

**COMPUTATIONAL SECURITY OF WATERMARK FOR
CAVITE STATE UNIVERSITY REGISTRAR'S
OFFICE DIGITAL FILES**

THESIS

**LUCKY ANGELO A. AQUINO
ANGELICA D. FERAER**

**College of Engineering and Information Technology
CAVITE STATE UNIVERSITY
Indang, Cavite**

March 2013

**COMPUTATIONAL SECURITY OF WATERMARK FOR CAVITE STATE
UNIVERSITY REGISTRAR'S OFFICE DIGITAL FILES**

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

**In partial fulfillment
of the requirements for the degree
of Bachelor of Science in Computer Science**



*Computational security of watermarks for
Cavite State University registrars office
005.74 Ag5 2012
T-5205*

**Aquino, Lucky Angelo A.
Feraer, Angelica D.
March 2012**

ABSTRACT

AQUINO, LUCKY ANGELO A., FERAER, ANGELICA D. Computational Security of Watermark for Cavite State University Registrar's Office Digital Files
Undergraduate Thesis. Bachelor of Science in Computer Science. Cavite State University, Indang, Cavite. March 2011. Adviser: Mr. Mark Steve Poniente

The study was conducted to embed watermark to Cavite State University Registrar's Office archived files. The software enable the users to do scanning, printing, searching and saving image file to database and inserting of watermark to file.

Prototyping Model was used in the development of the software. It consists of the following phases: Prototype Requirements, Prototype Design, Prototype, System and Test and Evaluation.

The following are the specifications of the computer that were used in developing the software: Core i3 processor - 2310 CPU @ 2.10 GHz running in Microsoft 7 Home Basic , 2GB RAM Memory and 195 GB of hard disk space. Microsoft Visual Basic 6.0 is used as programming language and MS Word 2007, Miktex 2.8 and TexNic Center for creating the documentation. MySQL, SQLyog and WampServer were used for database.

The software was evaluated based on the given criteria: Functionality, Reliability, Usability, Efficiency, Maintainability, and Portability. The participants of the study were the staff of the Registrar's Office and College of Engineering and Information Technology, Department of Information Technology students and staff. The software passed all the given criteria in the evaluation and met all the requirements of the software.

TABLE OF CONTENTS

	Page
APPROVAL SHEET.....	ii
BIOGRAPHICAL DATA.....	iii
ACKNOWLEDGMENT	iv
ABSTRACT.....	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF APPENDICES.....	xiii
INTRODUCTION.....	1
Statement of the Problem	2
Theoretical Framework	3
Significance of the Study	4
Objectives of the Study	5
Time and Place of the Study.....	6
Scope and Limitation of the Study.....	6
Definition of Terms.....	8
REVIEW OF RELATED LITERATURE	9
MATERIALS AND METHODS	20
Materials	20
Methods.....	20
Software Evaluation	22
RESULTS AND DISCUSSION	24
Result of Evaluation.....	39

SUMMARY, CONCLUSION, AND RECOMMENDATIONS	45
Summary	45
Conclusion	46
Recommendations	46
REFERENCES	47
APPENDICES	48

LIST OF TABLES

Table		Page
1	Mean score on Functionality of the software	39
2	Mean score on Reliability of the software	40
3	Mean score on Usability of the software	41
4	Mean score on Efficiency of the software	42
5	Mean score on Maintainability of the software	42
6	Mean score of Portability of the software	43

LIST OF FIGURES

Figure	Page
1	Theoretical framework for computational security of watermark for Cavite State University registrar's office digital file 3
2	Prototyping methodology 9
3	Registrar's Organizational Chart 10
4	Log in form layout 26
5	Main form layout 26
6	Screen layout of file submenu (Scan, Open and Print) 27
7	Scan form layout 28
8	Select source form layout 28
9	Scanner 29
10	Screen layout of saving image file to computer directory 29
11	Screen layout of saving image file to database 30
12	Screen layout of file submenu (Open from directory and database) 31
13	Screen layout of opening of file from directory 31
14	Screen layout of opening of file from database 32
15	Search form layout (search by name) 32
16	Search form layout (search by document type) 33
17	Search form for grading sheet 33
18	Print form layout 34
19	Preview..... 35
20	Screen layout of saving to directory 36
21	Change default watermark form layout 36

22	Screen layout of uploading new image watermark.....	37
23	Add/Delete document type form layout	37

LIST OF APPENDICES

Appendix	Page
A Tables	49
1 Use case scenario	50
2 Frequency table	54
B Figures	66
1 Use case diagram	67
2 Activity diagram	68
3 Gantt chart	71
4 Sample documents	72
C Unit and integration test	80
D Interview Report	89
E Evaluation Sheet	94
E Source Code	99

COMPUTATIONAL SECURITY OF WATERMARK FOR CAVITE STATE UNIVERSITY REGISTRAR'S OFFICE DIGITAL FILES

**Lucky Angelo A. Aquino
Angelica D. Feraer**

An undergraduate thesis submitted to the faculty of the Department of the Information Technology, College of Engineering and Information Technology, Cavite State University, Indang, Cavite. In partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science with Contribution No. BSCS. _____. Prepared under the supervision of Mr. Mark Steve V. Poniente.

INTRODUCTION

The ease of modifying and duplicating files is said to become an urgent research topic (Tran,2001). In traditional or modern approach of file management, security of files is something to pay attention to. With this, different strategies come up to maintain authorized access of files. One of this is by adding watermark to the file - which can be used for a variety of purposes including copyright protection, fingerprinting, access controlling, advertising, annotating and captioning. Types of digital watermarks are those which are visible or obvious, and are intended to be so. These are usually images that are superimposed upon a still picture or a moving picture. The intention is either that in the event the images are copied then the ownership is not in dispute, or to prevent any realistic commercial use of the images if they are copied because their quality would not be acceptable.