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Saya: NG ENG CHUI

(HURUF BESAR)

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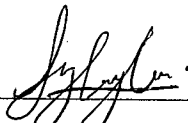
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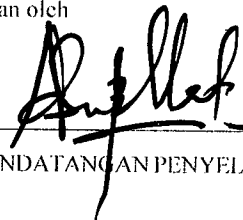
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Alamat Tetap:

257, EASTERN GARDEN,

36000 TELUK INTAN,

PERAK

Nama penyelia:

ABDULLAH BIN MAT SAFRI

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ABSTRACT

Chatting system is a program developed for students in delivering their message to another student by using the chatting system program. It also provides offline messages to be delivered once the user online or sign in to the chatting system. It is useful when students use this chatting system to discuss their assignments or projects without going out for an outdoor meeting. The chatting system is based on peer to peer concept where student need to initialize server in order to sign in to the chatting system. Without the present of Internet, student or user will still available to connect to the chatting system and deliver the messages. This means that the chatting system working in local area network environment. Username and password are required as authentication to get sign in to the chatting system. Besides, the chatting system must fulfill the function of delivering message in a local area network. As a result, the chatting system can help students in delivering the message to recipient successfully. Lastly, students can benefit from the chatting system in discussing on assignments and projects by sending messages to each other.

ABSTRAK

Sistem Chatting adalah sebuah program yang dibangun untuk pelajar dalam menyampaikan mesej mereka kepada pelajar lain di bawah program ini. Hal ini juga memberikan mesej offline untuk disampaikan selepas pengguna program atau masuk ke sistem Chatting. Kegunaan ini adalah kepada pelajar menggunakan sistem bual untuk membincangkan tugas atau projek tanpa pergi keluar untuk pertemuan luar. Sistem bual berdasarkan pada "peer to peer" konsep di mana pelajar perlu menginisialisasi server untuk masuk ke sistem berbual. Tanpa kehadiran Internet, mahasiswa atau user masih akan tersedia untuk menyambung ke sistem Chatting dan menyampaikan mesej. Ini bermakna bahawa sistem Chatting bekerja di persekitaran local area network. Username dan password yang diperlukan sebagai pengesahan untuk masuk ke system Chatting. Selain itu, system chatting mesti memenuhi fungsi menyampaikan mesej dalam satu "local area network". Hasilnya, system chatting boleh membantu pelajar-pelajar dalam menyampaikan mesej untuk penerima dengan jayanya. Akhir sekali, pelajar-pelajar boleh memanfaatkan daripada sistem chatting dalam membincangkan tugas-tugas dan projek-projek dengan menghantar mesej di antara satu sama lain.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter will provide a brief overview of the entire project include objective of the project, scope and problem statement. The objective of the project is the aims carry out to fulfil the task of the objective. Scope of the project is mainly about the foundation on which the schedule budget and resources plans are built. Lastly, problem statement will discuss about clear concise description of the current messaging system which need to be addressed.

Educational Chatting System is a software program where user can use this chatting system to chat under a Local Area Network connection. This program is using the peer to peer concept that the partition tasks or work loads between service peers. The client is installed on a particular computer by an end user and is the interface that he or she uses to communicate with others. Peers are equally privileged, equipotent participants in the application. Peer to peer system deliver services for which the participants share a portion of their own resources which are provided directly to other participants or users without an intermediary network hosts.

Peer to peer network are typically formed by ad-hoc additions of nodes. The program highlight peer to peer concept where users can connect and deliver messages to one another. A distributed messaging system that is often likened as an early peer-to-peer architecture is the network of new system that is in principle a peer to peer model from the user or client perspective.

Educational Chatting System network is created when two or more PCs are connected and share resources without going through a separate server computer. A peer to peer chatting system allowed users to connect together at a point which is a temporary server and other user also connect to this point to deliver messages in the chatting system. Each user has to connect to each other or having a same network will enable the user to communicate by sending messages to one another.

Initiation made by a user A as host of the Educational Chatting System and the other user can join into the conversation on the same time. If the user A disconnect or terminate the program, then all other user will disconnect from the conversation. All the chatting log will save by host as a further revision so that important points discuss on the conversation can be view again. The users can connect together in a Local Area Network (LAN) where users can send messages to each other without the presence of internet connection. This Educational Chatting System is more on Local Area Network where students or user on the same network or subnet can send messages to each other.

1.2 Problem Statement

Nowadays, instant messenger become more popular among students in a university or user in a workplace. Instant messenger used as a interaction tool for users to send messages, file sharing, and video chatting among users who connect together to the instant messaging. Any user can easily register an account in the instant messenger such as Windows Live Messenger which an email account is required to register a new account. In order to add other user into the chatting list, then user need to add the email contact and a notification will be send to added user.

Vulnerability of instant messenger can be best described as any user can register an account with Windows Live Messenger or Yahoo Messenger. Falsifying a user identity in the instant messenger can be done and other user will not notice the danger of an attacker in the instant messenger. Most of the strangers in the instant messenger use this opportunity to cheat the young generations. Besides, Internet connection is required by every user to connect together in order to send messages to each other. Without the presence of Internet, user will not able to deliver their messages to the desired user.

1.3 Objective

- i) To develop an intranet chatting system for students in a university.
- ii) To apply the offline messages to be saved and delivered to user when user log into the chatting system.

1.4 Scope

Basically, Educational Chatting System will focus on this scope:

- i) Educational chatting system is a program which will develop specifically for Universiti Malaysia Pahang (UMP) where students able to send messages to each other.
- ii) This Educational Chatting System basically based on peer to peer where a host or user can host a communication through a local area network and all the users who connect in one chatting room will be able to send messages to each other.
- iii) It will focuses on text messaging where the message delivered to one another successfully.
- iv) Users for this chatting system are students in Universiti Malaysia Pahang.

1.5 Thesis Organization

The thesis consists of five chapters which are Chapter 1 until chapter 6. Chapter 1 is describing the introduction, problem statement, objective, project's scope and thesis organization. Chapter 2 reviews the paper or research of some researchers who contributed to the same field of this project. Then, Chapter 3 explains about the methodology used in developing the project and also the process flow throughout the project. After that, implementation is interpreted in Chapter 4 and Chapter 5 will be the result and discussion of the project. Lastly, Chapter 6 discuss about the conclusion of the project.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Literature review is a form of expression that review critical points of current knowledge on a discuss topic. The ultimate goal is to bring the current literature on a Peer to Peer Chatter topic for this project. This includes the studies of existing system and the technology used to build up the application.

2.2 Studies of Existing Systems

Nowadays, the usage of internet increase as many users use it for many purposes. This is also same with the students in Universiti Malaysia Pahang where increased from one year to another year. A lot of current instant messenger is available and user has the option to choose the instant messaging that he or she likes. Among the famous instant messaging was Skype, ICQ, Windows Live Messenger, Yahoo Messenger and etc. The benefits of instant messaging are numerous, including the ability to know when personal contacts are available, having access to nearly instantaneous communication and the ability to carry on several information conservations at once.

By this kind of software, people who log online can get response in a short time after sending message which is a way to real-time communication and chatting. For most people, it is cheaper than chatting by telephone; furthermore, the newest instant messaging software integrated data transmission, video chatting, video conference, email and so on. People approve instant messaging software not only for fun and chat, but also for the excellent performance in business communication. For this research purposes, here stated an example of the existing application for the comparisons.

2.2.1 Windows Live Messenger

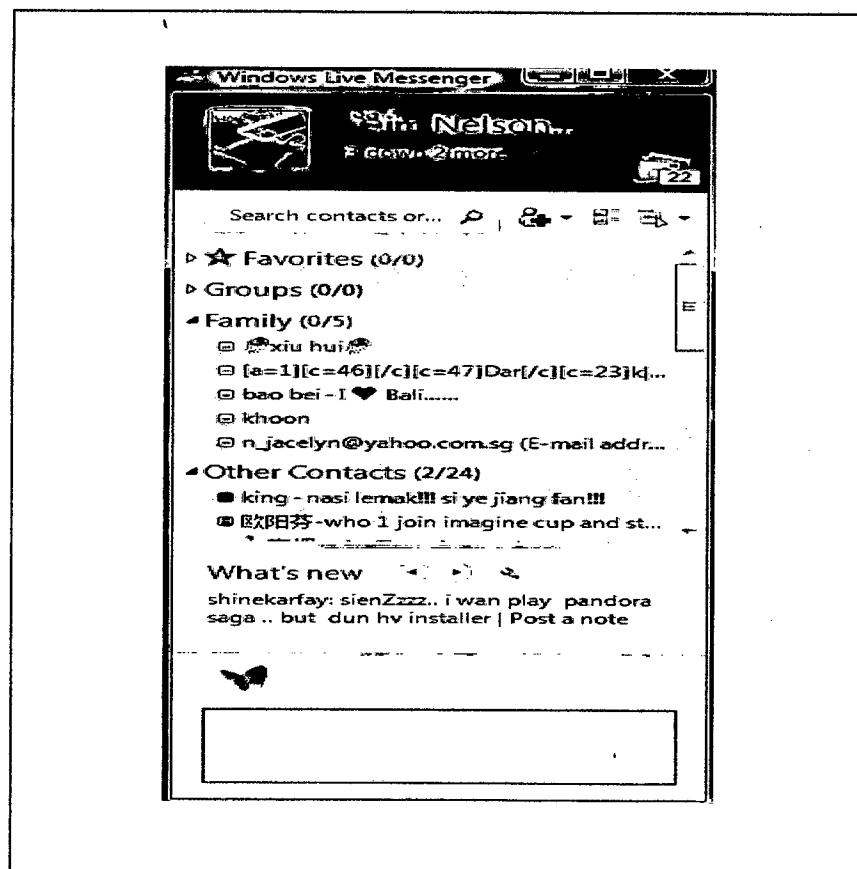


Figure 2.1 Windows Live Messenger

The Figure 2.1 is an example of application for sending message to one another when both user online at the same time. User must declare an email to register a username which is used in the Windows Live Messenger. Password is needed for every user to register a username. Users who connect to internet are able to send text message to one another. Besides, file sharing also available for user to share files. With Microsoft's domination on the personal computer market, the popularity of MSN Messenger should come as no surprise. Further on, the tight integration between Hotmail, .NET Passport and MSN Messenger accounts, serve to consolidate MSN Messenger position in the market.

The features include sharing folder as an alternative to the direct transfer method of file distribution. When a user wants to deliver a file to another person on his or her contact list, the sharing folder window appears which an individualized representation of all previously shared items is. When files are added to the sharing folder for that particular person, the file will automatically be transferred to the corresponding computer when they are online. Instant messaging is simply passing of HTML encoded clear text messages from one user to another, via a central BOS server. The messages always not encrypted and are always routed over the Internet [7]. This means that the folder is literally shared between two computers.

If a user deletes a file, for example, the file will also be deleted from the corresponding computer's shared folder. To minimize risk of virus-infected transfers, the sharing folder feature is bundled with an anti-virus program. The sharing folder feature can only be used on computers with NTFS-formatted hard disks. One can send messages to contacts who are offline. They will receive the messages once they come online. Additionally, a user can start conversations even when his or her status is set to Appear Offline, similar to behaviour in Yahoo! Messenger and ICQ. If talking to someone who has an older MSN Messenger client, they will lose the ability to talk to you after a short period of no activity, due to their client thinking you are offline. The MSN Messenger also serves as a distribution channel for content features:

- i) Make worldwide phone calls.
- ii) Conferencing with multiple contacts at the same time.
- iii) Sending files directly between users.
- iv) Talk instead of type, using a microphone connected to the PC.
- v) Messages by SMS.
- vi) Synchronous work on documents (using NetMeeting Component).
- vii) Video conferencing via NetMeeting.

2.2.2 Skype

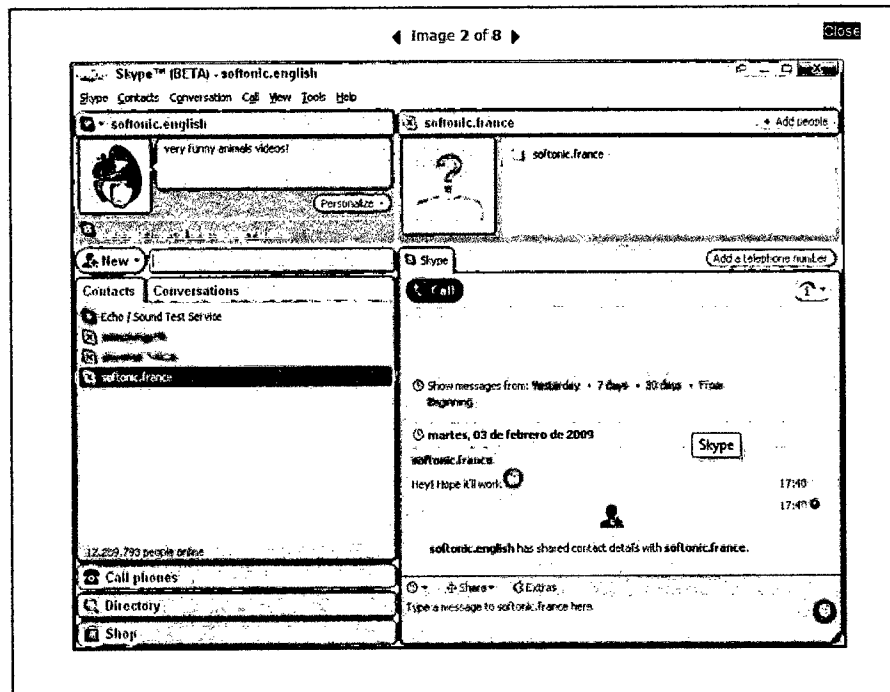


Figure 2.2 Skype

The figure 2.2 is a screen shot capture from Skype application which enables users to send messages through the application. Users must online at the same time in order to send messages to one another. Password required for both parties.

Skype supports group text chat with an interface similar to IRC with 150 People. The Macintosh version used to use the same message view style format as Adium, though with a different filename extension. Message view styles made for Adium could be installed for Skype, and they did not even need to be renamed. There were a couple of cosmetic bugs, but ignoring those, Adium styles worked without modification. This feature is not present in the Windows, Linux, and Pocket PC versions of Skype.

The Skype Web Toolbar recognizes phone and Skype numbers, and is available only for Internet Explorer and Mozilla Firefox on Windows. Such numbers on web pages are replaced with an icon that can be clicked to call the number using Skype, or right-clicked to provide further options, such as adding the number to Skype's contacts list. Skype requests confirmation that an outgoing call should proceed after such a link is clicked. The Skype Web Toolbar is programmed to detect telephone numbers within a web page. The detection algorithm is good, but sometimes it will format non-telephone numbers incorrectly. By using a Meta tag and specific html coding on their site, the web site developer can improve the accuracy and control the Skype Web Toolbar.

Skype currently only supports one-to-one video chat; more than two parties are allowed to talk, but three or more video feature is not supported, neither is making video calls to non-Skype cell phones. Hence, only audio, not video, is available for teleconferencing.

2.2.3 ICQ

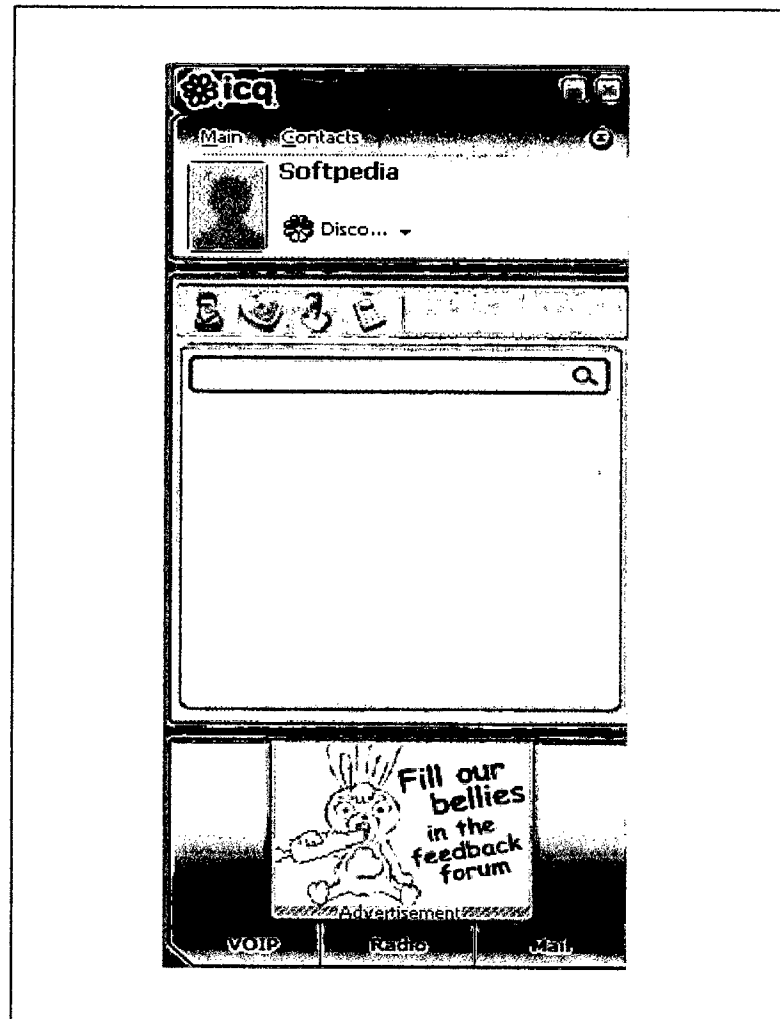


Figure 2.3 ICQ

The Figure 2.3 is a screen shot of the ICQ application which is always a choice for users to communicate with each other. Both users have to online instead to send messages to each other. ICQ features include sending text messages, offline support, multi-user chats, free daily-limited SMS sending, resume able file transfers, greeting cards, multiplayer games and a searchable user directory. Description of ICQ can be pronounced as “I seek you” and was one of the first Instant Messaging Products, perhaps most well known on the market, and is still very popular today. ICQ has good functionality when it comes to presence.

Users are shown as logged on or logged off, and it is possible for each user to set his own presence status, for example “out for lunch”, “busy with a meeting” and etc. From being a way of exchanging short text messages between computers, the service has been extended to include functionality such as file transfer. SMS messages, tele-conferencing and multi user gaming. Below is the features implemented on ICQ:

- i) Organization of contacts in different groups.
- ii) Conferencing with multiple contacts at the same time.
- iii) Sending any size files directly between users.
- iv) Sending longer messages by SMS or email.
- v) Central stored contact list.
- vi) Voice message, ICQ phone talk for free.

2.2.4 Jabber based IM system

Jabber is a freely available set of streaming XML (Extensible Markup Language) protocols and technologies. The development of this project started in the year 1998 by Jeremie Milner. The first application available on Jabber platform is the instant messaging systems, which focus on privacy, security, ease of use and provides standard IM functionality, such as messaging, contact lists management and distribution of presence information.

Jabber is a server based program that runs on a system of distributed servers. Each user's roster and preferences are stored on the server. A user can log on from any client and access user preferences, subscription lists and messages. The Jabber IM system is very different from existing instant messaging services in several significant ways:

- i) Jabber is based on the Extensible Markup Language (XML), the universal format for structured documents and data on the web. This provides an amazing amount of flexibility and scalable.
- ii) Jabber uses a worldwide distributed network, utilizing many interconnected servers. This almost ensures uptime in the network and gives users many options for connecting to the network. For example, if one server is down for any reason, it is a simple matter to move to a new one.
- iii) The Jabber code is open source.
- iv) Jabber has a modular, extensible architecture, allowing the easy creation and integration of new features, especially those that address specific needs. Each new feature is added as a module instead of being added to the core server, so the server maintains its stability while still allowing for new features to be added. (Changes to the server itself are rarely ever needed, but they have been known to happen: One server that we built for a customer was almost unrecognizable as a Jabber server at the time we built it, but some of its features are now quiet common.[9])

Jabber technologies use client-server architecture, not a direct peer to peer architecture as some other messaging systems do. It is almost identical to that of email. Each user has a local server which receives information for them. The various local servers transfer the messages among themselves for delivery to users. In the figure 2.4, the architecture is similar to the email system where each client is connected to a local server and every communication from or to this client passes this server. User accounts and user data, such as contact lists and preferences, are stored on the local server.[9]

User identities are unique for each server by a unique address, like Alice@Jabber.org. Alice cannot only contacts Bob who shares the same Jabber server A, but also exchanges information with other server's user Cindy or friend David different IM systems over the Internet through a component called Etherx, which takes care of translation between different servers or messaging system. A transport is a special server with the sole purpose of bridging from Jabber to other services (ICQ, AIM, MSN, etc). When a user logs on to Jabber, a thread is created in the transport to handle all communications to and from that user. In addition, a separate thread is created in the transport for each service that the user subscribed to.[9]

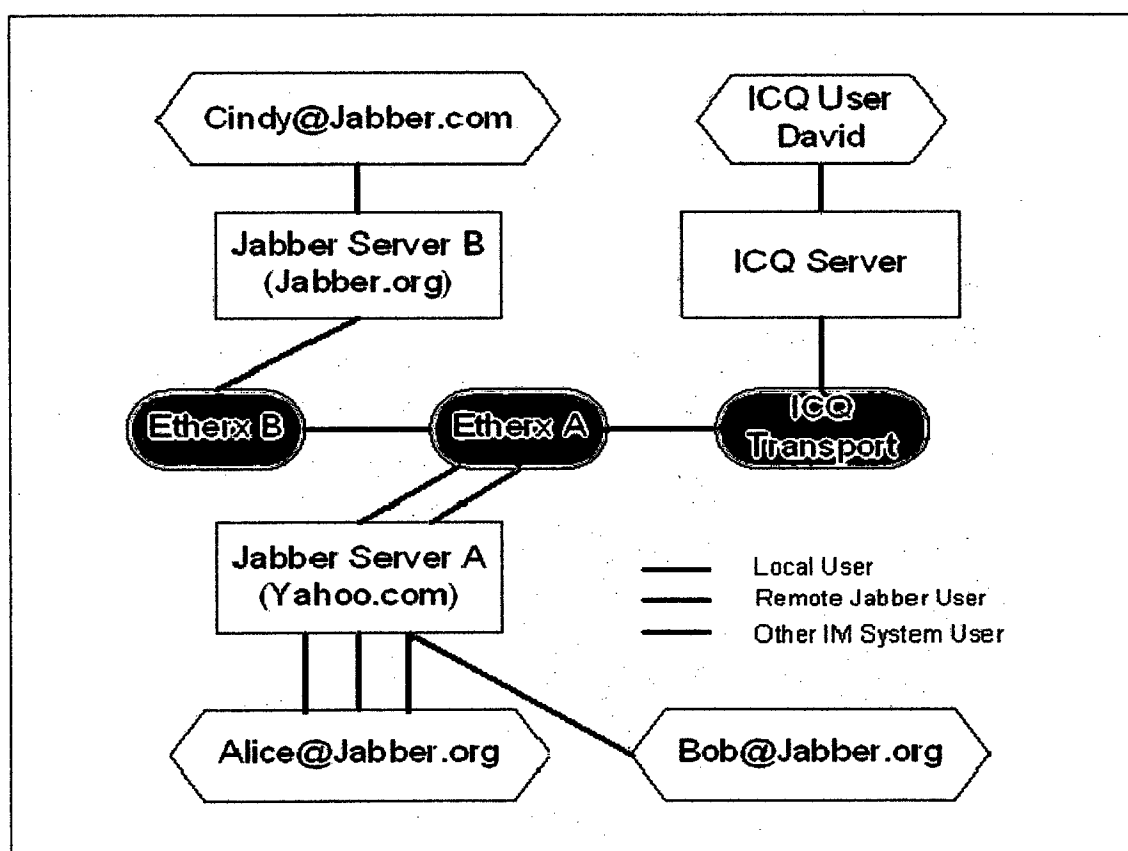


Figure 2.4 Jabber Architecture

Every entity, for instance, a server, a component, a user connected with a client, is identifiable by a Jabber ID. Each Jabber ID contains a set of ordered elements as domain, node, and resource in the following format: user@domain[/resource]. Domain name is the primary identifier. It represents the Jabber server to which the entity connects. The node is the secondary identifier. It represents the “user”. Resource is an optional third identifier. Used to identify specific objects belong to a user. Resources enable a single user to maintain several simultaneous connections.[9]

A Jabber server plays three primary roles:

- i) Handling client connections and communicating directly with Jabber clients.
- ii) Communicating with other Jabber servers.
- iii) Coordinating the various server components associated with the server.

Jabber servers are designed to be modular with specific internal code packages that handle functionality such as registration, authentication, presence, contact lists, offline message storage, and etc. In addition, Jabber servers can be extended with external components, which enable server administrators to supplement the core server with additional services such as gateways to other messaging systems.

All clients will able to:

- i) Communicate to the server through TCP sockets.
- ii) Parse well formed XML.
- iii) Understand the Message data type.
- iv) Express presence (online/offline/unavailable) information to the server and understand incoming presence data.
- v) Understand the Info/Query data type and have some preset queries such as logging in, rosters, searching, and setting user information.[9]