

DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI

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

By: CANI RISKI BATE'E 012201900016

FACULTY OF COMPUTING
INFORMATION SYSTEM STUDY PROGRAM
CIKARANG
SEPTEMBER 2023

DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI

By Cani Riski Bate'e 01220190016

Approved by:

Ronny Juwono, S.Pd., M.T.

Thesis Advisor

Ronny Juwono, S.Pd., M.T.

Program Head Information System

Ir. Rila Mandala, M.Eng., Ph.D. Dean of Faculty of Computing

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled **DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI** that was submitted by **CANI RISKI BATE'E** majoring in **Information System** from the Faculty of Computer Science was assessed and approved to have passed the Oral Examination on Monday September 18, 2023.

Panel of Examiner

RUSDIANTO ROESTAM

Chair of Panel Examiner

GENTA SAHURI

Examiner |

STATEMENT OF ORIGINALITY

In my capacity as an active student of President University and as the author of the undergraduate thesis stated below:

Name : Cani Riski Bate'e

Student ID number : 01220190016

Study Program : Information System

Faculty : Computing

I hereby declare that my undergraduate thesis entitled "DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI" is, to the best of my knowledge and belief, an original piece of work based on sound academic principles. If there is any plagiarism, including but not limited to Artificial Intelligence plagiarism, is detected in this undergraduate thesis, I am willing to be personally responsible for the consequences of these acts of plagiarism, and 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, 25 September 2023

Cani Riski Bate'e

SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC INTEREST

As a student of the President University, I, the undersigned:

Name : Cani Riski Bate'e

Student ID number : 012201900016

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:

DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI

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 is true.

Cikarang, 25 September 2023

Cani Riski Bate'e

ADVISOR APPROVAL FOR PUBLICATION

** lecturer of the President University, I, the undersigned:

Ad, Isor's name

: Ronny Juwono, S.Pd., M.T.

ffi)

: 1020107603

Stuč,) program

: Information System

Faculty

: Computing

exijll'e that following thesis:

i.e of undergraduate thesis : DEVELOPMENT OF HELPDESK SYSTEM

IN PT JASA TEKNOLOGI INFORMASI

Cndergraduate thesis author : Cani Riski Bate'e

S-Jdent ID number

: 012201900016

Cikarang, 25 September 2023

Ronny Juwono, S.Pd., M.T.

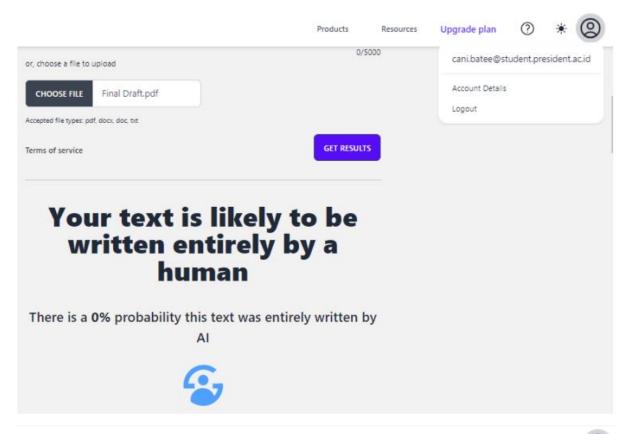
willbe published in the journal/institution's repository.

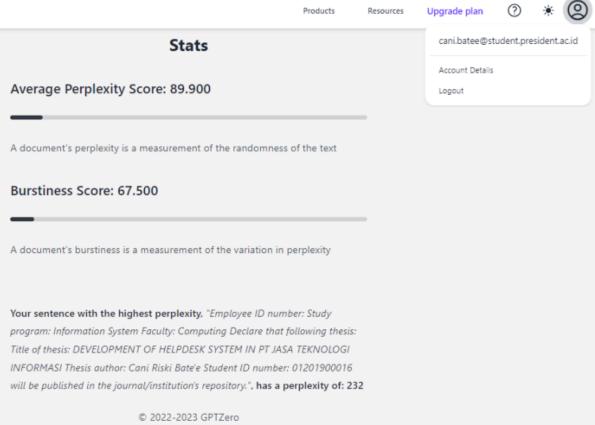
SIMILARITY INDEX REPORT

DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI

ORIGIN	ALITY REPORT			
8 SIMILA	% ARITY INDEX	2% INTERNET SOURCES	0% PUBLICATIONS	8% STUDENT PAPERS
PRIMAR	Y SOURCES			
1	Submitte Student Paper	ed to President	University	8%
2	pdfcook			<1%
3	Submitte Bombay Student Paper	ed to Indian Ins	titute of Techn	ology, <1%
4	www.bu	sinesswebhosti	ngplans.com	<1%
5	www.by	obwebsite.com		<1%
6	Submitte Student Paper	ed to Sunway E	ducation Grou	<1%
7	docplaye			<1%

GPT CHECK





ABSTRACT

Currently, the system for reporting and complaining about problems on some E-Channel, as project support software at PT Jasa Teknologi Informasi only uses email and Slack (chat application) which tend to be ineffective due to the possibility of missing emails or chats. Also, the complaint process must go through the Project Management Officer (as project admin) and not directly to the technician so that the complaint resolution process may take longer. To overcome this problem, a Web-Based Helpdesk Information System was designed by implementing three types of users, namely Admin, Technician, and Employee. This Helpdesk System for this final project will use Rapid Application Development (RAD) and use PHP and MySQL databases. The features that will be developed in this helpdesk system are managing users, issues, tickets, generated reports, and setting. With this Web-Based Helpdesk Information System, it is hoped that it can help employees of PT Jasa Teknologi Informasi in the process of reporting E-Channel problems to be better and faster.

ACKNOWLEDGMENTS

Praise and gratitude the writer prays to the presence of Almighty God who has given His love and mercy so that the writer can accomplish this thesis with the title "DEVELOPMENT OF HELPDESK SYSTEM IN PT JASA TEKNOLOGI INFORMASI".

The writing of this report cannot be separated from the support of many people. As an expression of gratitude, I'd like to thank to:

- 1. My father and my mother have given me the trust and confidence that I can strive for education even though now I live far from them.
- 2. My sister Citra who always be my only and best sister who I always turn to in any condition.
- 3. My two younger brothers Rival and Alan who are always my fun friends.
- 4. Ronny Juwono, S.Pd., M.T. as my final project's advisor major in Information System at President University.
- 5. All my friends who have been part of my college journey.

TABLE OF CONTENTS

ABS	TRACT		1	
DED	DEDICATION			
ACK	ACKNOWLEDGMENTS			
TAB	LE OF CO	ONTENTS	4	
LIST	OF TAB	LES	8	
LIST	OF FIGU	URES	10	
CHA	PTER I	INTRODUCTION	13	
1.1	Backgr	ound	13	
1.2	Problem	n Statement	13	
1.3	Objecti	ves	14	
1.4	Scope a	and Limitation	14	
	1.4.1	Scope	14	
	1.4.2	Limitation	14	
1.5	Method	lology	15	
1.6	Final P	roject Outline	17	
CHAPTER II LITERATURE STUDY			18	
2.1	System	Information	18	
2.2	Helpde	sk	18	
2.3	Web-Based Application		19	
2.4	HTML		20	
2.5	PHP		20	
2.6	Databas	se	21	
	2.6.1	MySQL (My Structured Query Language)	21	
2.7	Related	Work	22	
	2.7.1	Helpdesk PT Inti Konten Indonesia	22	
	2.7.2	Helpdesk Universitas Brawijaya	24	
2.8	Compa	rison Overview	26	
CHA	APTER II	I SYSTEM ANALYSIS	27	
3.1	System	Overview	27	
3.2	Functio	onal Requirements	27	
3.3	Softwar	Software and Hardware Requirements 2		
3.4	Use Case Diagram			

3.5	Use Case	Narrative	30
3.6	Activity l	Diagram	40
	3.6.1	Login	40
	3.6.2	Change Password	42
	3.6.3	Add New Users	43
	3.6.4	Edit Users	44
	3.6.5	Delete Users	45
	3.6.6	Add New Issue (Use As Ticket's Subject)	46
	3.6.7	Edit Issue	47
	3.6.8	Delete Issue	48
	3.6.9	View Ticket	49
	3.6.10	Export Ticket	50
	3.6.11	Add Ticket	51
	3.6.12	Edit Ticket	52
	3.6.13	Delete Ticket	53
	3.6.14	Add New Comment on Ticket Raised	54
	3.6.15	Update Ticket's Status	55
BAB 1	IV SYSTI	EM DESIGN	56
4.1	User Inte	rface Design	56
	4.1.1	Home Page/Login Page	56
	4.1.2	Admin – Dashboard	57
	4.1.3	Admin – List Users	57
	4.1.4	Admin – Add Users	58
	4.1.5	Admin – Edit Users	59
	4.1.6	Admin – List Issue (As Subject of Ticket)	60
	4.1.7	Admin – Add Issue	60
	4.1.8	Admin – Edit Issue	61
	4.1.9	Admin – Ticket List	62
	4.1.10	Admin – Setting (Change Password)	62
	4.1.11	Employee – List Ticket	63
	4.1.12	Employee – Add Ticket	64
	4.1.13	Employee - Edit Ticket	65
	4.1.14	Employee – View Ticket	66
	4.1.15	Employee – Add Comment	66

	4.1.16	Employee – Setting (Change Password)	67		
	4.1.17	Technician – List Ticket	68		
	4.1.18	Technician – View Ticket	69		
	4.1.19	Technician – Add Comment	69		
	4.1.20	Technician – Setting (Change Password)	70		
4.2	Entity R	elationship Diagram	71		
4.3	Databas	e Design	71		
BAB	V SYSTE	EM IMPLEMENTATION	74		
5.1	5.1 User Interface Development				
	5.1.1	Home Page/Login Page	74		
	5.1.2	Admin Dashboard	75		
	5.1.3	Admin – List Users	75		
	5.1.4	Admin – New Users	76		
	5.1.5	Admin – Edit Users	76		
	5.1.6	Admin - Delete Users	77		
	5.1.7	Admin – List Issue (As Ticket's Subject)	77		
	5.1.8	Admin – Add Issue	78		
	5.1.9	Admin – Edit Issue	78		
	5.1.10	Admin - Delete Issue	79		
	5.1.11	Admin – Ticket List	79		
	5.1.12	Admin - Setting (Change Password)	80		
	5.1.13	User – List Ticket	80		
	5.1.14	User – Add Ticket	81		
	5.1.15	User - View Ticket	81		
	5.1.16	User - Edit Ticket	82		
	5.1.17	User – Add Comment and Change Ticket Status	82		
	5.1.18	User – Setting	83		
	5.1.19	Technician – List Ticket	83		
	5.1.20	Technician – View Ticket	84		
	5.1.21	Technician – Add Comment and Change Ticket Status	84		
	5.1.22	Technician – Setting	85		
5.2	Source (Code	85		
	5.2.1	Login	85		
	5.2.2	Admin – Dashboard	87		

	5.2.3	Admin – User List	89
	5.2.4	Admin – Add User	90
	5.2.5	Admin – Edit User	92
	5.2.6	Admin – Delete User	93
	5.2.7	Admin – Issue List	93
	5.2.8	Admin – Ticket List	94
	5.2.9	Admin – Change Password	95
	5.2.10	Employee – Add Ticket	95
	5.2.11	Employee - Set Ticket's Id for Add New Ticket	96
	5.2.12	Employee – Add Comment	97
	5.2.13	Technician – View Ticket	98
	5.2.14	Technician - View Previous Comment	99
BAB VI SYSTEM TESTING			100
6.1	Testing Scenario		100
	6.1.1	Testing for General Features	100
	6.1.2	Testing for Admin Features	102
	6.1.3	Testing for Employee Features	109
	6.1.4	Testing for Technician Features	112
BAB	VII CO	NCLUSIONS AND FUTURE WORK	115
7.1	Conclus	sions	115
7.2	Future V	Work	115
REFERENCES			116

LIST OF TABLES

Table 2.1	Comparison With Related Work	26
Table 3.1	Functional Requirements Description	28
Table 3.2	Use Case Narrative for the "Login" Case	30
Table 3.3	Use Case Narrative for the "Add New User" Case	30
Table 3.4	Use Case Narrative for the "View User List" Case	31
Table 3.5	Use Case Narrative for the "Edit User" Case	31
Table 3.6	Use Case Narrative for the "Delete User" Case	32
Table 3.7	Use Case Narrative for the "Add New Issue" Case	32
Table 3.8	Use Case Narrative for the "View Issue" Case	33
Table 3.9	Use Case Narrative for the "Edit Issue" Case	33
Table 3.10	Use Case Narrative for the "Delete Issue" Case	34
Table 3.11	Use Case Narrative for the "View Ticket" Case	34
Table 3.12	Use Case Narrative for the "Change Password" Case	35
Table 3.13	Use Case Narrative for the "Download User List to FDF" Case	35
Table 3.14	Use Case Narrative for the "Add New Ticket" Case	36
Table 3.15	Use Case Narrative for the "Edit Ticket" Case	37
Table 3.16	Use Case Narrative for the "Delete Ticket" Case	37
Table 3.17	Use Case Narrative for the "Add Comment on Ticket (Employee)"	38
Table 3.18	Use Case Narrative for the "View Ticket" Case	38
Table 3.19	Use Case Narrative for the "Add Comment on Ticket (Technician)"	39
Table 4.1	User Table	71
Table 4.2	Issue Table	72
Table 4.3	Tickets Table	72
Table 4.4	Comments Table	73
Table 6.1	Testing for General Feature	100
Table 6.2	Screen Capture for General Feature	101
Table 6.3	Testing for Admin Feature	102
Table 6.4	Screen Capture for Admin Feature	104
Table 6.5	Testing for Employee Feature	109
Table 6.6	Screen Capture for Employee Feature	110
Table 6.7	Testing for Technician Feature	112
Table 6.8	Screen Capture for Technician Feature	113

LIST OF FIGURES

Figure 1.1	Four Steps of RAD Methodology	15
Figure 2.1	Dashboard Helpdesk PT Inti Konten Indonesia	23
Figure 2.2	Add New Ticket PT Inti Konten Indonesia	24
Figure 2.3	Dashboard Helpdesk Universitas Brawijaya	25
Figure 2.4	Add New Ticket Universitas Brawijaya	26
Figure 3.1	Use Case Diagram	29
Figure 3.2	Activity Diagram for "Login"	41
Figure 3.3	Activity Diagram for "Change Password"	42
Figure 3.4	Activity Diagram for "Add New Users"	43
Figure 3.5	Activity Diagram for "Edit Users"	44
Figure 3.6	Activity Diagram for "Delete Users"	45
Figure 3.7	Activity Diagram for "Add New Issue"	46
Figure 3.8	Activity Diagram for "Edit Issue"	47
Figure 3.9	Activity Diagram for "Delete Issue"	48
Figure 3.10	Activity Diagram for "View Ticket"	49
Figure 3.11	Activity Diagram for "Export Issue"	50
Figure 3.12	Activity Diagram for "Add New Ticket"	51
Figure 3.13	Activity Diagram for "Edit Ticket"	52
Figure 3.14	Activity Diagram for "Delete Ticket"	53
Figure 3.15	Activity Diagram for "Add Ticket's Comment"	54
Figure 3.16	Activity Diagram for "Update Ticket Status"	55
Figure 4.1	Interface Design for "Login" Page	56
Figure 4.2	Interface Design for "Admin - Dashboard" Page	57
Figure 4.3	Interface Design for "Admin – List Users" Page	58
Figure 4.4	Interface Design for "Admin – Add Users" Page	59
Figure 4.5	Interface Design for "Admin – Edit Users" Page	59
Figure 4.6	Interface Design for "Admin – Issue List" Page	60
Figure 4.7	Interface Design for "Admin - Add Issue" Page	61
Figure 4.8	Interface Design for "Admin – Edit Issue" Page	61
Figure 4.9	Interface Design for "Admin – Ticket List" Page	62
Figure 4.10	Interface Design for "Admin – Setting (Change Password)" Page	63
Figure 4.11	Interface Design for "Employee – List Ticket" Page	64
Figure 4.12	Interface Design for "Employee – Add Ticket" Page	65

Figure 4.13	Interface Design for "Employee – Edit Ticket" Page	65
Figure 4.14	Interface Design for "Employee - View Ticket" Page	66
Figure 4.15	Interface Design for "Employee – Add Comment" Page	67
Figure 4.16	Interface Design for "Employee – Setting (Change Password)" Page	68
Figure 4.17	Interface Design for "Technician – List Ticket" Page	68
Figure 4.18	Interface Design for "Technician - View Ticket" Page	69
Figure 4.19	Interface Design for "Technician – Add Comment" Page	70
Figure 4.20	Interface Design for "Technician – Setting (Change Password)"	70
Figure 4.21	Entity Relationship Diagram	71
Figure 5.1	Login Page	74
Figure 5.2	Admin – Dashboard	75
Figure 5.3	Admin – List Users	75
Figure 5.4	Admin – New Users	76
Figure 5.5	Admin – Edit Users	76
Figure 5.6	Admin – Delete Users	77
Figure 5.6	Admin – List Issue	77
Figure 5.7	Admin – Add New Issue	78
Figure 5.8	Admin – Edit Issue	78
Figure 5.9	Admin - Delete Issue	79
Figure 5.9	Admin – List Ticket	79
Figure 5.10	Admin – Setting (Change Password)	80
Figure 5.11	Employee – List Ticket	80
Figure 5.12	Employee – Add Ticket	81
Figure 5.13	Employee – View Ticket	81
Figure 5.14	Employee – Edit Ticket	82
Figure 5.15	Employee – Add Comment and Change Ticket Status	82
Figure 5.16	Employee – Setting	83
Figure 5.17	Technician – List Ticket	83
Figure 5.18	Technician – View Ticket	84
Figure 5.19	Technician – Add Comment	84
Figure 5.20	Technician – Setting	85
Figure 5.21	Source Code for Login	86
Figure 5.22	Source Code for Admin – Dashboard	88
Figure 5.23	Source Code for Admin - User List	89

Figure 5.24	Source Code for Admin - Add User	91
Figure 5.25	Source Code for Admin - Edit User	92
Figure 5.26	Source Code for Admin – Delete User	93
Figure 5.27	Source Code for Admin – Issue List	93
Figure 5.28	Source Code for Admin – Ticket List	94
Figure 5.29	Source Code for Admin – Change Password	95
Figure 5.30	Source Code for Employee - Add Ticket	96
Figure 5.31	Source Code for Employee – Set Ticket's Id for Add New Ticket	97
Figure 5.32	Source Code for Employee – Add Comment	97
Figure 5.33	Source Code for Technician - View Ticket	98
Figure 5.34	Source Code for Technician - View Previous Comment	99