**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 Shop Inventory and Billing System includes:

* User: for adding and billing Products
* Customer: for buying Products.

**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 Shop Inventory and Billing System 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
* 1.2GHz Processor
* Windows 7/8/10

**2.4 Software Requirements**

* Front End
  + NetBeans IDE 8.2
  + Microsoft .NET Framework latest version
  + MySQL for NetBeans
  + MySQL connector for NetBeans
* Back End
  + MySQL workbench 8.0 CE

**2.5 Software Tools Used**

Shop Inventory and Billing System is designed using NetBeans as frontend user interface design tool and MySQL workbench 8.0 CE at backend for creating tables and storing related information.

**2.5.1 Front End Tool**

NetBeans is an open-source integrated development environment (IDE) for developing with Java, PHP, C++, and other programming languages. NetBeans is also referred to as a platform of modular components used for developing Java desktop applications. NetBeans manages the platform features and components such as User Setting, Windows(placement ,appearance etc..), NetBeans visual library, Storage, Integrated development tools, Framework wizard. NetBeans uses components, also known as modules, to enable software development. NetBeans dynamically installs modules and allows users to download updated features and digitally authenticated upgrades. NetBeans IDE modules include NetBeans Profiler, a Graphical User Interface (GUI) design tool, and NetBeans JavaScript Editor. NetBeans framework reusability simplifies Java Swing desktop application development, which provides platform extension capabilities to third-party developers.

**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.