E-LEARNING

(Client Side)

by

Musawer Kamal Khan
141022-024

Bahria Institute of Management & Computer Science
Acc. No. TH2091
MFN 218
Islamabad

Supervised
by

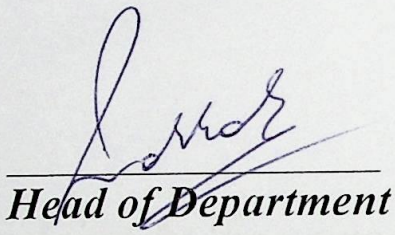
Mr. Shakeel Akhtar

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

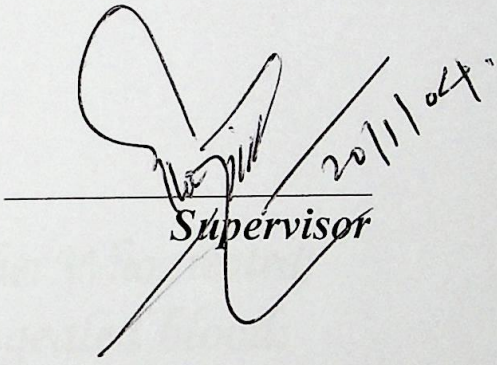
Department of Computer Sciences
Bahria Institute of Management and Computer Sciences, Islamabad
Bahria University, Islamabad
2002-2003

Certificate

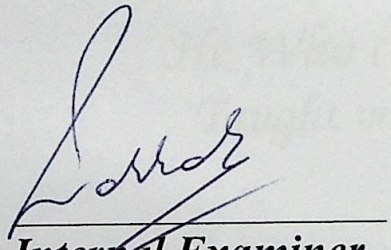
We accept the work condition in this report as a confirming to the required standard for the partial fulfillment of the degree of MCS in subject of Software Engineering.



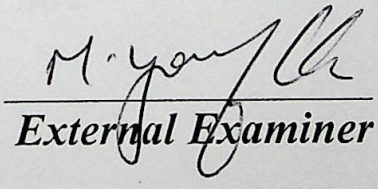
Head of Department



Supervisor



Internal Examiner



External Examiner

Proclaim! In the name of thy Lord and Cherisher Who created;
Created man out of a (mere) clot of congealed blood:
Proclaim! And thy Lord is Most Bountiful;
He Who taught (the use of) the Pen;
Taught man that which he knew not.

Dedication

To my Parents

Acknowledgement

I am very gratified to almighty Allah who gave me the courage, perseverance, endurance and determination to complete this astronomical task.

I would like to express my profound gratitude, most sincere appreciation and special thanks to my project supervisor Mr. Shakeel Akhtar for his remarkable suggestions, invaluable advice and continuous encouragement throughout the completion of Project.

I would also like to pay a bundle of thanks to Mr. Imtiaz who designed server side application for this software and gave me a big motivation and helped me a lot throughout the completion of this task.

I would also like to pay a bundle of thanks to Mr. Rizwan who gave good tips and suggestions for the completion of this task.

Finally I wish my deepest appreciation to my respectable Parents for their support and limitless patience.

Musawer Kamal Khan

Abstract

With the advancement of the Internet, e-commerce has now grown to enormous proportions, there are various on line services which have proven to be a great success examples are Flight Reservation System and Online Banking. The reason for this is user can access these services from anywhere any time. The use of Internet is increasing day by day due the facilities it provides as they save time and money.

Keeping in views of all this I have decided to make an application which lets the user to attend classes remotely. The idea is to bring new horizons in the field of communication and to ease the students and teacher so that the traveling may not be one of the hurdles in knowledge distribution and knowledge gaining.

Table of Contents

Chapter 1	**INTRODUCTION**	1
	1.1 Introduction	2
	1.2 Objectives	3
	1.3 Features	3
	1.3.1 Server Side Application	3
	1.3.2 Client Side Application	4
	1.4 Introduction to Java	5
	1.4.1 Origin of Java	5
	1.4.2 Why Program in Java	5
	1.4.3 Networking in Java	6
	1.4.4 Java Media Frame Work	7
Chapter 2	**LITERATURE SURVEY**	**8**
	2.1 The System	11
	2.1.1 Why creating E-Learning	12
Chapter 3	**PROPOSED SYSTEM**	**14**
	3.1 The Application	15
	3.2 context Diagram	15
	3.3 The Software	16
	3.3.1 The Server	16
	3.3.2 Administrator	16
	3.3.3 Client	17
	3.4 System Design	18
	3.4.1 Use Case Modeling	18
	3.4.2 Sequence Diagrams	27
	3.4.3 Class Diagrams	37

Chapter 4	**IMPLEMENTATION**	**49**
	4.1 Problem Definition	50
	4.1.1 Problems	50
	4.1.2 Scope	50
	4.1.3 Objectives	50
	4.1.4 Class responsibility Collaboration	51
Chapter 5	**TESTING/EVALUATION**	**54**
	5.1Testing	55
	5.2 Testing Plan	55
	5.2.1 White Box Testing	55
	5.2.2 Black Box Testing	56
	5.3 System Acceptance Test	57
	5.3.1 Alpha Testing	57
	5.3.2 Beta Testing	57
	5.4 Debugging	57
	5.4.1 Logical Errors	57
	5.4.2 Syntax Errors	57
	5.5 E-Learning Testing	58
	5.5.1 Module Testing	58
	5.5.4 Integration Testing	58
	5.5.5 Efficiency Testing	58
	5.5.6 Concurrency Testing	59
	5.5.7 Portability Testing	59
	5.5.8 Error Recovery	59
Chapter 6	**CONCLUSION**	**60**
Chapter 7	**FUTURE DEVELOPMENT**	**62**
	7.1 Future Enhancements	63
	7.2 Future Development of Java	63
Appendix-A	**USER MANUAL**	

Table of Diagrams

Context Diagram Fig 3.1		15
USE CASE DIAGRAMS		
1. Application Server	Fig 3.2	19
2. User Management	Fig 3.3	20
3. Administrator	Fig 3.4	21
4. Chat Room	Fig 3.5	22
5. Chat Room Control	Fig 3.6	23
6. Messaging	Fig 3.7	24
7. Drawing	Fig 3.8	25
8. Client	Fig 3.9	26
SEQUENCE DIAGRAMS		
1. Initiating Server	Fig 3.10	27
2. Initiating Administrator	Fig 3.11	28
3. Disconnecting User	Fig 3.12	29
4. Disconnecting All Users	Fig 3.13	30
5. Shutting Down Server	Fig 3.14	31
6. Administrator Connection to Server	Fig 3.15	32
7. Administrator Disconnection from Server	Fig 3.16	33
8. Administrator Settings	Fig 3.17	34
9. Chat room	Fig 3.18	35
10. Messaging	Fig 3.19	36
CLASS DIAGRAMS		
1. Server	Fig 3.20	37
2. Server Shut Down	Fig 3.21	38
3. Client	Fig 3.22	39
4. Canvas	Fig 3.23	40
5. Canvas Commands	Fig 3.24	41
6. Writing Text on Canvas	Fig 3.25	42
7. Font Selection	Fig 3.26	43
8. Drawing Line	Fig 3.27	44
9. Drawing Oval	Fig 3.28	44
10. Drawing Rectangle	Fig 3.29	45
11. Paste Picture on Canvas	Fig 3.30	45
12. Chat room	Fig 3.31	46
13. Chat room Controls	Fig 3.32	47
14. Client Socket	Fig 3.33	48
Message Path between Classes	Fig 4.1	53
Future Mobile	Fig7.1	64