Design and Implementation of the Instant Messaging Tool Based on JAVA

Chaojin Lu, Hebei University of Engineering, Handan, China

ABSTRACT

Today, the rapid development of information transmission has led to the advent of the Internet era. This makes network instant messaging tools more and more convenient and favored by people so that instant messaging is increasingly important in modern times. The presented design is used to reflect the practicality of instant messaging by designing an instant messaging tool based on Java. Software adopts C/S structure of the client and server through network programming socket and TCP/UDP communication protocol for sending and receiving messages. The object oriented development principles are based on Java using the eclipse development platform of the server and client to the overall design, the software in the design process, and the use of multi threading technology in order to achieve multiple threads running simultaneously and to improve the utilization of server. This design using MySQL database accesses the database by JDBC Bridge. The software can realize user registration, user login, modify personal settings, search and add friends, begin friends chat, take screenshots, complete file transfer, and other functions.

KEYWORDS

C, S, Instant Messaging, Java, Multithreading, MySQL, Socket

1. INTRODUCTION

1.1. Background

In the computer since the birth of the development of the Earth has entered the Internet era, but also today in the concept of Internet+, network communications has been in a state of rapid development. Today, companies are choosing to build their own local area network to work efficiently and quickly to deal with the results of various problems. The internal LAN transmission rate is much faster than the external network, so through the internal network, the information transfers between employees faster than the external network. With the passage of time, the size of the company will gradually expand; the business will be more and more. For a company, the confidentiality of company information is very important. So in the business with the company, the company hopes that employees only through the network to communicate, to prevent the company’s internal confidentiality is leaked. Therefore, some people want to develop in the LAN to communicate within the LAN instant messaging software, Through this kind of software, the company’s internal staff can exchange information at any time, held a network meeting, etc., in improving the efficiency of the work of the message transmission at the same time protect the company’s internal information confidentiality.

This research is based on the use of Socket communication means of LAN instant messaging tool design, Using Socket designed to provide a good mechanism for internal company LAN, safe, rapid information delivery mechanism. Throughout the development process, we do not have to
change the original pattern of the company’s internal LAN, which reduces the development costs, and this mechanism of the software in the internal LAN resources are limited circumstances, can be a good way to reduce bandwidth utilization, improve efficiency, but also to meet the communication needs of personnel.

Based on Java using Socket instant messaging tools in large, medium and small companies within the communication, the task of decentralization, staff discussions and so have a certain value. LAN transmission rate is much higher than the external network speed, the data is not easy to steal, through multi-threaded technology, can effectively reduce the bandwidth burden, strengthen the server fluency.

Software like this mechanism, not only in the enterprise can be used, as long as the team-type cooperation in line with human activities can be used. Therefore, it can not only improve the transmission rate of information, there is a broader application prospects, I believe in the future society, and the impact of human activities will be more and more deep.

### 1.2. Development Overview

Instant messaging in today’s popular network era, attached to the Internet or other types of wired, wireless networks, Known for real-time and efficient network communication technology has a pivotal position in the modern. Especially in today’s network technology has been developed to the era of wireless communications, Whether on the PC side or mobile side, a variety of communication tools are dazzling. It is based on the Internet for the exchange between people to develop virtual face to face communication. Until now, the major platforms have a basic of their own products, in order to facilitate the exchange between users.

#### 1.2.1. Status of Foreign Research

November 1996 ICQ released in the world, which represents the advent of this Internet IM era, however, people did not think that such a humble little software in just a few years’ time was accepted by people, since the IM industry meteoric rise so far. Instant messaging tools in today’s already indispensable network applications, and domestic and foreign chat tools are numerous. The world’s first ICQ instant messaging tools in the industry was fast, and within a very short time to reach the heights no one can shake. In the initial period, ICQ just started only for instant messaging and view the user list, but because of its practicality is very high, just released by the public favorite. It in just two years’ time, the user will be extended to 12 million people, this phenomenon was the IT industry at the time of the hegemony of enterprises Yahoo and Microsoft to see the hidden business opportunities, And soon launched their own independent research and development of communications products: Yahoo Messenger, MSN Messenger. So the basic market has been imaged IM, Microsoft and Yahoo have two major giants involved in human society officially entered the IM era.

#### 1.2.2. Status of Domestic Research

When ICQ popularized worldwide in the domestic various imitations ICQ Chinese IM software have also launched, today, occupy the domestic market mainly for tencent QQ and Microsoft’s MSN, yahoo messenger, etc. Tencent QQ accounted for more than 70% of the domestic market. To QQ, for example, QQ released to today, QQ has experienced nearly 20 years without losing until becoming the largest communications software, but also to join a variety of elements, so that its function more diversified. Tencent has now launched a new WeChat, Taobao launched Ali Want and other major platforms are developing their own communications tools.
Related Content

Activity Recognition Using Ubiquitous Sensors: An Overview
www.igi-global.com/chapter/activity-recognition-using-ubiquitous-sensors/88795?camid=4v1a

Modern Educational Technique Center Educational Media Management Based on Design and Practice of Questionnaire
www.igi-global.com/article/modern-educational-technique-center-educational/62294?camid=4v1a
CRS: A Course Recommender System  
www.igi-global.com/chapter/crs/92942?camid=4v1a

Mobile Geographic Information Systems  
Yang Li and Allan J. Brimicombe (2012). Ubiquitous Positioning and Mobile Location-Based Services in Smart Phones (pp. 230-253).  
www.igi-global.com/chapter/mobile-geographic-information-systems/67045?camid=4v1a