

Software Requirements Specification

(SRS)

For

Quick Share

A faster file sharing application

1.1 13/08/2012



**Department of Computer Science Engineering
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APPROVAL and Compulsory Review LIST		
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Table of Contents

1.0 INTRODUCTION	2
1.1 Scope.....	2
1.2 Technologies to be used.....	2
2.0 GENERAL REQUIREMENTS.....	3
2.1 Functionalities.....	3
2.2 Use Case Model Diagrams	4
2.3 Interfaces.....	5
2.4 General Constraints	6
2.5 Supplementary requirements	6
3.0 Definition, Acronyms, and Abbreviations	7
4.0 References	8



1.0 INTRODUCTION

1.1 Scope

File sharing is old yet promising field in computer networks. Quick Share is a solution to slower file sharing facility in a given geographical area. It would acknowledge the facts like:

- Availability of faster internet service like 3G yet use of wired DSL networks acts as a constraint among users for sharing files instantaneously.
- The core of the software would be FTP based which would help end-users to share any type of file irrespective of its origin.
- Quick Share provides simplest file transfer between users by utilizing available internet facilities in a peer-to-peer fashion.
- Porting the general P2P concept on available smart phones with high Internet speed will help in faster access to files on user's discretion.

1.2 Technologies to be used

- Front-end : Java(J2SE) version 1.7
- IDE: Eclipse Helios IDE 4.2
- Back End: MySQL 5.5.27



2.0 GENERAL REQUIREMENTS

2.1 Functionalities

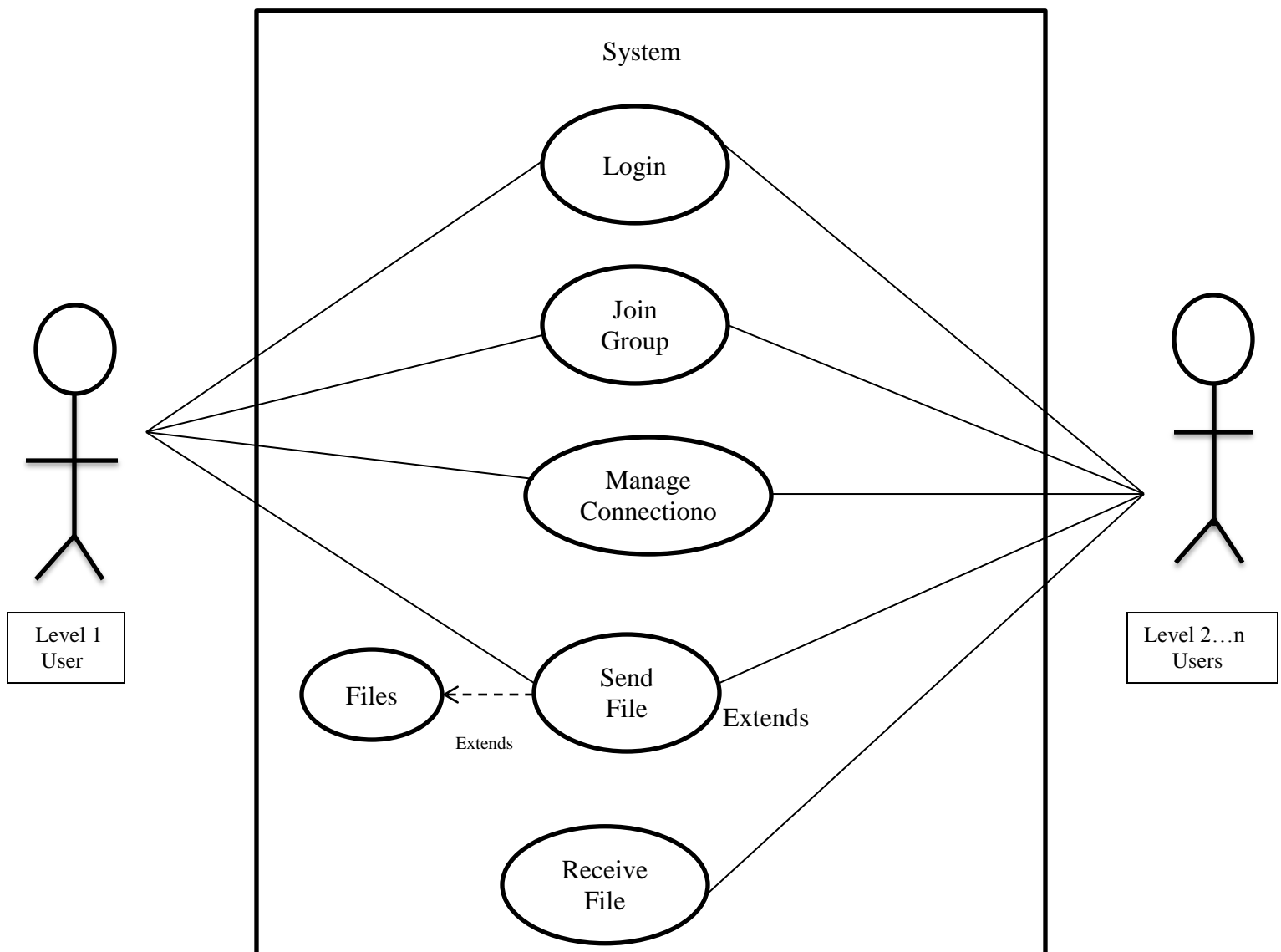
The main idea behind developing Quick Share is to provide faster file sharing between two or more peers in a network over the Internet. The major functionalities would include:

- Firstly the data/files to be shared would be categorized according to their extension and size. Then transferring the files directly.
- Underlying communication protocols would involve TCP for a reliable and pre-established connection. The sharing of files would be done using FTP between the peers in the network.
- Authorizing the peers involved in the network so that integrity of data is maintained.
- Maintaining the hierarchy of peers in a tree form so that congestion in the network can be minimized and better use of available Internet bandwidth can be achieved.
- Keeping the record of transferred files and involved peers from the network in the database.



2.2 Use Case Model Diagrams

The Use Case model Diagram for the software is shown below along with all classes and actors in the system.





2.3 Interfaces

Software:

Front End: The GUI for the Front End will be developed in

- Java 1.7 (J2SE) - Level 1 Peer i.e. Parent node of hierarchy.

Back End: The database used for storing all the files and necessary information will be

- MySQL – A Relational DBMS.

Hardware:

Level 1 peer or Parent Node

Operating System	Processor	Free Disk space	RAM
Windows XP/7 or Higher	Intel Pentium IV 2.27 GHz or High	10 Gigabytes of free Hard disk space	1 GB or more

Level 2 and subsequent peers or Child Node

Operating System	Processor	Free Disk space	RAM
Windows XP/7 or Higher	Intel Pentium IV 2.27 GHz or High	10 Gigabytes of free Hard disk space	1 GB or more

Communication:

The communication between peers in the network would be made by connecting them using high speed Internet facilities like 3G or dedicated Wi-Fi network.

Apart from these other components would include:



- A NIC for all nodes.
- HSPA/WCDMA: 900/2100 MHz for all nodes.
- Wi-Fi (802.11b/g) for all devices in in network.
- 3G Internet connectivity.

2.4 General Constraints

The general constraints for running Quick Share would be:

- JRE 7 on all nodes included in the network.
- Availability of high speed Internet connection so that key features of the software i.e. faster file sharing can be fulfilled.

2.5 Supplementary requirements

The additional requirements for developing the software are mentioned below:

Learning resources

Java Practical Learning resources- From various sources

TCP architecture- From RFC 793 as given at www.ietf.org/rfc/rfc793.txt

FTP architecture- From RFC 959 as given at www.ietf.org/rfc/rfc959.txt



3.0 Definition, Acronyms, and Abbreviations

- JRE (Java Runtime Environment): The Java Runtime Environment (JRE) provides the libraries, the Java Virtual Machine, and other components to run applets and applications written in the Java programming language.
- TCP (Transmission Control Protocol): A widely used protocol in Internetworking for controlling the transfer of files between two or nodes in a network.
- FTP (File Transfer Protocol): The main protocol in Internetworking for transferring files in a network.
- Wi-Fi (Wireless Fidelity): It is a popular technology that allows an electronic device to exchange data wirelessly (using radio waves) over a computer network, including high-speed Internet connections.
- HSPA (High Speed Packet Access): is an amalgamation of two mobile telephony protocols, High Speed Downlink Packet Access (HSDPA) and High Speed Uplink Packet Access (HSUPA), that extends and improves the performance of existing 3rd generation mobile telecommunication networks utilizing the WCDMA protocols.
- WCDMA (Wideband Code Division Multiple Access): s an air interface standard found in 3G mobile telecommunications networks.
- 3G (Third generation Internet): A new version of existing Internet connection with much higher data transmission speed.



4.0References

The references used for creating this document as well as for future development for of the project/software and subsequent documentation are:

- UML Diagrammer- www.pacestar.com/uml/index.html
- Makin Use Case Diagrams- www.andrew.cmu.edu/course/90-754/umlucdfaq.html