## **UML 2 JAVA**

By

Ovais Mushtaq



Supervised by Mr. Zarrar Javaid

A report is submitted to the department of Computer Science.

Bahria Institute of Management and Computer Sciences, Islamabad
In partial fulfillment of requirement for the degree of MCS

Department of Computer Sciences

Bahria Institute of Management and Computer Sciences, Islamabad

Bahria University, Islamabad

#### BAHRIA INSTITUTE ISLAMABAD

Dated	
Dateu	

#### FINAL APPROVAL

This is to certify that we have read the project report submitted by Mr. Ovais Mushtaq and is our judgment that this report is of sufficient standard to warrant its acceptance by Bahria University, Islamabad for the degree of Masters in Computer Sciences.

**COMMITTEE:-**

1. SUPERVISOR

Mr. Zarrar Javaid

2. HEAD OF DEPARTMENT

Mr. Fazal Wahab

3. INTERNAL

Mr. Fazal Wahab

3. EXTERNAL

Dr. Ismail Shah

### **Dedication**

To my parents, the teacher who taught me Java from the beginning and to all those Java developers who are using all their best efforts to develop amazing algorithms.

## Acknowledgements

First of all I am very thankful to my almighty ALLAH Who gave me the courage and patience to complete this difficult task.

I would like to express my gratefulness, most sincere appreciation and special thanks to my project supervisor, Mr. Zarrar Javaid for his fabulous suggestions, invaluable advice and encouragement through the completion of project.

Ovais Mushtaq

### **Abstract**

This document describes JAVA2UML project. The goal of this project was to develop a case tool which is user friendly and can be used for teaching purposes. In JAVA2UML class diagrams are used to generate skeleton code of JAVA.

This tool was designed in a modular fashion so any of the major modules can be updated or changed with minimal impact on the other modules. This allows it to be a continual work-in-progress that can be expanded on and improved for years to come.

# **Table of Contents**

Chapter 1	INTRODUCTION	1
Chapter 1	1.1 Introduction	2
	1.2 UML2JAVA	3
	1.2.1 Unified Modeling Language	3
	1.2.2 UML Class Diagram	3
Chapter 2	LITERATURE SURVEY	4
	2.1 Why Program in Java	5
	2.2 UML for Java Programmers	5
	2.2.1 Class Diagram	6
	2.2.1.1 Elements of Class Diagram	6
	2.2.1.2 Association	8
	2.2.1.3 Composition	8
	2.2.1.4 Dependency	8
	2.2.1.5 Generalization	8
Chapter 3	PROPOSED SYSTEM	9
Chapter 5	3.1 Purpose	10
	3.1.1 Benefits	10
	3.1 System Design	11
	3.1.3 Data Flow Diagram	11
	3.1.2 Class Diagram	18
Chantar A	IMPLEMENTATION	47
Chapter 4	4.1 Problem Definition	48
	4.1.1 Scope	48
	4.1.2 Objectives	48
	4.1.3 Class responsibility Collaboration	48

Chapter 5	TESTING/EVALUATION	50
	5.1Testing	51
	5.2 Testing Plan	51
	5.2.1 White Box Testing	51
	5.2.2 Black Box Testing	52
	5.3 System Acceptance Test	53
	5.3.1 Alpha Testing	53
	5.3.2 Beta Testing	53
	5.4 Debugging	53
	5.4.1 Syntax Errors	53
	5.4.2 Logic Errors	54
	5.5 JAVA2UML Testing	54
	5.5.1 Module Testing	54
	5.5.2 Integrated Testing	54
	5.5.3 Efficiency Testing	54
	5.5.4 Portability Testing	54
	5.5.5 Error Recovery	55
Chapter 6	CONCLUSION	56
Chapter 7	FUTURE DEVELOPMENT	58
Chapter 7	7.1 Future Enhancements	59
	7.2 Future Development of Java	59
1° A	USER MANUAL	
Appendix-A		
Annendix-B	SNAPSHOTS	

# **Table of Diagrams**

ELEMENTS OF CLASS DIAGRAM	Fig 2.2.1.1	7
DATA FLOW DIAGRAMS		11
1. Level 0	Fig 3.2.1.1	11
2. Level 1	Fig 3.2.1.2	12
3. Level 2 (Bubble-1)	Fig 3.2.1.3	13
4. Level 2 (Bubble-2)	Fig 3.2.1.4	14
5. Level 2 (Bubble-4)	Fig 3.2.1.5	15
6. Level 2 (Bubble-5)	Fig 3.2.1.6	16
7. Level 2 (Bubble-6)	Fig 3.2.1.7	17
CLASS DIAGRAMS		10
1. FlatMenuBar	Fig 3.2.2.1	18
2. ClassFigure	Fig 3.2.2.2	19
3. AssociationTool	Fig 3.2.2.3	19
4. ClassEditor	Fig 3.2.2.4	20
5. ClassItem	Fig 3.2.2.5	21
6. ClassRenderer	Fig 3.2.2.6	22
7. AssociationBuilder	Fig 3.2.2.7	23
8. AttributeNamingComponent	t Fig 3.2.2.8	24
9. BuildAction	Fig 3.2.2.9	24
10. CodeBuilder	Fig 3.2.2.10	25
11. CustomComponent	Fig 3.2.2.11	25
12. InheritanceBuilder	Fig 3.2.2.12	26
13. FileAction	Fig 3.2.2.13	27
14. JavaBuilder	Fig 3.2.2.14	28
15. ObjectBuilder	Fig 3.2.2.15	29
16. DiagramContainer	Fig 3.2.2.16	30
17. ExportAction	Fig 3.2.2.17	31
18. CustomUI	Fig 3.2.2.18	32
19. CompositionTool	Fig 3.2.2.19	33
20. DependencyTool	Fig 3.2.2.20	33
21. DesignItem	Fig 3.2.2.21	34
22. FlatArrowButton	Fig 3.2.2.22	34
23. ColorAction	Fig 3.2.2.23	35
24. CardinatlityTool	Fig 3.2.2.24	36
25. RealizationTool	Fig 3.2.2.25	37
26. RealizationItem	Fig 3.2.2.26	38
27. ealizationBuilder	Fig 3.2.2.27	39
28. CompositionBuilder	Fig 3.2.2.28	40
29. CompositionItem	Fig 3.2.2.29	41
30. GeneralizationItem	Fig 3.2.2.30	42
31. GeneralizationTool	Fig 3.2.2.31	43

32. InterfaceFigure	Fig 3.2.2.32	43
33. InterfaceEditor	Fig 3.2.2.33	44
34. PrintableAction	Fig 3.2.2.34	45
35. ScaledPrinataableAction	Fig 3.2.2.35	46
36. ToolPalette	Fig 3.2.2.36	47