



UNDERGRADUATE THESIS

FOOD ORDERING RECOMMENDATION SYSTEM IN CANTEEN APPLICATIONS USING THE USER- BASED RECOMMENDATION METHOD

CARITTA ELIZABETH

NPM 22081010155

THESIS ADVISORS

Dr. Rizky Parlika, S.Kom, M.Kom

Dr. Budi Nugroho, S.Kom. M.Kom

**MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
NATIONAL DEVELOPMENT UNIVERSITY OF VETERANS EAST JAVA
FACULTY OF COMPUTER SCIENCE
INFORMATICS STUDY PROGRAM
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APPROVAL SHEET

FOOD ORDERING RECOMMENDATION SYSTEM IN CANTEEN APPLICATIONS USING THE USER-BASED RECOMMENDATION METHOD

By:
CARITTA ELIZABETH
NPM. 22081010155

Has been defended before, and accepted by, the Board of Assessors of the Thesis Examination of the Informatics Study Program, Faculty of Computer Science, Universitas Pembangunan Nasional Veteran Jawa Timur, on June 10, 2026:

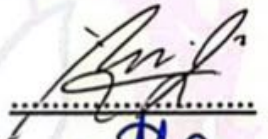
Approved,

Dr. Rizky Parlika, S.Kom, M.Kom
NIP. 19840518 2021211 003



(Advisor I)

Dr. Budi Nugroho, S.Kom. M.Kom
NIP. 19800907 2021211 005



(Advisor II)

Dr. Intan Yuniar Purbasari, S.Kom. MSc.
NIP. 19800602 202521 2 029



(Head Assessor)

Hazna At Thooriqoh, S.Tr.Kom., M.Kom.
NIP. 19970320 202406 2 003



(Assessor I)

Acknowledge by,

Dean of the Faculty of Computer Science



Prof. Dr. Ir. Novirina Hendrasarie, MT.
NIP. 19681126 199403 2 001

APPROVAL SHEET

FOOD ORDERING RECOMMENDATION SYSTEM IN CANTEEN APPLICATIONS USING THE USER-BASED RECOMMENDATION METHOD

By:
CARITTA ELIABETH
NPM. 22081010155

Approved to proceed to the Thesis Examination

Approved by,

Coordinator of Informatics Study Program
Faculty of Computer Science



Dr. Intan Yuniar Purbasari, S.Kom. MSc.

NIP. 19800602 202521 2 029

STATEMENT OF ORIGINALITY

I am the undersigned:

Student Name : Caritta Elizabeth
NPM : 22081010155
Degree Program : Bachelor (S1)
Study Program : Informatic
Faculty : Faculty of Computer Science

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Surabaya, July 08, 2026
Declaring,



CARITTA ELIZABETH
NPM. 22081010155

ABSTRACT

Student Name / NPM : Caritta Elizabeth / 22081010155
Thesis Title : Food Ordering Recommendation System In
Canteen Applications Using The User-Based
Recommendation Method
Advisor : 1. Dr. Rizky Parlika, S.Kom., M.Kom
2. Dr. Budi Nugroho, S.Kom., M.Kom

Canteen services in office environments often still rely on conventional or manual ordering systems. This frequently causes long queues, resulting in suboptimal employee break times, and makes it difficult for customers to choose menus that suit their tastes. Furthermore, historical ordering transaction data has not been optimally processed or utilized to improve service quality. Therefore, this research aims to design and develop a website-based food ordering system that implements a menu recommendation feature using the User-Based Recommendation method. This applied research employs the Waterfall system development method, which sequentially progresses through the stages of Requirements Analysis, System Design, Program Implementation, Program Testing, as well as Deployment and Maintenance. The system is built with a client-server architecture utilizing the Laravel framework, Bootstrap frontend, MySQL database, and Progressive Web Application (PWA) technology. The recommendation algorithm works by calculating the similarity level between users (user similarity) using the Cosine Similarity method based on a rating matrix. To overcome the cold start problem for new users who do not have an order history, the system applies the Most Popular Food approach by recommending the most frequently ordered menus. The research results indicate that the canteen food ordering system has been successfully developed and implemented optimally. The validity testing of the questionnaire instrument involving 30 respondents using Pearson Correlation proved that all question items are 100% valid (calculated r -value $>$ r -table 0.361). Furthermore, the functional agreement level testing of the system conducted by two testers using Cohen's Kappa yielded a value of 1.000. This value falls into the Very Good category (perfect agreement), proving that the system functions consistently and runs according to its functional requirement design.

Keywords: Food Ordering, User-Based Recommendation, Recommendation System, Cosine Similarity, Collaborative Filtering.

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