrition. A system design is necessary to define the current operational system. Procedures are documented for users, and the design of each page should be carefully considered and created to convey the purpose and objectives of the website's content and facilitate usability [8]. The website design will be created with a modern visual, user-friendly, and responsive interface for mobile use to make it easier for clients to engage in various activities on the Teaching Factory Nutrition Care Center (NCC) website [9].

## 2. Materials and Methods

The research method used in carrying out this project was divided into data collection methods and the method for designing the application in the form of a company profile website. The method used for data collection involved the use of observation and interview techniques. The information or data gathered through these techniques served as the basis for evaluation in the design of the company profile website.

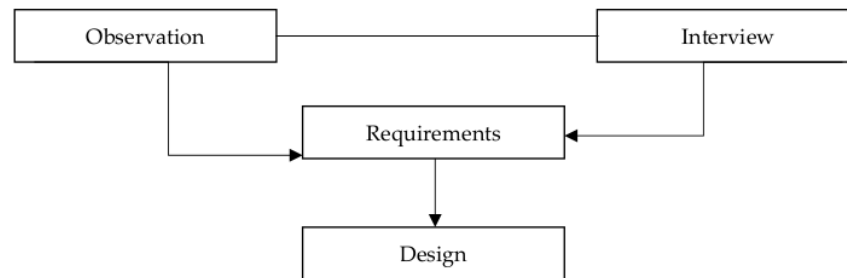


Figure 1. Method Diagram

1. Observation is one of the empirical scientific activities that are based on facts in the field as well as texts through the experience of the five senses without any manipulation [10]. In this observation technique, the researcher visited the Teaching Factory Nutrition Care Center (NCC) directly to observe the data related to daily activities, such as how healthcare consultations were conducted and how services were promoted to the public. This information was subsequently used in the process of designing the company profile website.

2. The interview was a communication between two parties, where one played the role of the interviewer and the other as the interviewee with specific objectives in mind [11]. In this interview technique, the researcher interviewed the Coordinator of the Teaching Factory Nutrition Care Center (NCC) directly regarding the design layout of the website pages and the features present on each page of the company profile website. In the process of designing the website, the researcher had already gathered all the user requirements.

The method for designing the application website's company profile has two stages, namely, the requirements stage and the design stage. Both of these stages are part of the waterfall method [12]. The advantage of using the waterfall method is that the implementation is carried out gradually, resulting in a high-quality information system or application [13]. However, the disadvantage of the waterfall method is that system development takes a long time, resulting in relatively large development costs [14].

1. Requirements began with analyzing what was needed in the company profile website regarding software, hardware, and features. The data collection results through observation and interviews were used to analyze the needs required in the Teaching Factory Nutrition Care Center (NCC) company profile website.

2. Design involved creating the application's interface to support nutrition consultation services at the Teaching Factory Nutrition Care Center (NCC). The design process began with creating system flowcharts, context diagrams, data flow diagrams, entity-relationship diagrams, and interface designs.

With the design of the company profile website suited to the needs of users and counselors at the Teaching Factory Nutrition Care Center (NCC), it was expected to be used as the initial phase in developing the company profile website. This company website has two user categories: counselors as nutrition experts and clients seeking consultation or information on the website's pages.

### 3. Results and Discussion

The fundamental issue identified during observations and interviews at the **Teaching Factory Nutrition Care Center (NCC)** is the absence of a profile website that provides information about the healthcare services available at the Teaching Factory Nutrition Care Center (NCC) to the general public. Based on the interviews conducted by the researcher, consultations with nutritionists cannot yet be conducted online or through live chat. This requires individuals to continue making appointments when they wish to consult with a nutritionist, leading clients to contact staff manually. The specifications for the company profile application of the Teaching Factory Nutrition Care Center (NCC) based on a website are as follows:

1. Online Reservation Specification: A menu on the website page where clients can make online reservations for consultations at the Teaching Factory Nutrition Care Center (NCC).
2. Online Consultation Specification: A menu on the website page where clients can conduct online consultations with healthcare providers at the Teaching Factory Nutrition Care Center (NCC).
3. Healthy Recipe Specification: A menu on the website page that displays healthy food recipes created by nutrition consultants at the Teaching Factory Nutrition Care Center (NCC).
4. Article Specification: A menu on the website page that presents up-to-date articles related to health and nutrition.
5. Profile Specification: A menu on the website page that provides information about the Teaching Factory Nutrition Care Center (NCC).

#### 3.1 Entity Relationship Diagram Website

An ERD (Entity-Relationship Diagram) is a diagram that portrays the relationships between entities in a database [15]. On the company profile website of the Teaching Factory Nutrition Care Center (NCC), there are tables for users, consultations, password\_resets, articles, personal\_access\_tokens, recipe\_category, category, migrations, recipes, and failed\_jobs.

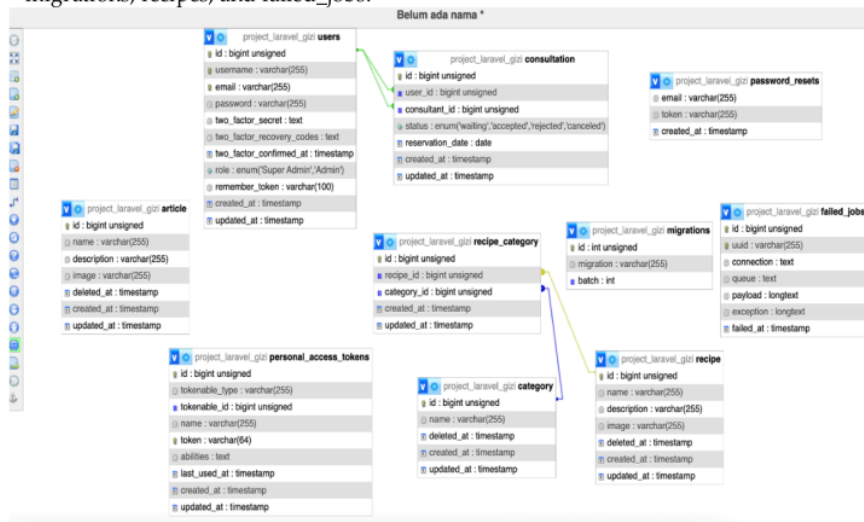


Figure 2. Entity Relationship Diagram of the Website.



The next step is to design the user interface. The user interface that is created is based on the needs of users of the company profile website of the Teaching Factory Nutrition Care Center (NCC). The user interface is not just about pressing buttons on the page, but it involves user interaction with the application, understanding objectives, and producing the desired output for users [16]. The designs presented in this article are the desktop interface designs for the company profile website of the Teaching Factory Nutrition Care Center (NCC). The design of the company profile website of the Teaching Factory Nutrition Care Center (NCC) is divided into several main menus, which will be detailed in the explanations below.

### 3.2 Design User Interface

#### 1. Landing Page

In the figure below, you can see the initial view of the Teaching Factory Nutrition Care Center (NCC) company profile website, offering various features, with the primary features being online consultations and reservations. In the future, additional features such as Body Mass Index (BMI) calculations and various others will be developed.

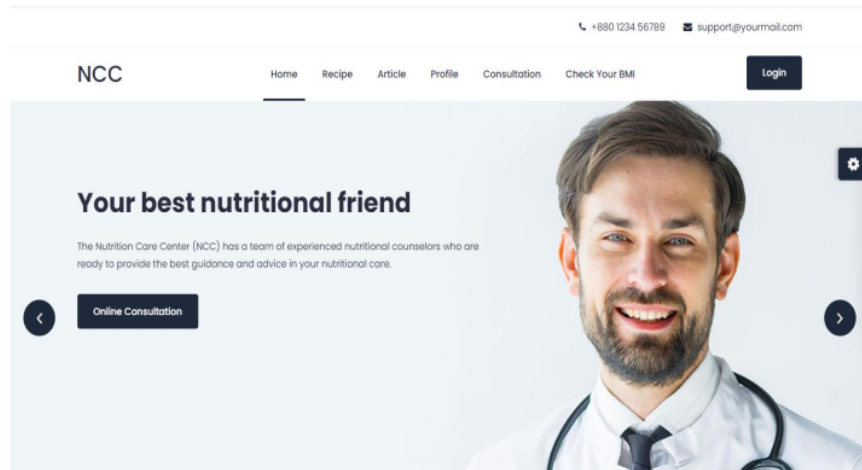


Figure 3. Landing Page Desktop Version.

#### 2. Profile

On the profile page, clients can find information about the history of the formation of the Teaching Factory Nutrition Care Center (NCC), its objectives, and the active healthcare team.

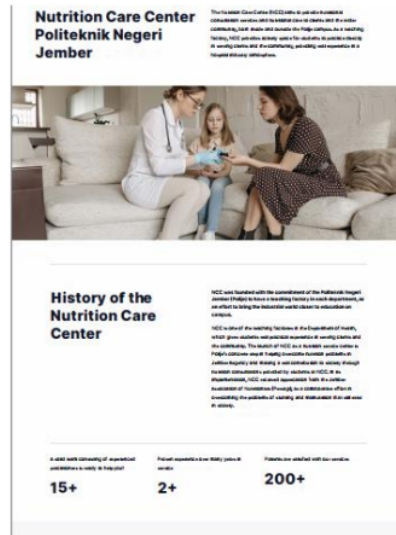


Figure 4. Profil Dekstop Version.

### 3. Reservation

The reservation page allows clients to make appointments in advance with nutrition counselors at the Teaching Factory Nutrition Care Center (NCC) for future healthcare consultations.

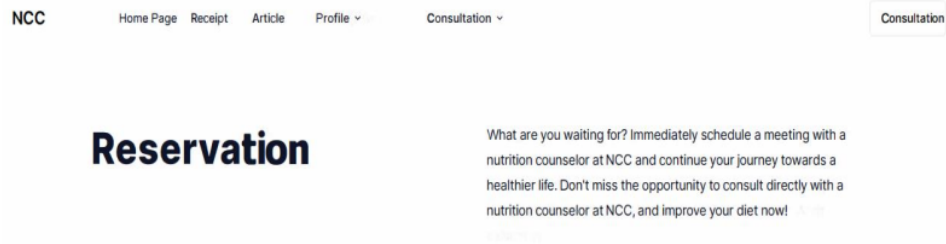


Figure 5. Reservation Desktop Version.

### 4. My Reservation

Once a reservation has been made, clients will be redirected to the "My Reservation" page, which contains information about the scheduling of the client's consultation with nutrition counselors at the Teaching Factory Nutrition Care Center (NCC). Clients can make additional reservations in the "Create Reservation" menu.



Figure 6. My Reservation Desktop Version.

#### 5. Consultation

The consultation page displays the client's consultation history with nutrition counselors at the Teaching Factory Nutrition Care Center (NCC). Clients can also add new consultations if they wish to have additional health consultations.



Figure 7. Consultation Desktop Version.

#### 6. Live Chat

Live chat is one of the features available on the Teaching Factory Nutrition Care Center (NCC) company profile website, designed for online consultations using a live chat feature. The online consultation feature via live chat can assist clients in addressing their concerns and consulting with nutrition counselors at the Teaching Factory Nutrition Care Center (NCC).

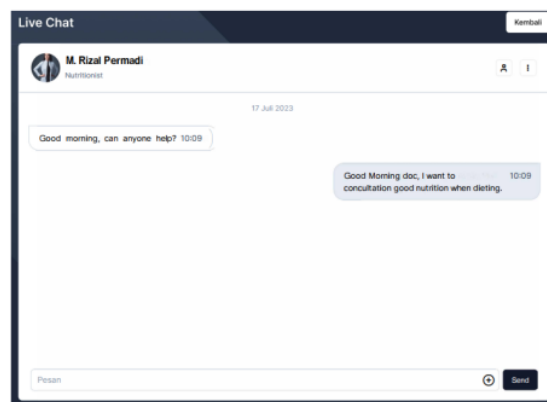


Figure 8. Live Chat Desktop Version.



### 7. Recipes Dekstop Version

This page contains a variety of healthy recipes created by nutrition consultants at the Teaching Factory Nutrition Care Center (NCC) for clients. These recipes are based on the recorded visits of clients regarding their health issues. Within this page, there are various recipe options for healthy diet menus and other healthy menu choices.

## Healthy Recipes

Hopefully with Healthy Food Recipes this time the whole family You will increasingly enjoy eating moments with your family, while meeting children's nutritional needs varied food.

### The latest healthy recipes

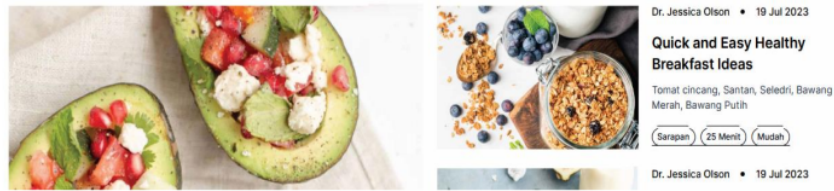


Figure 9. Recipes Dekstop Version

### 8. Recipe Single Desktop Version

If one of the recipes on the recipe menu page is selected, clients will be redirected to the chosen recipe page. The content of this page provides detailed information about the recipe created by nutrition consultants at the Teaching Factory Nutrition Care Center (NCC). On this page, clients can also see the nutritional content per serving of the menu, the required ingredients, and the presentation steps.

Nutrition Serving				
234	16.9g	35.4g	6.7g	2.4g
Calories	Protein	Carbo	Fat	Fiber

Figure 10. Recipe Single Desktop Version

9. Articles

The articles page is intended to provide education to clients and the public about healthy living tips from nutrition consultants at the Teaching Factory Nutrition Care Center (NCC), as well as other updated health-related information.



Figure 11. Articles Desktop Version.

10. Article Single

If one of the articles that clients or the public want to read is clicked, they will be redirected to a more detailed article page, which contains the article's content in detail.



Figure 12. Article Single Desktop Version.

#### 4. Conclusions

The design of the Teaching Factory Nutrition Care Center (NCC) company profile website application was created based on several issues identified through observations and interviews. These issues include the absence of a company profile website providing information about the Teaching Factory Nutrition Care Center (NCC), where the community can seek nutrition and healthcare consultations. Additionally, the public is unaware of the existence of the Teaching Factory Nutrition Care Center (NCC) due to a lack of information and promotion related to NCC. Furthermore, it has been challenging for individuals to make reservations with nutrition counselors for health consultations. This company profile website was created based on the needs of the Teaching Factory Nutrition Care Center (NCC). There are two user roles: nutrition consultants and clients. Nutrition consultants can access the website for online consultations and updating information on the website. Clients can access the website to make reservations, engage in online consultations, and receive healthy menu recipes and other information provided by nutrition consultants at the Teaching Factory Nutrition Care Center (NCC). They can also update their information and knowledge through various health articles on the website. The methods used included observation and interviews as the initial requirement phase. The website profile design method used the waterfall model, and in this article, it is limited to the design phase. There are ten important page menus on the Teaching Factory Nutrition Care Center (NCC) company profile website, including the landing page, profile, reservation, my reservation, consultation, live chat, recipes, recipe single, articles, and article single. This website design can serve as an initial step for developing the Teaching Factory Nutrition Care Center (NCC) company profile website.

#### 5. Patents

We would like to express our gratitude to Politeknik Negeri Jember for funding this research through the Non-Tax State Revenue (Penerimaan Negara Bukan Pajak) scheme in 2023.

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