

Online Campus Web Service with Grammar Checker, Bad Word Checker, and Binary Search Algorithm

UNDERGRADUATE THESIS

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

By:

AYUB SARINA SINAGA 001202000007

FACULTY OF COMPUTING
INFORMATICS STUDY PROGRAM
CIKARANG

SEPTEMBER,2023

Copyright By
Ayub Sarina Sinaga
2023

Online Campus Web Service with Grammar Checker, Bad Word Checker, and Binary Search Algorithm

Ву

Ayub Sarina Sinaga 001202000022

Approved:

Nur Hadisukmana, M.Sc.

Thesis Advisor

Cutifa Safitri, Ph.D.

Program Head of Informatics Study

Program

Rila Mandala, Ph.D.

Dean of Faculty of Computing

STATEMENT OF ORIGINALITY

In my capacity as an active student at President University and as the author of the final project

stated below:

Name : Ayub Sarina Sinaga

Student ID number : 001202000007

Study Program : Informatics

Faculty : Computer Science

I hereby declare that my final project entitled "Online Campus Web Service with Grammar

Checker, Bad Word Checker, and Binary Search Algorithm" 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 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, 2023

Ayub Sarina Sinaga

SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC

INTEREST

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

Name

: Ayub Sarina Sinaga

Student ID number : 001202000007

Study program

: Informatics

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:

"Online Campus Web Service with Grammar Checker, Bad Word Checker, and Binary

Search Algorithm"

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, 2023

Ayub Sarina Sinaga

ADVISOR'S APPROVAL FOR PUBLICATION

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

Advisor's Name : Nur Hadisukmana NIDN : 20030900026 Study program : Informatics Faculty : Computing

declare that following thesis:

Title of undergraduate thesis : Online Campus Web Service with Grammar Checker,

Bad Word Checker, and Binary Search Algorithm

Undergraduate Thesis author : Ayub Sarina Sinaga Student ID number : 001202000007

will be published in journal / institution's repository / proceeding / unpublish /

Cikarang, 2023

Nur Hadisukmana

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled ONLINE CAMPUS WEB SERVICE that was submitted by AYUB SARINA SINAGA majoring in IT from the Faculty of Computer Science was assessed and approved to have passed the Oral Examination on Thursday September 7, 2023.

Panel of Examiner

RUSDIANTO ROESTAM

Chair of Panel Examiner

Asst. Prof. Dr. Hasanul Fahmi, M.Kom

Examiner I

online campus web service

ORIGINALITY REPORT

8% SIMILARITY INDEX

5%
INTERNET SOURCES

3%
PUBLICATIONS

5%

STUDENT PAPERS

PRIMARY SOURCES

Submitted to Manchester Metropolitan University

<1%

Student Paper

Submitted to Higher Education Commission Pakistan

<1%

Student Paper

Md Saroar Jahan, Mourad Oussalah. "A systematic review of Hate Speech automatic detection using Natural Language Processing.", Neurocomputing, 2023

<1%

4

Mishra, Sattyam Kishor, Manish Pandey, and Parma Nand Astya. "Efficient single pattern searching algorithm for offline text by using binary search tree (ESPS Algorithm)", International Conference on Computing Communication & Automation, 2015.

<1%

Publication

5

www.nature.com

Internet Source

<1%

Stats

Average Perplexity Score: 157.409

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

Burstiness Score: 357.606

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

Your sentence with the highest perplexity, "Thesis Advisor Cutifa Safitri, Ph.D.", has a perplexity of: 1719

© 2022-2023 GPTZero

ABSTRACT

Safe, comfortable, and fun are things that humans usually want wherever and whenever. Including in terms of education, we really want to feel these 3 things also in the educational institution that we want to enter or that we have occupied. One of the educational institutions that is very important to improve the quality of the campus or university. Because it can be said here is the last step of education so that it is more mature in the world of work. Many people want to know about campus life where they will live but do not know how to find out information about the campus, many campuses look very good but in terms of service they can still be categorized as lacking when students have problems in the campus environment, does the campus really handle or solve the problems that exist on the campus or are even allowed to do things like this usually in a university will usually be carried out in private without the outside community knowing, usually campus students when they want to complain must do it privately to the campus. Even though this is one very important thing that outsiders want to know before actually entering the campus. When we know that the service from a campus is lacking, even though it is a well-known campus, we can think again about going there because if the campus cannot help students in small matters, students on the campus can also study well and more efficiently. So this will complicate the life of students on campus.

DEDICATION

I would like to dedicate this thesis to myself and thank you to everyone who have supported me throughout the process. I hope this thesis can be useful for education and can be an inspiration for anyone.

ACKNOWLEDGEMENT

First, I would like to thank the Lord Jesus Christ for blessing me during the making of the final project, final report, and throughout my college process. Without his blessings and power, I would not have been able to get to this point.

During the process of studying and working on the final project and final report, many people have contributed and supported me. I would like to express my respect and gratitude to them:

- 1. To my parents, Mr. Bernat Sinaga and Mrs. Tierdi Hutabarat and my younger siblings, Ardelima Sinaga, Parel Sinaga, Merli Sinaga, thank you for supporting me so far, giving love, affection, and thank you for your prayers, may you always be healthy and blessed by God.
- 2. To my dear family, Tulang Dedi Hutabarat, Nantulang Dedi Simatupang, Nantulang Niko, brother niko, brother dedi, brother eko, brother reza. Thank you for motivating me, thank you for being an inspiration for me, and thank you for all your prayers and support, and advice for me.
- 3. Mr. Nur Hadisukmana as thesis advisor. Thank you for guiding me, giving me advice, suggestions and for supporting me. May you be given health and blessed by the almighty God.
- 4. Ms. Cutifa as my advisor during college, thank you miss for helping me with my problems and giving me advice during my college years.
- 5. To all lecturers at the Faculty of Computer Science who have taught and provided very useful knowledge during my studies.
- 6. To my beloved friends Samuel Jofanisrel Pangaribuan, Christian Wicaksono, Karla Cahaya Ismy Trirani, Muhammad Yoga Pratama, and Fauzan Azim. Thank you for being part of my story during college for all the moments we

have, being a place to tell complaints, thank you for being my home, thank you for all the difficult and happy processes we went through during college I am happy to meet you and all the best.

7. To all my friends in the computer faculty, I am grateful for the moments during my college trip, nice to meet you.

Last but not least, thank you, President University, for the journey and experiences that might have never felt before.

TABLE OF CONTENTS

_						
ı a	n	Р	\cap t		nte	nts
- 1 (4			\mathbf{O}	\sim		1163

ABSTI	RACT	1
DEDIC	CATION	2
ACKN	OWLEDGEMENT	3
TABLI	E OF CONTENTS	5
LIST	OF TABLES	9
LIST	OF FIGURE	11
CHAP'	TER I INTRODUCTION	14
1.1	Background	14
1.2	Problem Statement	14
1.3	Objectives	15
1.4	Scope and Limitations	15
1.	4.1 Scope	15
1.	4.2 Limitations	15
1.5	Project Methodology	16
1.6	Final Project Outline	18
CHAP	TER II LITERATURE REVIEW	8
2.1	Bad Words Checker	8
2.2	Grammar Checker	9
2.3	Binary Search Algorithm	9
2.4	Comparison Table	10
CHAP'	TER III SYSTEM ANALYSIS	11
3.1	System Overview	11
3.2	Function Analysis	12
3.3	Hardware and System Requirement	13

3.4	Use Ca	ase Diagram15
3.5	Use Ca	ase Narrative
3.6	Swim	Lane Diagram
3.6	.1 Ho	omepage34
3.6	.2 Sw	vim Lane Diagram for Login and Register Page35
3.6	.3 Sw	vim Lane Diagram for Suggestion Management
3.6	.4 Sw	vim Lane Diagram for About Page40
3.6	.5 Sw	vim Lane Diagram for Suggestion Search
3.6	.6 Sw	vim Lane Diagram for Notification42
3.7	Hardw	vare and Software Requirement
3.7	.1 Ha	ardware Requirement
3.7	.2 So	ftware Requirement44
1.	Ope	rating System44
2.	Web	Browser44
СНАРТ	ER IV	SYSTEM DESIGN45
4.1	User I	nterface Design
4.1	.1 Ho	omepage45
4.1	.2 Re	gister
4.1	.3 Lo	gin47
4.1	.4 Su	ggestion Management System48
4.1	.5 Su	ggestion Page49
4.1	.6 Ab	oout50
4.1	.7 Us	er and Admin Notification Page51
4.1	.8 Us	er and Admin Modal Page53
1.1	.1 Sta	atus Suggestion54
5.1	Class l	Diagram56
СНАРТ	ER V S	SYSTEM IMPLEMENTATION57

5.1 Us	er Interface57
5.1.1	Homepage57
5.1.2	Register58
5.1.3	Login
5.1.4	Suggestion Management System
5.1.5	Suggestion Page
5.1.6	About page
5.1.7	User Notification Page
5.1.8	Admin Management System
5.1.9	Modal Page65
5.1.10	Status Suggestion
5.2 Ap	pplication Details67
5.2.1	Homepage 67
5.2.2	Register
5.2.3	Login69
5.2.4	Suggestion Management System
5.2.5	Suggestion Page
5.2.6	About Page
5.2.7	Suggestion Search
5.2.8	User Notification Page
5.2.9	Admin Management System
5.2.10	Like Suggestion80
5.2.11	Comment Suggestion81
5.2.12	Modal Page81
CHAPTER	VI SYSTEM TESTING84
6.1 Te	sting Environment84
6.1.1	Register84

6.1.	2 Register85
6.1.	3 Login
6.1.	4 Create Suggestion
6.1.	5 Suggestion View
6.1.	6 About Page86
6.1.	7 Edit Profile
6.1.	8 Notification87
6.1.	1 Suggestion Search
6.1.	9 Suggestion Like
6.1.	2 Suggestion Comment
6.2	Testing Summary90
СНАРТЕ	ER VII CONCLUSION AND FUTURE WORKS91
7.1	Conclusion91
7.2	Future Works91
Referenc	es92

LIST OF TABLES

Table 2.0.1 Comparison	10
Table 0.1 Function Description.	12
Table 0.2 Software Requirements	13
Table 0.3 Hardware Requirements	14
Table 0.4 Use case Narrative For "Access Homepage"	15
Table 0.5 Use case Narrative For "Register Account to System"	16
Table 0.6 Use case Narrative For "Login to System"	17
Table 0.7 Use case Narrative For "Suggestion Management System"	18
Table 0.8 Use case Narrative For "Delete Suggestion Page"	19
Table 0.9 Use case Narrative For "Read Suggestion Page"	20
Table 0.10 Use case Narrative For "Suggestion Page"	20
Table 0.11 Use case Narrative For "About Page"	22
Table 0.12 Use case Narrative For "Article Search"	23
Table 0.13 Use case Narrative For "User Notification Page"	24
Table 0.14 Use case Narrative For "Admin Notification Page"	25
Table 0.15 Use case Narrative For "User Like Suggestion"	26
Table 0.16 Use case Narrative For "Admin Like Suggestion"	26
Table 0.17 Use case Narrative For "User Comment Suggestion"	27
Table 0.18 Use case Narrative For "Admin Comment Suggestion"	28
Table 0.19 Use case Narrative For "Admin Solve and Unsolved Suggestion"	29
Table 0.20 Use case Narrative For "User and Admin Comment Change Profile"	30
Table 0.21 Use case Narrative For User Status Solve and Unsolved Suggestion"	31

Table 0.22 Use case Narrative For "Logout from System"	32
Table 0.1 Table Description Homepage	46
Table 0.2 Table Description Register	47
Table 0.3 Table Description Login	48
Table 0.4 Description Suggestion Management System	49
Table 0.5cDescription Create Suggestion	50
Table 0.6 Description About Page	51
Table 0.7 Description User Notification Page	52
Table 0.8 Description Admin Notification Page	53
Table 0.9 Description User Notification Page	53
Table 0.10 Description User Status Solved Page	54
Table 0.11 Description User Status Unsolved Page	55
Table 6.1 Testing Homepage	84
Table 6.2 Testing Register	85
Table 6.3 Testing Login	85
Table 6.4 Creating Suggestion	86
Table 6.5 Testing Suggestion View	86
Table 6.6 Testing About Page	86
Table 6.7 Testing Edit Profile	87
Table 6.8 Testing Notification	87
Table 6.9 Testing Search	87
Table 6.10 Testing Like	90
Table 6.11 Testing Comment	90

LIST OF FIGURE

Figure 1 Agile Development	17
Figure 2 Use Case Diagram	15
Figure 3 Swim Lane Diagram Homepage	34
Figure 4 Swimlane Diagram Register Page	35
Figure 5 Swimlane Diagram Login Page	36
Figure 6 Swim Lane Diagram Create Suggestion	38
Figure 7 Swim Lane Diagram Delete Suggestion	38
Figure 8 Suggestion Page	39
Figure 9 Swimlane Diagram About Page	40
Figure 10 Swim lane Diagram Search	41
Figure 11 Swim Lane Diagram for Notification	42
Figure 12 Swim Lane Diagram for Like and Comments	43
Figure 15 User Interface of Register Validation	59
Figure 16 User Interface of Login	59
Figure 17 Interface of Suggestion Management System	60
Figure 18 User Interface of Create Suggestion Page	60
Figure 19 User Interface of Grammar Suggestion	61
Figure 20 User Interface of Bad Words Suggestion	62
Figure 21 User Interface of Success Screen	62
Figure 22 User Interface of About Page	63
Figure 23 User Interface of Edit Blog Page	63

Figure 24 User Interface of Admin Management System	64
Figure 25 User Interface of Admin Comment	65
Figure 26 User Interface of User Modal Page	65
Figure 27 User Interface of Admin Modal Page	66
Figure 28 User Interface of Status Suggestion	66
Figure 29 Homepage HTML Code	67
Figure 30 Homepage Controller	68
Figure 31 Register Controller Code	69
Figure 32 Login Controller Code	70
Figure 33 Suggestion Management System View	71
Figure 34 Script Displaying Suggestion Data table	71
Figure 35 Delete Suggestion Controller	72
Figure 36 Suggestion Show Controller	72
Figure 37 HTML Suggestion page	73
Figure 38 Ck-editor 5 JavaScript Code	74
Figure 39 API Bad Words	74
Figure 40 Filtered API Bad Words	75
Figure 41 Grammarly Plugin Code	75
Figure 42 About Controller Code	76
Figure 43 About HTML Code	76
Figure 44 Controller Search	77
Figure 45 Controller Search condition	77
Figure 46 Controller Search Algorithm Binary Search	78
Figure 47 User Notification Page HTML Code	78
Figure 48 User Notification Page Controller Code	79

Figure 49 Admin Controller Code	80
Figure 50 Admin HTML Code	80
Figure 51 Controller Like Suggestion	81
Figure 52 Controller Comment Suggestion	81
Figure 53 HTML Modal page	82
Figure 54 Controller Modal Page	83