CHAPTER 2

REQUIREMENT SPECIFICATION

2.1 Functional Requirements

A functional specification (functional specifications document (FSD), functional requirements specification) in systems engineering and software development is a document that specifies the functions that a system or component must perform. A functional specification is the more technical response to a matching requirements document.

A functional specification does not define the inner workings of the proposed system; it does not include the specification of how the system function will be implemented. Instead, it focuses on what various outside agents (people using the program, computer peripherals, or other computers, for example) might "observe" when interacting with the system.

Functional requirement for GMS includes:

- Staff: for adding members, trainers, for deleting members and trainers, for updating details of member and trainer, for making payments.

2.2 Non-Functional Requirements

In systems engineering and requirements engineering, a non-functional requirement (NFR) is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors.

The GMS software should produce the informative error messages, if any errors are found in the input program. The system must be capable of updating/displaying the record count within an acceptably short interval of the number of records changing.

2.3 Hardware Requirements

The minimum/recommended hardware configuration required for developing the proposed software is given below:

- 4GB RAM
- 2.50GHz Processor
- Hard disk 1TB

2.4 Software Requirements

- Front End
    - Programming Language : java
    - IDE tool : NetBeans 8.2
    - Platform : Java
- Back End
    - MySQLServer 5.7 or any latest version/ MySQL workbench

2.5 Software Tools Used

Gym management system is designed using NetBeans 8.2 as front end user interface design tool and MySQLServer 5.7 at backend for creating tables and storing related information.

2.5.1 Front End Tool

NetBeans IDE is the official IDE for Java 8. With its editors, code analyzers, and converters, you can quickly and smoothly upgrade your applications to use new Java 8 language constructs, such as lambdas, functional operations, and method references. Batch analyzers and converters are provided to search through multiple applications at the same time, matching patterns for conversion to new Java 8 language constructs. With its constantly improving Java Editor, many rich features and an extensive range of tools, templates and samples, NetBeans IDE sets the standard for developing with cutting edge technologies out of the box.

An IDE is much more than a text editor. The NetBeans Editor indents lines, matches words and brackets, and highlights source code syntactically and semantically. It lets you easily refactor code, with a range of handy and powerful tools, while it also provides code templates, coding tips, and code generators. The editor supports many languages from Java, C/C++, XML and HTML, to PHP, Groovy, Javadoc, JavaScript and JSP. Because the editor is extensible, you can plug in support for many other languages. Keeping a clear overview of large applications, with thousands of folders and files, and millions of lines of code, is a daunting task. NetBeans IDE provides different views of your data, from multiple project windows to helpful tools for setting up your applications and managing them efficiently, letting you drill down into your data quickly and easily, while giving you versioning tools via

Subversion, Mercurial, and Git integration out of the box. When new developers join your project, they can understand the structure of your application because your code is well-organized.

2.5.2 Back End Database Used

MySQL, pronounced either "My S-Q-L" or "My Sequel," is an open source relational database management system. It is based on the structure query language (SQL), which is used for adding, removing, and modifying information in the database. Standard SQL commands, such as ADD, DROP, INSERT, and UPDATE can be used with MySQL.

MySQL can be used for a variety of applications, but is most commonly found on Web servers. A website that uses MySQL may include Web pages that access information from a database. These pages are often referred to as "dynamic," meaning the content of each page is generated from a database as the page loads. Websites that use dynamic Web pages are often referred to as database-driven websites.

Many database-driven websites that use MySQL also use a Web scripting language like PHP to access information from the database. MySQL commands can be incorporated into the PHP code, allowing part or all of a Web page to be generated from database information. Because both MySQL and PHP are both open source (meaning they are free to download and use), the PHP/MySQL combination has become a popular choice for database-driven websites.