

THESIS TITLE IN CAPS



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FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY
VIRTUAL UNIVERSITY OF PAKISTAN
LAHORE, PAKISTAN
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THESIS TITLE

By

NAME

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VIRTUAL UNIVERSITY OF PAKISTAN

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2013

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DEDICATION

To

ACKNOWLEDGEMENTS

Foremost, all praises to Almighty Allah for blessing me with strength and enabling me to successfully complete this work.

You can add you teachers, parents, friends, etc.

(Name of Student)

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ABSTRACT

This is less than one page comprehensive abstract of your research work.

CHAPTER 1

INTRODUCTION

HERE IS JUST A SAMPLE. YOU HAVE TO WRITE YOUR OWN HEADINGS AND TEXT. THE FIRST CHAPTER WILL CONTAIN THE COMPLETE INTRODUCTION, MOTIVATION TO RESEARCH, BACKGROUND AND ANY OTHER INTRODUCTORY MATERIAL RELEVANT TO YOUR RESEARCH. ONLY BLACK COLOR OF TEXT WILL BE USED THROUGHOUT THESIS.

1.1 Background

Application of the design patterns (Gamma *et al.*, 1994 and Fowler, 2002) is among the best software design practices. Design patterns (Pree, 1995 and Manolescu *et al.*, 2006) are applied in program changes. transformed directly into code (Buschmann *et al.*, 2007). Design patterns make the entered designs.

1.2 Motivation and Problem Statement

other related design pattern information (Dong and Zhang, 2003). Therefore different authors the software design. Porras and Gueheneuc (2010) concluded that all existing approaches do not

1.3 Structure of Thesis

Chapter 1 is about introduction. Chapter 2 ..., Chapter 3....

CHAPTER 2

REVIEW OF LITRATURE

You have to give the review of literature year wise. Starting from 2013, then 2012, 2011 and so on.

CHAPTER 3

MATERIALS AND METHODS

COMPLETE DETAILS OF YOUR WORK, TOOLS AND TECHNIQUES USED IN RESEARCH. BELOW IS JUST A SAMPLE YOU HAVE TO WRITE YOUR OWN.

3.1 Motivation for Proposed Solution

It is revealed through the Literature that the current design pattern

3.1.1 Pattern: (Gamma Approach)

instances of a design pattern may exist in a class diagram but this approach cannot distinguish the multiple instances of a design pattern. Figure 3.1 presents the concept of this approach.

3.1.2 Stereotype

Stereotype enhanced UML diagrams (Dong *et al.*, 2007) represent the roles that a class, operation and visualization of different

3.1.3 Comparison of

the same design pattern. We will use Dong approach to overcome this limitation of Gamma's approach.

FIGURE WILL BE ON A SEPARATE PAGE. TWO SMALL FIGURES MAY BE ON SAME PAGE. NO THESIS TEXT WILL BE ON FIGURE PAGE. THERE WILL BE NO BLANK SPACE ON THE PAGES BEFORE OR AFTER THE FIGURES. CAPTION OF THE FIGURE WILL BE ON THE BOTTOM. IT IS DISCOURAGED TO REUSE THE FIGURES OF OTHER RESEARCHERS, HOWEVER IF IT IS INEVITABLE THEN REDRAW AND GIVE PROPER REFERENCE. FIGURE WILL BE NUMBERED ACCORDING TO CHAPTER NUMBER. FOR EXAMPLE THE FIRST FIGURE IN CHAPTER 1 WILL BE NUMBERED AS FIGURE 1.1, THEN 1.2 AND SO ON. SIMILARLY THE CHPATER 2 WILL CONTAIN FIGURE 2.1, 2.2 AND SO ON

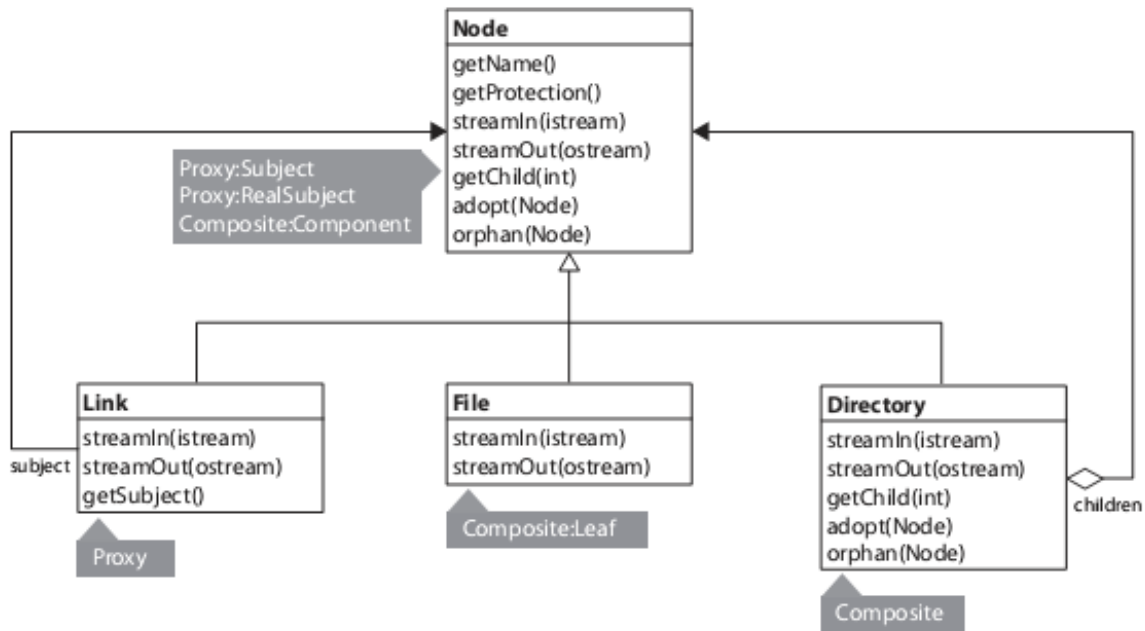


Figure 3.1 Title/Caption of Figure

Moreover, a major limitation of both these approaches is that they do not focus on the representation and visualization of different kinds of overlapping.

3.2 Integrated Approach for Design Patterns Visualization

The key motivation for this approach is to represent and visualize the pattern related information in the composition of design patterns.

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Table 3.1 Stereotypes

Stereotypes	applies to	Description
<<Pat>>	Attribute	Identifies the participation of this attribute in a design pattern
<<Pop>>	Operation	Identifies the participation of this operation in a design pattern

Table 3.2 Tagged Values

Stereotypes	Tagged value	Description
<<Pat>>	Pattern[Pinstance]:Role	Identifies that the associated attribute
<<Pop>>	Pattern[Pinsta	Identifies that the associated operation

CHAPTER 4

RESULTS AND DISCUSSION

4.1 A Real World

The case study presented in this chapter is a part of open source software JHotDraw 5.1.
JHotDraw

4.1.1 Implementation of Gamma

Pattern: Role notation (Gamma's Approach) does not represent the role that an attribute and

**THIS CHAPTER ALSO INCLUDES THE RESULTS AND DISCUSSION ALONG WITH
CONCLUSION**

CHAPTER 5

SUMMARY

MAXIMUM TWO PAGES

5.1 Summary

5.2 Thesis Contributions

5.3 Future Work

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APPENDICES