



PROJECT REPORT
NEW IMAGE EFFECTS BY COMBINING
FILTERS

	PERPUSTAKAAN
NO. INV :	215 / 5 / IK / C. 1
TGL :	7 oktober 2013
PARAF :	

Glenn Ricardo Sual
09.02.0007
2013

FACULTY OF COMPUTER SCIENCE
SOEGIJAPRANATA CATHOLIC UNIVERSITY

Jl. Pawiyatan Luhur IV/1, Bendan Duwur, SEMARANG 50234

Telp. 024-8441555 (hunTING) Web: <http://www.unika.ac.id>

Email: ikom@unika.ac.id

APPROVAL AND RATIFICATION PAGE

PROJECT REPORT

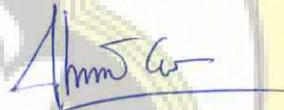
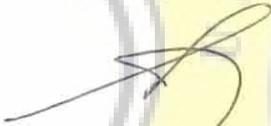
NEW IMAGE EFFECT BY COMBINING FILTERS

This project report has been approved and ratified by the Dean of faculty of Computer Science and Supervisor on July 17th 2013

With Approval,

Examiners,

Supervisor,



Suyanto E.A, Ir, M.Sc

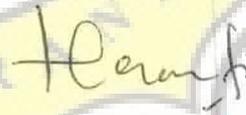
Shinta Estri Wahyuningrum, S.Si., M.Cs

NPP : 058.1.1992.116

NPP : 058.1.2007.272

Examiners,

Examiners,



R. Setiawan Aji N, ST., McompIT

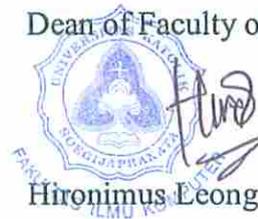
Rosita Herawati, ST., MIT

NPP : 058.1.2004.264

NPP : 058.1.2004.263

Examiners,

Dean of Faculty of Computer Science,



Hironimus Leong, S.Kom., M.Kom

Hironimus Leong, S.Kom., M.Kom

NPP : 058.1.2007.273

NPP : 058.1.2007.273

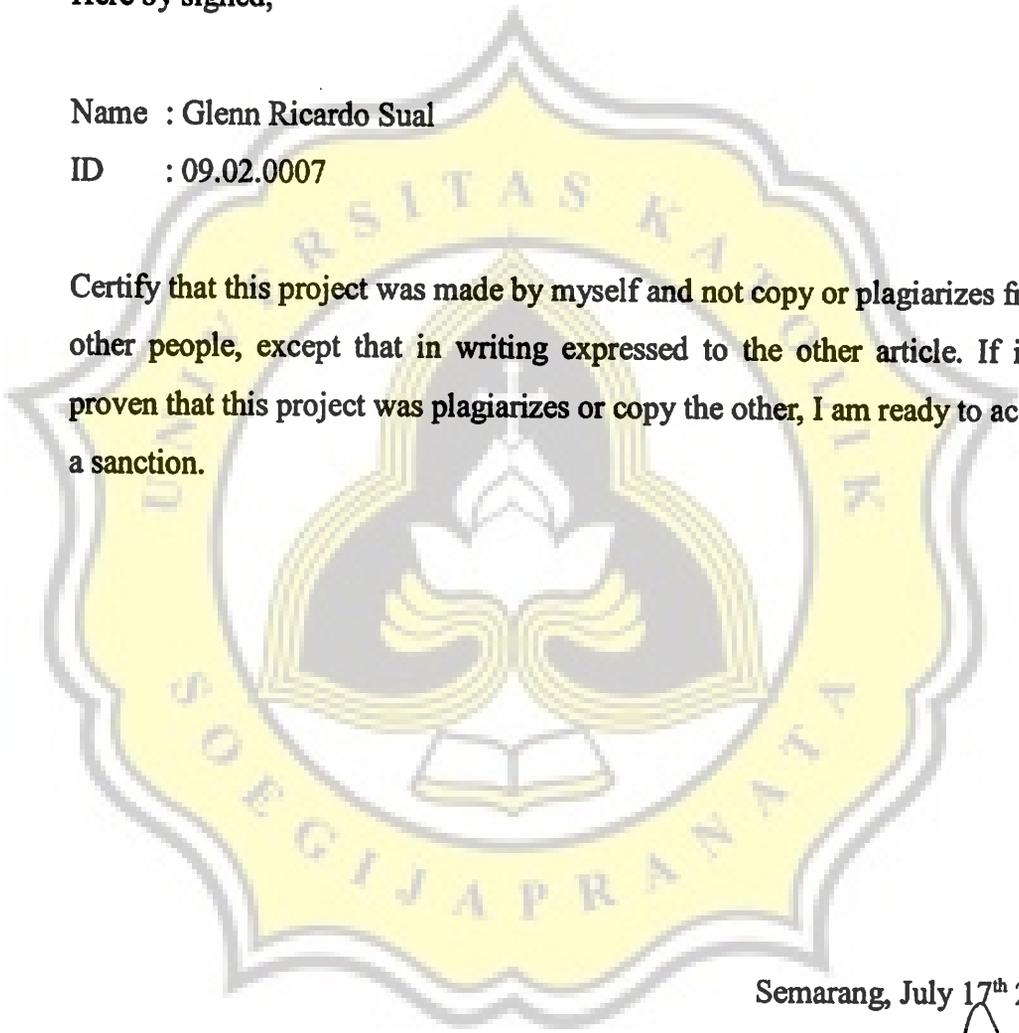
STATEMENT OF ORIGINALITY

Here by signed,

Name : Glenn Ricardo Sual

ID : 09.02.0007

Certify that this project was made by myself and not copy or plagiarizes from other people, except that in writing expressed to the other article. If it is proven that this project was plagiarizes or copy the other, I am ready to accept a sanction.



Semarang, July 17th 2013

Glenn Ricardo Sual

09.02.0007

FOREWORD

Thanks to God for the blessing, so the writers have been completed this project with title: "NEW IMAGE EFFECT BY COMBINING FILTERS"

In this opportunity, writer would thanks to:

1. My mother, Megawati Pingkan Priscilla that support me to finish this project.
2. Mrs. Shinta Estri Wahyuningrum, S.Si., M.Cs as my supervisor, for his advice, and ideas that inspired me.
3. All lecturers in Faculty of Computer Science.
4. All my best Friend in ikom and many more for support to finish this project.
5. IKOM SOEGIJAPRANATA CHATOLIC UNIVERSITY.

Finally, writer apologizes because this project is not perfect, Hopefully This project may be useful for everyone

Semarang, July 17th 2013



Glenn Ricardo Sual

09.02.0007

ABSTRACT

Image manipulation become more interesting because there are a lot of image effect program created with many features. In this project, the writer try to create image manipulation program to make some effects.

This project trying to implement some basic effects and analysis it, and combine it to be a new image effect from it. The writer try 4 basic image effects. They are blur, sharpen, invert, and edge detection.

Finally the writer get the new image effect based on invert color and sharpen mask.

Keywords : image processing, filter mask

TABLE OF CONTENT

COVER	i
APPROVAL AND RATIFICATION PAGE	ii
STATEMENT OF ORIGINALITY	iii
FOREWORD	iv
ABSTRACT	v
TABLE OF CONTENT	vi
TABLE OF FIGURE	viii
TABLE OF TABLE	x
CHAPTER I: INTRODUCTION	1
1.1 Background	1
1.2 Scope	1
1.3 Objective	1
CHAPTER II: LITERATURE STUDY	2
2.1 Data Structures	2
2.1.1 Matrix	2
2.2 Algorithm	2
2.2.1 Sharpen Filter	3
2.2.2 Blur Filter	3
2.2.3 Edge Detection Filter	4
2.2.4 Invert Color	4
CHAPTER III: PLANNING	5
3.1 Research Methodology	5
3.2 Project Management	5
CHAPTER IV: ANALYSIS AND DESIGN	6
4.1 Analysis	6
4.1.1 Use Case Diagram	6

4.1.2 Flow Chart Diagram	7
4.1.3 Activity Diagram	8
4.2 Design	9
4.2.1 Class Diagram	9
CHAPTER V: IMPLEMENTATION AND TESTING	13
5.1 Implementation	13
5.2 Testing	18
CHAPTER VI: CONCLUSION AND FURTHER RESEARCH ..	25
REFERENCES	26

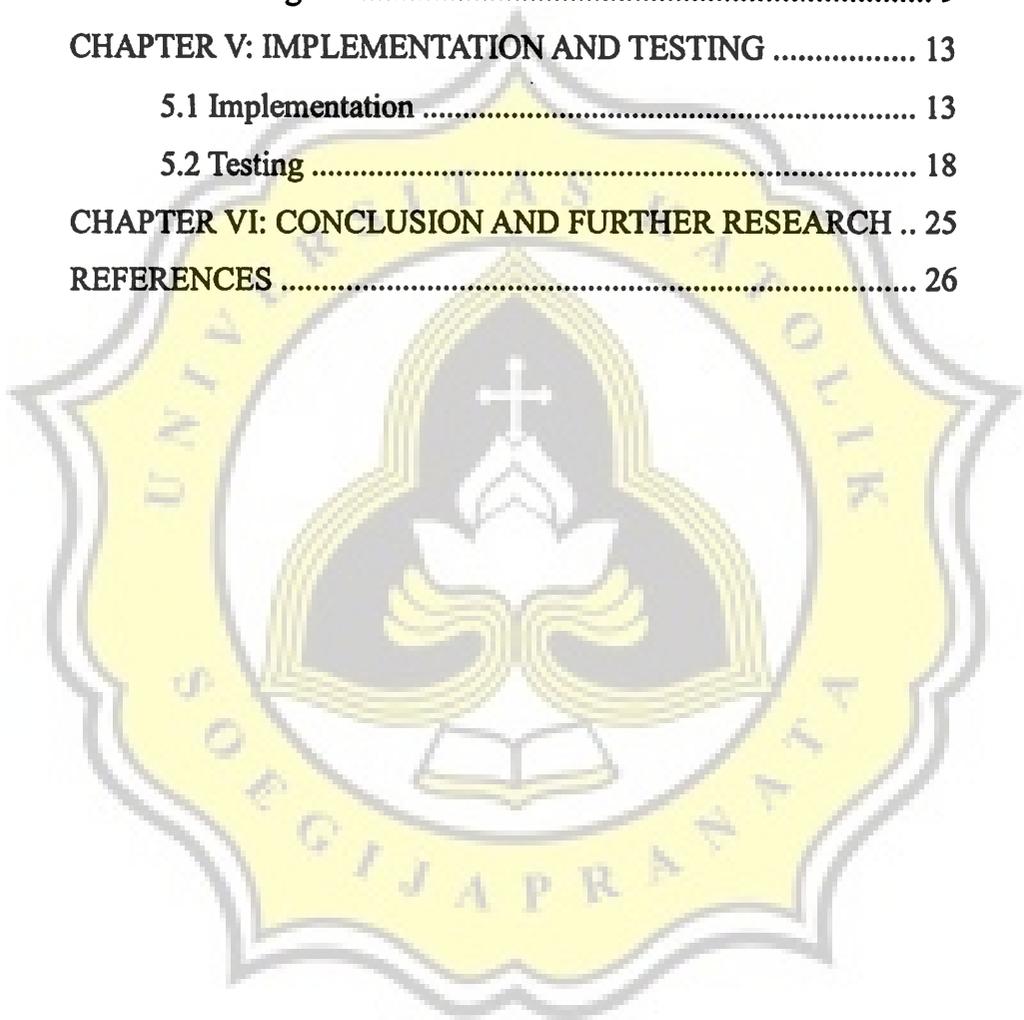


TABLE OF FIGURE

Figure 2.1 Two Dimensional Array	2
Figure 2.2.1 Red Green Blue Channel	2
Figure 2.2.1 Filter mask 3x3 (sharpen)	3
Figure 2.2.2 Filter mask 3x3 (blur)	3
Figure 2.2.3 Filter mask 3x3 (edge detection)	4
Figure 4.1.1 Use Case Diagram	6
Figure 4.1.2 Flow Chart Diagram	7
Figure 4.1.3 Activity Diagram	8
Figure 4.2.1 TA class	9
Figure 4.2.2 SetGambar class	9
Figure 4.2.3 ActionListener class	10
Figure 4.2.4 EdgeDetection class	10
Figure 4.2.5 Blur class	11
Figure 4.2.6 Sharpen class	11
Figure 4.2.7 Invert class	12
Figure 4.2.8 Cartoon class	12
Figure 5.1.1 GUI code	13
Figure 5.1.2 Action Listener Code	14
Figure 5.1.3 Diplay original image	15
Figure 5.1.4 Edge Detection Filter	15
Figure 5.1.5 Edge Detection Filter	16
Figure 5.1.6 Blur Filter Mask	16
Figure 5.1.7 Sharpen Filter Mask	17
Figure 5.1.8 Invert Process	17

Figure 5.1.9 New Image Filter	17
Figure 5.2.1 GUI Interface	18
Figure 5.2.2 File Chooser	18
Figure 5.2.3 Edge Detection Image Result	19
Figure 5.2.4 Edge Detection Pixel	19
Figure 5.2.5 Blur Image Result	20
Figure 5.2.6 Blur Pixel	20
Figure 5.2.7 Sharpen Image Result	21
Figure 5.2.8 Sharpen Pixel	21
Figure 5.2.9 Invert Image Result	22
Figure 5.2.10 Invert Pixel	22
Figure 5.2.11 New Effect Image Result	23
Figure 5.2.12 New Effect Pixel	23
Figure 5.2.13 Reseting Filter	24

TABLE OF TABLE

Table 3.1 Project Management 5

