

Practical Record

**On**

Software Engineering Laboratory (19PC2CB03)

**Submitted to**

V N R V i g n a n a J y o t h i I n s t i t u t e o f E n g i n e e r i n g & T e c h n o l o g y

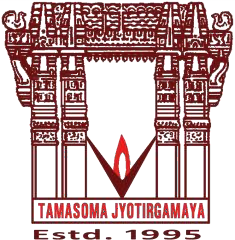
A n a u t o n o m o u s I n s t i t u t e – N A A C ‘ A + + ’

a n d N B A A c c r e d i t e d

## Bachelor of Technology In

## Computer Science Engineering

(B.Tech II Year IV Sem)



***Submitted By***

***Team Name:VSTAR***

VNR Vignana Jyothi Institute of Engineering & Technology Bachupally, Nizampet (S.O), Hyderabad–90



## VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

#### Bachupally(v), Hyderabad, Telangana, India.



***NAME:***

***DEPARTMENT OF:***

***ROLL NO*:**

***LABORATORY*:**

### *CLASS:*



VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

#### Bachupally(v), Hyderabad, Telangana, India



***CERTIFICATE***

Certified that this is the bonafide record of the practical work done during

the academic year…………………………………………………………………………..by the student

Name………………………………………………………………………………………………………………………………….

Hall Ticket No: …………………………… Class………………………………………………………………………….

In the Laboratory: ……………………………………………………………….……………………………………………

Department of …………………………………………………………………………………………

Signature of the HoD Signature of the Staff Member

Date of Exam……………………….

Signature of the Examiners

Internal examiner External Examiner



**Software Requirements Specifications (SRS):**

**Definition:**

A software requirements specification (SRS) is a document that describes what the software will do and how it will be expected to perform. It also describes the functionality the product needs to fulfil all stakeholders (business, users) needs.

**Purpose:**

The purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It lays out the functional and non-functional requirements of a system that is used for describing the user interactions.

**Template of SRS:**

##### Table of contents i

1. **Introduction** Error! Bookmark not defined.
   1. Purpose **Error! Bookmark not defined.**
   2. Document Conventions **Error! Bookmark not defined.**
   3. Intended Audience and Reading Suggestions **Error! Bookmark not defined.**
   4. Product Scope **Error! Bookmark not defined.**
   5. References **Error! Bookmark not defined.**
2. **Overall Description** Error! Bookmark not defined.
   1. Product Perspective **Error! Bookmark not defined.**
   2. Product Functions **Error! Bookmark not defined.**
   3. User Classes and Characteristics **Error! Bookmark not defined.**
   4. Operating Environment **Error! Bookmark not defined.**
   5. Design and Implementation Constraints **Error! Bookmark not defined.**
   6. User Documentation **Error! Bookmark not defined.**
   7. Assumptions and Dependencies **Error! Bookmark not defined.**
3. **External Interface Requirements** Error! Bookmark not defined.
   1. User Interfaces **Error! Bookmark not defined.**
   2. Hardware Interfaces **Error! Bookmark not defined.**
   3. Software Interfaces **Error! Bookmark not defined.**
   4. Communications Interfaces **Error! Bookmark not defined.**
4. **System Features** Error! Bookmark not defined.
   1. System Features one by one **Error! Bookmark not defined.**

##### Other Nonfunctional Requirements 5

* 1. Performance Requirements 5
  2. Security Requirements **Error! Bookmark not defined.**
  3. Safety Requirements **Error! Bookmark not defined.**
  4. Software Quality Attributes **Error! Bookmark not defined.**
  5. Business Rules **Error! Bookmark not defined.**

##### Other Requirements 6



**SRS for E-BOOK MANAGEMENT:**

**1.Introduction**

E-book management system is an online interface between customers (those who wants to buy books) and sellers (Publishing house or Authors). It’s a well organised online platform for buying and selling of books. It aims at improving the efficiency in buying and selling of books and reduces the complexities involved in it to the maximum extent possible. It contains the database of books and users.

**1.1 Purpose**

Considering the time required by a person to search for a book or considering the time required for a person to wait in order to get a book which was already taken by another person or considering difficulties faced by people in issuing books like in library or difficulties faced by people when this kind of process done manually and considering the fact that number of people whose interests towards books growing significantly, it is required to develop a automated system or process in order to meet the demand and to make the process simple and efficient. Therefore, this system provides an online interface to the user where they can fill personal details and, can follow the process as how the automated system works.

This document is intended for following group of people:

* Developers for the purpose of maintenance and new releases of the software
* Documentation writers
* Testers
* Users to know the more details and features of the project.

**1.2 Scope**

The system provides simple interface to both users and administrators. The system takes login ID and password as input from the user for login. The system is developed with features such as searching a book, adding book to the user’s cart, buying a book etc. The simple and easy to use interface attracts people from all age-groups ranging from children to adults.

**1.3 Definitions, Acronyms and Abbreviations**

* **HTML:** It is a Hypertext Markup Language used to create client-side static webpage
* **CSS:** Cascading Style Sheets, It is used for Managing Formatting layout of html web pages



* **HTTP:** Hypertext Transfer Protocol – It is a Service protocol
* **React:** JavaScript library for building User Interface
* **Node.js:**
* **MongoDB:**
* **Firebase:**

**1.4 References**

W3 schools

Vidyarthi plus

**1.5 Overview**

Section 1.0 discusses the purpose and scope of the software.

Section 2.0 describes the overall functionalities and constraints of the software and user characteristics.

Section 3.0 and 4.0 details all the requirements needed to design the software.

**2. Overall Description**

**2.1 Product Perspective**

E-book management system is an automated process provided with many features. The user requires a network connection to his mobile or desktop to avail these features. The system includes features such as buying a book, searching a book etc. The user can buy or rent a book with ease using this software. It also contains different payment methods like UPI, debit card, credit card.

**2.2 Product functions**

* **Login and Signup:** Users are required to create their accounts with their Gmail accounts. Already registered users can login into the website through their valid credentials, then users can use the website.



* **Add books to cart:** This website contains a lot of books – Customer can buy bunch of books by checking out its total price by adding it to the cart. Customers can able to add as many books as he wants to the cart(bag).
* **Add Wishlist:** If the customer desired book is out-of-stock then he can add it to the Wishlist, so that he will get a notification when the book arrives. Customer can also add his liked books to the Wishlist if he wants to buy it for later. We will also pop up a notification if there is a price-drop of products in Wishlist.
* **Checkout and Billing System:** Customer Can able to see the overall price of products that are in the cart, and he will be able to buy that books.
* **Search for a book:** As there are lots of books in website – it is difficult to go through all the books, so we provided a Search Bar where user can search for a book based on tags like Author Name, Publication Name etc.
* **Subscription:** Customer can buy a premium so that he will get discounts on various books.
* **Add new books to the database:** Admin can add newly arrived books.

**2.3 User Characteristics**

There are two kinds of people that will be interacting with Software-

1. ***User (Customer):*** User can able to go through all content in the website, and he can able to add books to the Wishlist or to cart and he will buy the books in form of paper-back edition or e-book edition.
2. ***Admin:*** Admin can have access of overall website and backend application. He can also add newly arrived books to the website.

**2.4 Constraints**

* As there are lots of books outside. We are unable to keep all the books as we didn’t combine our website with large cloud storage like AWS or Google Cloud. So, the database needs to be scaled.
* This project didn’t integrate with APIs, it is not a Business-to-Business website where we have to maintain relationship with publishers, some delivery Services like E-cart express.



* Customer can only view the overall price of books in cart, but he can’t buy the product because the UPI payment is not integrated.
* Customer will not be able to buy the paperback-edition book, as we didn’t have delivery service.

* As this website is newly arrived, there may be security issues (may be easily hacked) so we request all users to make their passwords to be strong and unique.

We the team are working on above listed features - it may take time to get all the

above features done.

**2.5 Assumptions and Dependencies**

* Our price pleases the customer over other websites.
* We didn't talk with authors or delivery services who would like to partner with us. We are assuming that once the product is done, we will find potential partners.
* At this stage, no quantitative measures are imposed on the software in terms of speed and memory although it is implied that all functions will be optimized with respect to speed and memory. (No cookies yet)
* It is furthermore assumed that the scope of the package will increase considerably in the future.

**3. External Interface Requirements.**

**3.1. User Interface Requirements.**

1. After opening this website, we see a screen displaying different types of books.

2. The user (buyer) can select any book he wishes and can buy (or) download it only if he’s logged in.

Firstly, the user needs to sign-up by giving the details like email-address, name, age, address and all. Then he needs to login.

A successful login attempts leads to a screen displaying the payment options.

3. In case of admin(seller) also, only a successful login can lead to a page where he can give the details his selling book.



4. If the user likes a book and want to buy it later, He can add it to the cart(cart symbol is displayed which keeps the record of the books the user wanted).

Other various user interface requirements that need to be fulfilled are as follows :

The display screen shall have 256 color resolution. The system should be connected to the Internet.

**3.1.2. Hardware Interface Requirements**

|  |  |  |
| --- | --- | --- |
|  | **Internet Explorer 8** | **Firefox** |
| Min **RAM** | 64 MB(XP) |  |
| Recommended **RAM** | 512 MB | 512 MB |
| Min Disk Space | 150 MB (XP), 70 (Vista) |  |
| Rec. Disk Space | 70 Mb | 200 MB |

**3.1.3. Software Interface Requirements**

The database required is Mongo Db.

And we need a web browser.

**3.1.4. Communication Interface Requirements**

The website needs to communicate with the warehouse for each session for various functions such as login verification, account access, etc. so the following are the various communication interface requirements that are needed to be fulfilled in-order to run the software successfully:

The communication protocol can be TCP/IP protocol.

Protocol used for data transmission can be HYPER TEXT TRANSFER PROTOCOL SECURE (HTTP).



## **4. System Features**

### 

### 4.1. Functional Requirements

**4.1.1. User Authentication**

User authentication is a process that allows a device to verify the identity of someone who connects to a network resource. Firstly, the user is provided with a login screen where he is required to enter his login ID and password/pin. The neutered information is processed by the machine. If entered information is right, the user is allowed to enter into the system else the login screen appears again, allowing the user to re-enter the details.

Functional Requirements :

* User ID must be provided to the user earlier when he registers.
* The system must allow users with valid ID and password to enter the system.
* The system performs authorization process which decides what user level can access to.
* The user has a choice to logout of the system whenever he wants to.

**4.1.2. Search, Explore and Preview.**

The user can perform these tasks after he is logged in to the system. This feature allows the user to search for a book based on book ID, book name, Publication/Author name. The user is provided with a search bar where he enters information about the required book. If the info entered matches with any book details in store, all the books and their details are displayed allowing the user to explore and preview any book.

Functional Requirements :

* The system must be able to search for the books in the database.
* The system must be able to filter the books based on the information provided.
* The system must be able to display all the books that are matched with the information provided and, also it should allow the user to preview.
* The system must be able to display the best-sellers and new arrivals, suggesting the user to have a look at them (the books are filtered earlier).



**4.1.3. Add to cart, Wishlist and Billing Interface.**

After displaying all the books which matches with the information entered by the user, the user is free to select the required books. The user can either add the book to wish list or add the book to cart. If the book is added to wish list (generally done when the book is out-of-stock), the book is put aside allowing the user to preview the details of the book whenever he wants to (even without searching for the book). Also, the system sends a notification to the user’s mail/provided details whenever the books in wish list are back in stock. Or if the book is added to cart, the user has an option to either buy the softcopy or hardcopy of the book, billing is done based on his choice.

Functional Requirements:

* The system must be able to add a book and display all the books in wish list whenever required.
* The system must perform adding to cart or the wish list, only after the user is logged in to the system.
* The system must be able to send a notification to the user’s mail when the books in wish list are back in stock or whenever there is a price-drop of the products in wish list.

**4.1.4 Register Books**

Admin can login to the system using his ID and password. This feature allows the admin to add new books to the store.

Functional Requirements:

* The system must be able to verify the details of the book. If the details are not true then the book must be rejected.
* The system must be able to enter the number of copies into tables and, also update them.
* The system must not allow two different books with the same book ID.

**4.1.5. Register User**

This feature creates an account for the user. The user enters a unique ID which is not earlier used by any other user. Also, the user enters a password which is stored by the system in the database. The user must remember his login credentials in-order to get into the system the next time. User can enter the system without logging in but he cannot buy the books unless and until he is logged in.



Functional Requirements:

* The system must verify the ID entered by the user. If the ID entered is unique, the account will be created, else the user must enter another ID.
* The system must be able to delete the information if it is wrong.

##### Sequencing Information

The information about the users and their account should be entered into the database prior to any of the transactions and the backup be maintained for all account information.

**Error Handling/ Response to Abnormal Situations**

If any of the above validation/sequencing flow does not hold true, appropriate error messages will be prompted to the user for doing the needful.

##### Other Non-functional Requirements

* 1. **Performance Requirements**

The following list provides a brief summary of the performance requirements for the software:

* + 1. **Capacity**

The server should be up and running at all times and will support approx.. 75 transactions at a given period with a sever load of approx. 60.

* + 1. **Dynamic requirements**

The login time must not exceed 0.3 sec. under normal server workload and 0.5 sec. under peak server workload. Books display time must not exceed 3 sec. under normal server workload and 5 sec. under peak server workload. Payment time must not exceed 4 sec. under normal server workload and 5 sec. under peak server workload.



* + 1. **Quality –**

The primary objective is to produce quality software. As the quality of a piece of software is difficult to measure quantitatively, the following guidelines will be used when judging the quality of the software:

1. Consistency – All code will be consistent with respect to the style. (This is implied when adhering to the standard).

2.Test cases – All functionality will be thoroughly tested.

* 1. **Software System Attributes**
     1. **Reliability**
* Checking the website on a regular interval basis will be done to detect eventual anomalies (network breakdowns, broken databases)
* Performance reports on response time, down/up time will be gathered. The website will be able to effectively handle lots of faulty data coming either purposefully or accidently entered.
  + 1. **Availability**

 Failure of one component does not immediately bring down the entire website.

 Techniques like connecting servers (server clustering) will be used to have an accurate backup in all situations.

 A Load balancer, which distributes the traffic in peak situations across the different servers will be used.



* + 1. **Security**

 Information for the users should not be accessible to an unauthorized person. It should not be intercepted during the transmission.

 Cryptographic techniques such as digital signatures and security certificates will be used.

 The website will use a Secure Socket Layer (SSL) protocol. ("https://" is to be used for HTTP urls with SSL)

* Secure Electronic Transaction protocol developed will be used to ensure the security of payments.
  + 1. **Maintainability**

 The code of the website should be clean will be adhered to standards.

 There will be a minimal use of plugins and third-party tools to avoid deprecation and other problems.

 The project will be well documented explaining all the conventions used and the development will be done using a version control system.