

**QUEUEING SYSTEM WITH ONLINE RESERVATION
AND SMS NOTIFICATION FOR CAVITE STATE
UNIVERSITY-INDANG CAMPUS**

THESIS

**AXL E. ANGCANAN
SHANE LESLIE F. FETILO
CHRISTINE MARINELLE D. MANGUBA**

College of Engineering and Information Technology

CAVITE STATE UNIVERSITY

Indang, Cavite

July 2019

**QUEUEING SYSTEM WITH ONLINE RESERVATION AND SMS
NOTIFICATION FOR CAVITE STATE UNIVERSITY -
INDANG CAMPUS**

Undergraduate Thesis
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfilment
of the requirements for the degree
Bachelor of Science in Computer Science



*Queueing with online reservation and SMS
notification for Cavite State University -
371.337An4 2019
T-8690*

**AXL E. ANGCANAN
SHANE LESLIE F. FETILO
CHRISTINE MARINELLE D. MANGUBA**
July 2019

ABSTRACT

ANGCANAN, AXL E., FETILO, SHANE LESLIE F. and MANGUBA, CHRISTINE MARINELLE D., QUEUEING SYSTEM WITH ONLINE RESERVATION AND SMS NOTIFICATION FOR CAVITE STATE UNIVERSITY – INDANG CAMPUS.

Undergraduate Thesis Bachelor of Science in Computer Science. Cavite State University, Indang, Cavite. July 2019. Adviser: Ms. Ria Clarisse L. Mojica.

The system was developed from January 2019 until April 2019 at Cavite State University - Main Campus. It was developed to help reduce the possibility of bulking lines and agitation of clients in the queue. Thus, the whole enrollment process and the time dedicated for enrollment alone will be greatly reduced and maximized beneficially. The system also provides productivity report that will keep up to date report of the productivity of administration each day.

The researchers used rapid application development as a guideline on the development of the whole queuing system. Specifically, PHP, CSS, PhpMyAdmin, Visual Basic and Laravel were used to build the website and the SMS module. Moreover, FCFS (First Come First Serve) algorithm was used for the queuing system. A total of 190 participants were given software evaluation to evaluate the system based on its functionality, reliability, usability, portability, maintainability, efficiency and helpfulness.

The average mean obtained from all the evaluation was 4.61 which is Excellent. This implies that the study met the expected features of the intended users, as well as the approval of the technical specialists.

TABLE OF CONTENTS

	Page
BIOGRAPHICAL DATA	iii
ACKNOWLEDGEMENT	v
ABSTRACT	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF APPENDIX TABLES	xii
LIST OF APPENDIX FIGURES	xiii
LIST OF APPENDICES	xiv
INTRODUCTION	2
Statement of the Problem	3
Conceptual Framework	5
Objectives of the Study	8
Significance of the Study	8
Time and Place of the Study	9
Scope and Limitations of the Study.....	10
Definition of terms	12
REVIEW OF RELATED LITERATURE	16
Comparison of the study with its related studies	31
METHODOLOGY	32
Materials	32

Methods	32
Requirements Planning.....	33
User Design	33
Rapid Construction	34
Cutover.....	34
Population, Sample Size and Sampling Technique.....	34
Statistical Treatment of Data	35
System Architecture	37
RESULTS AND DISCUSSION	40
System Development	40
Software Testing	42
System Overview	42
Software Evaluation	53
SUMMARY, CONCLUSION AND RECOMMENDATIONS	59
Summary	59
Conclusion	60
Recommendation	61
REFERENCES	62
APPENDICES	64

LIST OF TABLES

Table		Page
1	Comparison of the study with its related studies.....	31
2	Rating scale of software evaluation	54
3	Participants' evaluation of the software in terms of functionality	54
4	Participants' evaluation of the software in terms of reliability	54
5	Participants' evaluation of the software in terms of usability	56
7	Participants' evaluation of the software in terms of maintainability ..	57
8	Participants' evaluation of the software in terms of efficiency	58
9	Participants' evaluation of the software in terms of helpfulness	58
10	Summary of the results of the evaluation	58

LIST OF FIGURES

Figure		Page
1	Conceptual Framework of the Study	7
2	Rapid Application Development.....	34
3	System Architecture of the proposed study.....	39
4	Screenshot of Online Registration Page	43
5	Screenshot of the Log In Page.....	44
6	Screenshot of the Queue Page for the walk in user.....	45
7	Screenshot of Display Queue of the Status of Transaction.....	46
8	Screenshot of the Cashier's View	47
9	Screenshot of the List of Students in Cashier's view.....	47
10	Screenshot of the College list in Cashier's view.....	48
11	Screenshot of Adding College and Student User Account in Cashier's View.....	49
12	Screenshot of the Administrator's View.....	50
13	Screenshot of the list of the Account Holder and other features in Administrator's View.....	50
14	Screenshot of the Form in Creating an Account for the Cashier in Administrator's View.....	51
15	Screenshot of the Form in Setting the time of transaction for the Online User in Administrator's View.....	52
16	Screenshot of the Form in Setting the Date of Report in Administrator's View.....	53

LIST OF APPENDIX TABLES

Figure		Page
1	Frequency distribution of scores of the functionality indicators	74
2	Frequency distribution of scores of the reliability indicators	74
3	Frequency distribution of scores of the usability indicators.....	74
4	Frequency distribution of scores of maintability indicators.....	74
5	Frequency distribution of scores of the efficiency indicators.....	75
6	Frequency distribution of scores of the helpfulness indicators.....	75

LIST OF APPENDIX FIGURES

Appendix Figure	Page
1 Difficulty in viewing queueing status in the current system.....	64
2 Low productivity on service transaction.....	64
3 Difficulty in being on queue as early as possible.....	64
4 Pie for the respondents who waited to be served on the queue.....	65
5 Pie for the number of cashier window(s) available during peak.....	65
6 Pie for the Respondent who have a sustainable cell reception.....	65
7 Pie for the respondent who travel from home to university.....	66
8 Pie for the respondent owns an Android Phone or IOS phone.....	66
9 Pie for the respondent availed an internet promo.....	66
10 Pie for the respondent experienced someone sneaked in the line.....	67
11 Pie for the respondents who experienced cut-off of service before their transaction.....	67
12 Pie for the respondent agreed to receive an SMS personally.....	67
13 Cashier window availability.....	68
14 Gantt Chart of the Development.....	72

QUEUEING SYSTEM WITH ONLINE RESERVATION AND SMS NOTIFICATION FOR CAVITE STATE UNIVERSITY – INDANG CAMPUS

**Axl E. Angcanan
Shane Leslie F. Fetilo
Christine Marinelle D. Manguba**

An undergraduate thesis submitted to the faculty of the Department of Information Technology, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfilment of the requirements for the degree of Bachelor of Science in Computer Science with Contribution No. CEIT 2018-19-S-008. Prepared under the supervision of Ms. Ria Clarisse L. Mojica

INTRODUCTION

One of the most universally hated things that people do is waiting in line. Waiting lines, or queues are an everyday occurrence. A queue is a line of people or things waiting to be managed, usually in sequential order starting at the beginning or top of the line or sequence.

Just like any business, schools encounter high volume of customers for inquiries, and this happens before each semester starts. Cavite State University, in particular, experiences problems in handling students and guardians who line up to pay for school fees or for registration. To manage queues properly, certain strategies must be employed to optimize efficiency and improve the customer experience.

In the study conducted by Coscolluela and Digma (2016), they developed a queueing system using barcode and facial recognition that would minimize the common problems