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# Software Requirements Specification

for

## Book-shop Automation Software

Version 1.0

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04th April 2023

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## Revision History

Name	Date	Reason For Changes	Version

# 1. Introduction

## 1.1 Purpose

The Bookshop Automation Software (BAS) is to automate all operations in a bookshop. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system.

## 1.2 Document Conventions and Definitions

The standard SRS documentation standards of IEEE were used for this document. In the writing of this SRS for

- Heading
  - Font: Times
  - Font size: 14
  - Bold letters
- Body
  - Font: Times
  - Font size: 12

Abbreviation	Term
1. SRS	Software Requirement Specification
2. HTML	Hypertext Markup Language
3. UI	User Interface
4. HTTP	Hypertext Transfer Protocol
5. TCP	Transmission Control Protocol

## 1.3 Intended Audience and Reading Suggestions

SRS is mainly intended for the project managers, developers and team members who want to get the overview of the project, its scope and higher details of modules in the system. This SRS document includes the overall design description. The reader should read thoroughly from the first page to the last page. It includes the purpose, scope, product feature and references along with the

hardware & software requirements for this software.

## **1.4 Product Scope**

The scope of this project Book-Shop Automation Software is to develop a software to automate the entire book purchasing process and the management and maintenance of records like transaction records, calculating the demand of various books, generating sales statistics and other basic tasks that are required by the manager. Generally it includes Order Processing, Stock Management and Accounts Management. Also BAS will provide the ability to search any book using the book title or the name of the author that are available in the shop and in case where the book is not available in the stock, it will ask the customer to enter full details of the book for procurement of the book in future and increment a request field for the book. This software will be very useful to the large book-shops as well as the customers. The system will save lots of time as it will perform all the necessary tasks for purchasing books and maintaining the records in much less time. As a result both the customer and the shop owner will be benefited. Therefore, this software will be very economical in every respect.

## **1.5 References**

- Fundamental of Software Engineering By Rajib Mall
- IEEE Software Engineering Standards Committee “IEEE Recommended Practice For Software Requirements Specifications”
- Data Flow Diagram & UML Diagrams: Online Data Flow Diagram & UML Diagram Maker (<https://app.diagrams.net/>)

# **2. Overall Description**

## **2.1 Product Perspective**

The Book Shop Automation System is the new, self-contained product which will be produced by the project team to overcome the problems that have occurred due to the current manual system. The newly introduced system will provide easy access to the system, and it will contain user friendly functions with attractive interfaces.

Since the application must run on the PC, the main hardware interfaces for this system would be the monitor, Keyboard and mouse.

Book-shop Automation Systems is a technology that automates the book-shop. This technology has more advantages over manual work.

## **2.2 Product Functions**

The book-shop automation system provides the following facilities and services:

1. Searching of books by title or by name of author
2. See number of available books and location in the rack (for selected books)
3. Generating procurement form for future purchase of book (for books not currently been sold by the book shop)
4. Each sold book is registered in database with date of sale and notification if customer has paid
5. Book-shop automation System software provides full billing and supports different password protected employee accounts
6. Generate sales statistics for any period
7. Improve store business with various reports and statistics
8. Managing records
9. Estimate current demand of different books that can be used by the manager

## **2.3 User Classes and Characteristics**

There are five types of users that interact with the system: customer, sales clerk, employee, manager and the book shop owner. Each of these five types of users has different use of the system so each of them has their own requirements.

- Customers will only use the system to find a book. This means that the user should get the exact number of copies available and the rack number in which the book is located.
- Sales clerk would help with the sales processes.
- Employees would update the stock.
- Manager would check the current demands of different books. So all the search queries by the customers and the sales records are to be maintained properly.
- The book shop owner manages the overall system.

## **2.4 Operating Environment**

The proposed software is intended to run on a client/server model network. The server manages the database among the number of clients, while the client send, request, and analyze the data entry form with small specific data set, such as rows in a table not file as in the file server system.

- Hardware Requirement
  - 20 GB HDD Free Space
  - 126 MB RAM
  - Pentium IV or above Processor
  - Monitor with 640 x 480 resolution or higher
  - Keyboard: Standard
  - Mouse: Optional
- Software Requirement

MS-office-2007 or above  
Flask, HTML, CSS, JavaScript, Python, JSON.  
Operating system: Windows 7 or later

## **2.5 Design and Implementation Constraints**

- The system is based on menu driven interfaces. Menu selection will be done by using the mouse and the key board keys.
- Confirmation messages on taken actions, input acceptance and error conditions will be displayed after each input.
- Error messages will be displayed at the time of detection of input errors and the system errors.

## **2.6 Assumptions and Dependencies**

While cost estimation of the proposed system it has been assumed that the cost of hardware and that of license of Operating System and back end will be met by client (the organization). Hence only the cost incurred for the proposed software is included therein.

The followings are identified as some of the potential risk factors or dependencies:

- Non-availability of required resources
- Power cuts
- Slippage of schedule due to unpredictable holidays, etc.

# **3. External Interface Requirements**

## **3.1 User Interfaces**

User interface is used to provide communication between users and the system. When users look at the interface, they should understand which pane is used for which purpose. Each task of an interface should be specified clearly and users should use them correctly. The interface actions and elements should be consistent. When users press any button, required actions should be done by the system. The screen layout and color of the user interface should be appealing. It has been required that every form's interface should be user friendly and simple to use.

The Book-shop Automation Software should have a user-friendly interface that allows customers to query the availability of books, employees to manage inventory and shop owner to check sales statistics.

1. Home Page
2. Search Page

3. Book detail page
4. Procurement page
5. Sales statistics page
6. Generate bill page
7. View requests page
8. Print below threshold page
9. Employee Login:

The employee login page should allow authorized personnel to access the inventory management and sales statistics features of the software. The page should include the following options:

- Username and password fields
- Option to log in as an administrator or sales clerk

### **3.2 Hardware Interfaces**

The hardware interface for the user would be any PC having a configuration of P-IV and above 2GB HDD for loading any OS so that BAS could interact with the system without any problem. The main interface would be monitor, keyboard and mouse.

- Computer: To control the backend services and handle the workflows of the whole system.
- Hard Drive: To store various important digital documents in it for future references.
- Printer: To print various bills and notes for the users using our services. Print the book names that are below the threshold for the Owner of the system.

### **3.3 Software Interfaces**

Book Shop Automation Software will use database for storing and management of records. So an access to the database management system is required. When such an event occurs the system establishes connection to the database management system, once the connection is created; the client program can communicate with the database management system.

### **3.4 Communications Interfaces**

For communications sockets on TCP shall be used. A client program creates a socket on its end of the communication and attempts to connect that socket to a server. When the connection is made, the server creates a socket object on its end of the communication. The client and server can now communicate by writing to and reading from the socket.

There shall be communication between Manager and Publishers through an email notification to ensure proper handling to the demands of the Users. These activities need a stable internet to be carried out smoothly. Hence a better internet connection and network is required.

The system (web application) shall be using HTTPS for communication over the internet to provide various necessary services to the customer.

### **3.5 Access Interfaces**

All the users of the system should have a username / password logging mechanism to access it. Although signing in of the customer is optional. Depending on the role of the user, he / she should get the corresponding system access level and services.

## **4. System Features**

### **4.1 Book Search:**

#### **4.1.1 Description**

The users can query the availability of a book either by using the book title or by using the name of the author.

On availability, the exact number of copies available and the rack number in which the book is located will be displayed. Else, displays “Book Not Available!!!”.

#### **4.1.2 Stimulus/Response Sequences**

1. Users input the book title or name of the author to search for a particular book. Based on the Availability , the system displays the books available,their location and no.of copies available for purchase.
2. Display Records:  
This feature helps display the details of the book like ISBN code, title, rack number, author name and the number of copies left based on the availability of the books. If a book is out of stock then we have an increment request feature.
3. Procurement form:  
This feature helps customers to request for a book which is not currently sold by the shop. Customer has to fill all the details of the book for procuring the book.

#### **4.1.3 Functional Requirements**

- REQ-1: Display Records.
- REQ-2: Book Request(Procurement form).

### **4.2 Purchase Book:**

#### **4.1.1 Description**

The sales clerk can enter the ISBN number of the book to sell it to the customer and update the inventory automatically. Also to generate the bill receipt for the books sold.



#### 4.1.2 Stimulus/Response Sequences

1. Sales clerk enters the ISBN number of the book to sell to the customer. System displays the books and prices.

2. Print bill:

This feature helps the sales clerk to print the receipt to give to the customer on checkout of the books. After the bill is printed, The inventory is updated automatically by the system.

#### 4.1.3 Functional Requirements

REQ-1: Print bill.

### 4.3 Update inventory(new supply):

#### 4.1.1 Description and Priority

This feature enables the employee to update the inventory when a new book supply arrives to the shop.

#### 4.1.2 Stimulus/Response Sequences

1. The employee enters the book details such as name,author,isbn,location and no.of copies available. With this information, the system updates the inventory accordingly.
2. If new books are there, New object is created.
3. Else it increments the no.of copies available accordingly.

### 4.4 Sales Statistics:

#### 4.1.1 Description and Priority

This feature enables the owner to generate the sales statistics of the shop.

#### 4.1.2 Stimulus/Response Sequences

1. The owner can enter any of the details such as Book name,ISBN,author name etc. to get sales statistics based on that tag.
2. System generates statistics for a defined time period or from the beginning.
3. Sales statistics presents the owner with data about no.of books sold,revenue earned through books over the requested time period.

### 4.5 View book requests:

#### 4.1.1 Description and Priority

This feature enables the manager to view the request filled out by the customers for new books as well as increment requests.

#### 4.1.2 Stimulus/Response Sequences

1. The manager upon clicking this option can see the request of the customers for new books which are not currently sold by the shop. Also can see the increment request by customers for the books which are currently out of stock.
2. This helps the manager to arrive at a rough estimate for the requirement of new stock of books.

## **4.6 Print below threshold books:**

### **4.1.1 Description and Priority**

This feature allows the owner to print the receipt for the books that have fallen below threshold in the past two weeks.

### **4.1.2 Stimulus/Response Sequences**

1. Upon clicking this feature, The system prints a receipt containing the information about the various books which have fallen below threshold in the past two weeks and no.of copies required to replenish the stock.
2. This receipt also should contain the full address of the book publisher. The books that have fallen below threshold are determined by the system.
3. It is determined by calculating the sales of the book in the past two weeks multiplied by average no.of days it takes to procure books from the publisher.

## **5. Other Nonfunctional Requirements**

### **5.1 Performance Requirements**

- The response time for menu/option changes will be not more than 5 seconds.
- The time for searching for a book will not be more than 5 seconds.
- The time to print the stock valuation will not be more than 5 seconds.
- The time taken to update the database or get information from the database will not be more than 5 seconds.
- The time taken to prompt message boxes will not be more than 5 seconds.

### **5.2 Safety Requirements**

All the higher level users should keep their system access credentials secure else an unauthorized person may exploit the system. If at any point of time someone has compromised his/her login credentials then he/she should report to the system administrator so that he could issue new credentials.

All exceptions have to be properly handled so that the application doesn't crash under any circumstances and no data is lost. Because the software requirements necessitate the

operation of a cron job that operates on data generated during a day, crashes can potentially lead to a great loss of information to the owner. Safeguards/Check-points must be put in place so that this never happens.

### **5.3 Security Requirements**

Only the administrators have the authority to edit details in Users and Items tables. No one can enter the system without a username and a password. Normal system users cannot access the Administrators login. All deleting actions are notified by a dialogue box asking to confirm deletion.

### **5.4 Software Quality Attributes**

The prioritization of the software quality attributes are assumed as under:

- Accurate and hence reliable
- Secured
- High performance
- Compatibility

### **5.5 Business Rules**

**Customer:** The one who purchases books from the bookshop. He must have very limited access to the system.

**Sales Clerk:** The one who enters purchase details in the bookshop. He must have the next higher level of access to the system after the customer.

**Employee:** The one who updates the inventory. He must have the next higher level of access to the system after the clerk.

**Manager:** The person who views the current demand of different books. He must have the next higher level of access to the system after the employee.

**Book Shop Owner:** The owner of the shop. He must have access to the entire system.