CS352 Software Engineering II

Project Final Report

Chat Server

Waleed Ziad   **(Team Leader)** **20110417 CS G4**
Ahmed Abdel Hammed   **20110083 CS G3**
Hady ElHady   **20110398 CS G4**

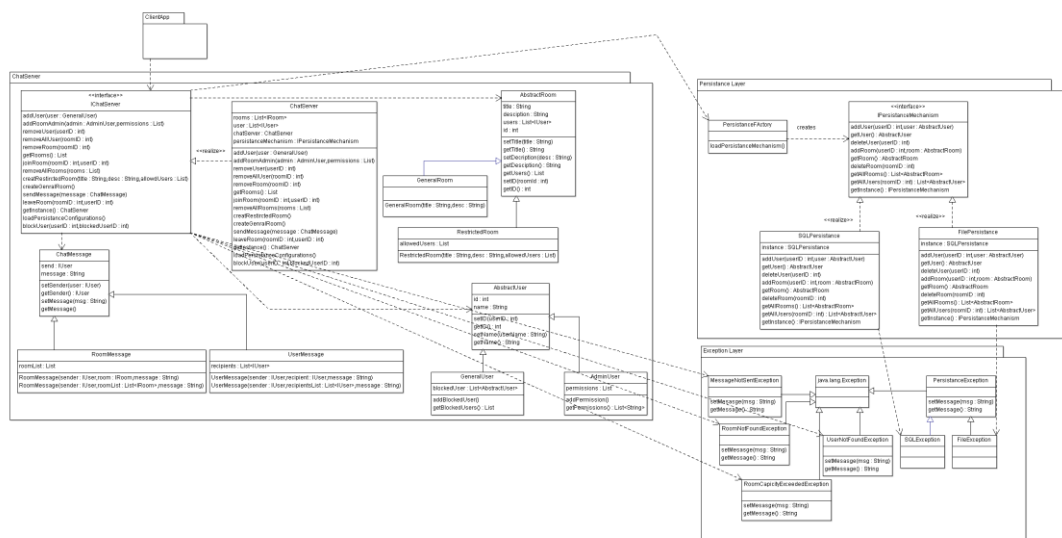# TA Mahmoud Khodeir

2014

Project Report

Introduction

- This document presents the final report about the project, its purpose, stages and the developed software.
- The target audience for this document are the developers, people working on the project or supervising it.

I. Developed Software

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- **Chat ServerLayer**

    1. **AbstractRoom:**
        o It Describes the Structure of a room.
    2. **AbstractUser:**
        o It Describes the Structure of a user.
    3. **AdminUser:**
        o It Describes the Structure of an Admin user.
    4. **ChatMessage:**
        o It Describes the Structure of a message (message content, its sender).
    5. **ChatServer:**
        o It Describes the Server and the connection between sockets and Using the SqlPesistance and its implements IChatServer Interface.
    6. **GeneralRoom:**
        o It extends from AbstractRoom and describes the structure of the general room.
    7. **GeneralUser:**
        o It extends from AbstractUser and describes the structure of the general user.

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8. **IChatServer:**
   o It's an interface which implemented by ChatServer.
9. **RestrictedRoom:**
   o It extends from AbstractRoom and describes the structure of the restricted room.
10. **RoomMessage:**
    o It extends from ChatMessage and it describes the message sended to or received from a room.
11. **UserMessage:**
    o It extends from ChatMessage and it describes the message sended to or received from a user.

- **PersistenceLayer**

1. **FilePersistance:**
   o it describes importing the data from files.
2. **IPersistanceMechanism:**
   o it's an interface which implemented by FilePersistance and SqlPersistance Classes.
3. **PersistanceFactory:**
   o it's a class to implement the Factory Design Pattern and the client which is ChatServer class when it needs an instance from PesristanceLayer it deals with PersistanceFactory.
4. **SqlPersistance:**
   o it describes importing the data from database by using different mySql Queries and by using database connection with java.

- **ExceptionLayer**

1. **FileException:**
   o it implements the exception used in FilePersistance class to throw different exceptions related to this class.
2. **MessageNotSentException:**
   o it implements the exception used in ChatServer class to throw an exception when message is not sent.
3. **PersistanceException:**
   o it implements the exception used in PersistanceLayer.
4. **RoomCapacityExceededException:**
   o it implements the exception used in ChatServer class to throw an exception when capacity of room is exceeded.
5. **RoomNotFoundException:**
   o it implements the exception used in ChatServer class to throw an exception when room is not found.
6. **SqlException:**
   o it implements the exception used in SqlPersistance class to throw different exceptions related to the queries errors and the connection errors in th database.

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7. **UserNotFoundException:**
   o it implements the exception used in ChatServer class to throw an exception when user is not found.

II. Code Organization and Configuration Management

- The project is divided into 8 directories: ChatServer, ChatServerClient, ChatServerDatabase, ChatServerPresistanceClient, ChatServerProject, CodeDocumentation, Exception Layer and Persistance Layer.
- The project was implemented and runs on NetBeans IDE 8.0
- Screenshots below show evidence of continuous usage of software repository on Github by all the team members during different time intervals.

III. Evidences of Code Review

- Commits have been submitted in Github to fix multiple errors found in different classes
- JUnit Testing classes has been added to test multiple classes in the software.
- Found below are a couple of delivery receipts as requested in the project description document of food eaten while working on Code Review at one of the team members' home.

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IV. Bonus

- Fully implemented the excluded parts which are persistence (storing the data permanently in database by MySQL) and Exception Handling.

V. Project Reflections

Member Name	Hady ElHady
What I learned from the project	- Teamwork - Github - JUnit Testing
How did collaboration work in the project	We communicated on a daily basis online and were able to delegate tasks periodically and met many times to work together and go over each other's work
Advantages and Disadvantages of the project	Advantage: Project was suitable for the allotted time Disadvantage: Not much flexibility with the design and the structure
How it can be improved next year	Giving the students more flexibility regarding their designs and software implementation.
Any thoughts or ideas or feelings you have	I'm glad to have worked in such an amazing team.

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Member Name	Waleed Ziad
What I learned from the project	• Improved my Java • JUnit Testing • Coding Style
How did collaboration work in the project	We communicated on a daily basis online and were able to delegate tasks periodically and met many times to work together and go over each other's work
Advantages and Disadvantages of the project	Advantage: Focused more on the design and the documentation phases than the actual coding Disadvantage: Difficulty of the two project vary greatly as the Chat Server seems to be somewhat easier than the Shopping Cart.
How it can be improved next year	Choosing projects which are somewhat equal in difficulty to make it more fair.
Any thoughts or ideas or feelings you have	This project was a great way to end the course.

Member Name	Ahmed AbdelHammed
What I learned from the project	• Databases • Connection the Database with Java • Improved my Java
How did collaboration work in the project	We communicated on a daily basis online and were able to delegate tasks periodically and met many times to work together and go over each other's work
Advantages and Disadvantages of the project	Advantage: Delving more into the use of databases and servers in software. Disadvantage: No constant supervision or feedback regarding the progress of the project.
How it can be improved next year	More supervision and periodic feedback regarding the progress of each team's project.
Any thoughts or ideas or feelings you have	Feeling very proud of what I have accomplished with the project.

Ownership Report

Item	Owner
Developed Software	Ahmed AbdelHammed
Code Organization and Configuration Management	Hady ElHady
Evidences of Code Review	Waleed Ziad
Project Reflections	Waleed Ziad, Ahmed AbdelHammed, Hady ElHady