



**OPTIMIZING ASSET RENTAL OPERATIONS THROUGH A WEB-BASED MANAGEMENT
SYSTEM**

UNDERGRADUATE THESIS

**Submitted as one of the requirements to obtain
Sarjana Komputer (S.Kom.)**

By:

FARAH SALSABILA

012201900019

**FACULTY OF COMPUTER SCIENCE
INFORMATION SYSTEM STUDY PROGRAM
CIKARANG
AUGUST 2023**

**OPTIMIZING ASSET RENTAL OPERATIONS THROUGH A
WEB-BASED MANAGEMENT SYSTEM**

By

Farah Salsabila
012201900019

Approved by:



Rusdianto Roestam, M.Sc, Ph.D.
Thesis Advisor



Ronny Juwomo, S.Pd., M.T.
Program Head Information System

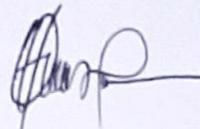


Rila Mandala, Ph.D.
Dean of Faculty of Computing

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled **OPTIMIZING ASSET RENTAL OPERATIONS THROUGH A WEB-BASED MANAGEMENT SYSTEM (CASE STUDY: Z PROPERTY)** that was submitted by **FARAH SALSABILA** majoring in **Information System** from the Faculty of Computer Science was assessed and approved to have passed the Oral Examination on Thursday, August 31, 2023.

Panel of Examiner



Hasanal Fahmi

Chair of Panel Examiner



Andika Candra Jaya

Examiner I

STATEMENT OF ORIGINALITY

In my capacity as an active student of President University and as the author of the thesis/final project/business plan (underline that applies) stated below:

Name : Farah Salsabila
Student ID number : 012201900019
Study Program : Information System
Faculty : Computer Science

I hereby declare that my thesis/ final project entitled "**OPTIMIZING ASSET RENTAL OPERATIONS THROUGH A WEB-BASED MANAGEMENT SYSTEM**" is to the best of my knowledge and belief, an original piece of work based on sound academic principles. If there is any plagiarism detected in this thesis/ final project, I am willing to be personally responsible for the consequences of these acts of plagiarism and will accept the sanctions against these acts in accordance with the rules and policies of President University.
I also declare that this work, either in whole or in part, has not been submitted to another university to obtain a degree.

Cikarang, August 2023



Farah Salsabila

SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC INTEREST

As an academic community member of the President's University, I, the undersigned:

Name : Farah Salsabila
Student ID number : 012201900019
Study Program : Information System

for the purpose of development of science and technology, certify, and approve to give President University a non-exclusive royalty-free right upon my final report with the title:

OPTIMIZING ASSET RENTAL OPERATIONS THROUGH A WEB-BASED MANAGEMENT SYSTEM

With this non-exclusive royalty-free right, President University is entitled to converse, to convert, to manage in a database, to maintain, and to publish my final report. There are to be done with the obligation from President University to mention my name as the copyright owner of my final report.

This statement I made in truth.

Cikarang, August 2023



Farah Salsabila

ADVISOR APPROVAL FOR PUBLICATION

As an academic community member of the President's University, I, the undersigned:

Advisor Name : Rusdianto Roestam, M.Sc, Ph.D.
Employee ID number : 20170800704
Study program : Information System
Faculty : Computer Science

declare the following thesis:

Title of undergraduate thesis : Optimizing Asset Rental Operations Through A Web-Based Management System

Undergraduate Thesis author : Farah Salsabila

Student ID number : 012201900019

will be published in **journal / institution's repository / proceeding / unpublish / (choose one, underline that applies)**

Cikarang, August 2023



Rusdianto Roestam, M.Sc, Ph.D.

SIMILARITY INDEX REPORT

OPTIMIZING ASSET RENTAL OPERATIONS THROUGH A WEB-BASED MANAGEMENT SYSTEM

ORIGINALITY REPORT

13 %	13%	0%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	repository.president.ac.id Internet Source	12%
2	www.netsuite.com Internet Source	1%
3	studentsrepo.um.edu.my Internet Source	<1%
4	www.168hzcf.com Internet Source	<1%

Exclude quotes Off
Exclude bibliography On

Exclude matches Off

GPTZERO RESULT

Stats

Average Perplexity Score: 476.189

A document's perplexity is a measurement of the randomness of the text

Burstiness Score: 2616.975

A document's burstiness is a measurement of the variation in perplexity

Your sentence with the highest perplexity, "Improv", has a perplexity of:

19143

© 2022-2023 GPTZero

ABSTRACT

Z Property has established itself as a private asset rental with diverse properties. These days, Z Property realizes the importance of digitalization to streamline how property owners manage their properties by centralizing rental documentation, eliminating traditional operations, and leveraging the power of digital media—Z Property endeavors to overcome the existing challenges and elevate its competitive edge in the market. The development and implementation of the system will adopt the Waterfall Methodology based on the requirements of Z Property. The steps of the method, include requirements gathering, system design, implementation, testing, and maintenance. Likewise, the system will be developed by using PHP, Bootstrap, HTML, CSS, and MySQL database.

ACKNOWLEDGMENTS

Praise and gratitude the author prays to Allah SWT for the blessings and grace during the author's journey at President University. Throughout the author's journey to obtain a bachelor's degree, the Author would like to express gratitude for:

1. Mr. Rusdianto Roestam as my final project advisor, for all the advice and guidance that helped me to finish the final project.
2. All Information Systems lecturers who have taught me from the first semester until the last semester.
3. Fellow friends, Izzati, Samuel, Jackson, Orivan, Alvin, Farrel, and Syahir, for all their support during my university life.
4. All internship colleagues, for the endless support and spirit
5. All parties that cannot be mentioned

TABLE OF CONTENTS

	Page
DEDICATION	x
ACKNOWLEDGMENT	xi
LIST OF TABLES	xvi
LIST OF FIGURES	xviii
CHAPTER I - INTRODUCTION	
1.1 Background	1
1.2 Problem Statement	2
1.3 Research Objective	2
1.4 Scope and Limitation	3
1.5 Methodology	3
1.6 Thesis Outline	5
CHAPTER II – LITERATURE REVIEW	
2.1 Business Operations.....	7
2.2 Asset.....	8
2.3 Rent.....	8
2.4 Information System.....	8
2.5 Website.....	9
2.6 Related Work.....	10
2.6.1 House (Individual House/Apartment) Rental Management System.....	10
2.6.2 Property Baazar.....	11
2.6.3 Comparative Review Z Property with Related Work.....	11
CHAPTER III – SYSTEM ANALYSIS	
3.1 System Overview.....	13
3.2 Software and Hardware Requirements.....	14
3.3 Use Case Diagram.....	15
3.4 Use Case Narrative.....	17
3.5 Activity Diagram.....	34
3.5.1 Login	34
3.5.2 Tenants Booking Property.....	37
3.5.3 Update profiles Information.....	38
3.5.4 Update Password.....	39
3.5.5 View Booking History.....	40
3.5.6 Add New Property Type.....	40
3.5.7 Edit Property Type.....	41
3.5.8 Delete Property Type.....	41
3.5.9 Add New Property.....	42
3.5.10 Edit Property.....	43
3.5.11 Delete Property.....	44
3.5.12 Add Income Record.....	45
3.5.13 Edit Income Record.....	46
3.5.14 Delete Income Record.....	47
3.5.15 Add Expense Record.....	48
3.5.16 Edit Expense Record.....	49

3.5.17 Delete Expense Record.....	50
3.5.18 Confirm Booking.....	51
3.5.19 Cancel Booking.....	52
3.5.20 Download Income.....	53
3.5.21 Download Expense.....	54
3.5.22 Manage Inquiries.....	55

CHAPTER IV – SYSTEM DESIGN

4.1 User Interface.....	57
4.1.1 Website Information.....	57
4.1.2 Tenants/User Sign In.....	60
4.1.3 View Property List.....	61
4.1.4 Book Property.....	62
4.1.5 Admin/Owner Sign In.....	64
4.1.6 Dashboard.....	64
4.1.7 Type Organizer.....	65
4.1.8 Property Organizer.....	67
4.1.9 Income Tracker.....	69
4.1.10 Expense Tracker.....	71
4.1.11 Booking Organizer and Tracker.....	73
4.1.12 Manage Inquiry.....	76
4.2 Database Design.....	76
4.2.1 Database Tables.....	77
4.2.2 Database Structure.....	77

CHAPTER V – SYSTEM IMPLEMENTATION

5.1 User Interface Development.....	82
5.1.1 Home Page.....	82
5.1.2 About Us.....	83
5.1.3 Contact Us.....	84
5.1.4 Property.....	84
5.1.5 Property Details.....	85
5.1.6 User Sign In.....	86
5.1.7 Admin Portal Sign In.....	87
5.1.8 Admin Dashboard.....	88
5.1.9 Property Type.....	88
5.1.10 Property.....	89
5.1.11 Income.....	90
5.1.12 Expense.....	91
5.1.13 Booking.....	92
5.1.14 Inquiry.....	94
5.2 Application Detail.....	97
5.2.1 Database Config.....	97
5.2.2 User Login.....	98
5.2.3 Home Page.....	99
5.2.4 About Us.....	100
5.2.5 Contact Us.....	101
5.2.6 Property Listing.....	102
5.2.7 Property Details.....	103
5.2.8 Admin Sign In.....	106

5.2.9 Dashboard.....	107
5.2.10 Type.....	108
5.2.11 Property.....	109
5.2.12 Income.....	110
5.2.13 Expense.....	112
5.2.14 Booking.....	114
5.2.15 Admin Sidebar Menu.....	118
5.2.16 Log Out.....	119
5.2.17 Header.....	120
CHAPTER VI – SYSTEM TESTING	
6.1 Testing Environment.....	121
6.2 Testing Scenario.....	121
6.2.1 Users Feature.....	122
6.2.2 Admin Feature.....	122
CHAPTER VIII – CONCLUSION AND FUTURE WORK	
7.1 Conclusion.....	125
7.2 Future Work.....	126
REFERENCE.....	127

LIST OF TABLES

TABLE	Page
Table 2.1 Related Work Comparative Review.....	12
Table 2.1 Related Work Comparative Review.....	12
Table 3.1 System Function.....	13
Table 3.2 System And Hardware Requirement.....	14
Table 3.3 Use Case Narrative For User Login.....	16
Table 3.4 Use Case Narrative For Admin Login.....	17
Table 3.5 Use Case Narrative For Booking Property.....	18
Table 3.6 Use Case Narrative For Update Profile.....	19
Table 3.7 Use Case Narrative For Update Password.....	20
Table 3.8 Use Case Narrative For View Booking History.....	20
Table 3.9 Use Case Narrative For Add Type.....	21
Table 3.10 Use Case Narrative For Edit Type.....	22
Table 3.11 Use Case Narrative For Delete Type.....	23
Table 3.12 Use Case Narrative For Add Property.....	23
Table 3.13 Use Case Narrative For Edit Property.....	24
Table 3.14 Use Case Narrative For Delete Type.....	25
Table 3.15 Use Case Narrative For Add Income Record.....	26
Table 3.16 Use Case Narrative For Edit Income.....	26
Table 3.17 Use Case Narrative For Delete Income.....	27
Table 3.18 Use Case Narrative For Add Expense Record.....	28
Table 3.19 Use Case Narrative For Edit Expense.....	29
Table 3.20 Use Case Narrative For Delete Expense.....	29
Table 3.21 Use Case Narrative For New Booking.....	30
Table 3.22 Use Case Narrative For Download Income Record.....	31
Table 3.23 Use Case Narrative For Download Expense Record.....	31
Table 3.24 Use Case Narrative For Read Inquiries.....	32
Table 4.1 Database Description Admin Table.....	78
Table 4.2 Database Description Users Table.....	78
Table 4.3 Database Description Information Table.....	79
Table 4.4 Database Description Property Table.....	79
Table 4.5 Database Description Booking Table.....	80
Table 4.6 Database Description Income Table.....	80
Table 4.7 Database Description Expense Table.....	80
Table 4.8 Database Description Page Table.....	81
Table 4.9 Database Description Contact Us Info Table.....	81
Table 4.10 Database Description Inquiry Table.....	81
Table 6.1 User Feature Test Scenario.....	115
Table 6.2 Admin Feature Test Scenario.....	115

LIST OF FIGURES

FIGURE	Page
Figure 1.1 Waterfall Methodology.....	3
Figure 2.1 House Rental Management System.....	10
Figure 2.2 Property Baazar.....	11
Figure 3.1 Use Case Tenants.....	15
Figure 3.2 Use Case Diagram Admin.....	16
Figure 3.3 User Login.....	34
Figure 3.4 Admin Login.....	35
Figure 3.5 Booking Property.....	36
Figure 3.6 Update Profile.....	37
Figure 3.7 Update Password.....	38
Figure 3.8 View Booking History.....	39
Figure 3.9 Add Type.....	40
Figure 3.10 Edit Type.....	41
Figure 3.11 Delete Type.....	42
Figure 3.12 Add Property	43
Figure 3.13 Edit Property	44
Figure 3.14 Delete Property	45
Figure 3.15 Add Income	46
Figure 3.16 Edit Income	47
Figure 3.17 Delete Income	48
Figure 3.18 Add Expense	49
Figure 3.19 Edit Expense	50
Figure 3.20 Delete Expense	51
Figure 3.21 Confirm Booking	52
Figure 3.22 Cancel Booking	53
Figure 3.23 Download Income	54
Figure 3.24 Download Expense.....	55
Figure 3.25 Manage Inquiry.....	56
Figure 4.1 Home Page UI.....	58
Figure 4.2 About Us Page UI.....	59
Figure 4.3 Contact Us Page UI	60
Figure 4.4 Sign-In User UI	61
Figure 4.5 Property List UI	62
Figure 4.6 Book A Property UI.....	63
Figure 4.7 Admin Sign-In UI	64
Figure 4.8 Dashboard UI	65
Figure 4.9 Add Type UI	66
Figure 4.10 Manage Type UI	67
Figure 4.11 Add Property UI	68
Figure 4.12 Manage Property UI	69
Figure 4.13 Add Income UI	70
Figure 4.14 Manage Income UI	71
Figure 4.15 Add Expense UI	72
Figure 4.16 Manage Expense UI	73
Figure 4.17 New Booking UI	74

Figure 4.18 Booking Details UI	74
Figure 4.19 Confirmed Booking UI.....	75
Figure 4.20 Canceled Booking UI.....	75
Figure 4.21 Manage Inquiry UI	76
Figure 4.22 Database Tables	77
Figure 5.1 Home Page	83
Figure 5.2 About Us Page.....	83
Figure 5.3 Contact Us.....	84
Figure 5.4 Property	85
Figure 5.5 Property Details.....	86
Figure 5.6 User Sign In.....	87
Figure 5.7 Admin Portal Sign In.....	87
Figure 5.8 Admin Dashboard.....	88
Figure 5.9 Add Type.....	89
Figure 5.10 Manage Type.....	89
Figure 5.11 Add Property.....	90
Figure 5.12 Manage Property.....	90
Figure 5.13 Add Income.....	91
Figure 5.14 Manage Income.....	91
Figure 5.15 Add Expense.....	92
Figure 5.16 Manage Expense	92
Figure 5.17 New Booking.....	93
Figure 5.18 List of Confirmed Booking.....	93
Figure 5.19 List of Canceled Booking.....	94
Figure 5.20 Booking Details	94
Figure 5.21 Inquiry.....	95
Figure 5.22 Database Config.....	97
Figure 5.23 User Login Code.....	98
Figure 5.24 Home Page Code.....	99
Figure 5.25 About Us Code	100
Figure 5.26 Contact Us Form Code.....	101
Figure 5.27 Contact Info Code.....	101
Figure 5.28 Property List Code.....	102
Figure 5.29 Recently Added Code.....	102
Figure 5.30 Image Slider Code.....	103
Figure 5.31 Property Information and Facilities Tab Code.....	104
Figure 5.32 Booking Form Code	105
Figure 5.33 Admin Login Code	106
Figure 5.34 Dashboard Code.....	107
Figure 5.35 Add Type Code.....	108
Figure 5.36 Manage Type Code	108
Figure 5.37 Add Property Code.....	109
Figure 5.38 Manage Property Code.....	109
Figure 5.39 Add Income Code.....	110
Figure 5.40 Manage Income Code.....	111
Figure 5.41 Add Expense Code.....	112
Figure 5.42 Manage Expense.....	113
Figure 5.43 New Booking.....	114
Figure 5.44 Booking Details Code.....	115
Figure 5.45 Confirmed Booking Code.....	116

Figure 5.46 Canceled Booking Code.....	117
Figure 5.47 Sidebar Menu Code.....	118
Figure 5.48 Admin Log Out Code.....	119
Figure 5.49 Header Code.....	120