Table of Contents

Software Requirements Specifications (SRS)
for Big State University Online Bookstore

1. Introduction

1.1. Purpose

The purpose of this Software Requirements Specifications (SRS) is to fully document the specifications and requirements for the <u>BSU Online Bookstore</u>. The audience of this SRS will be the clients who want the software to be built and the technical professionals developing the software.

1.2. Scope

The objective of this project is to create and implement a website for the BSU bookstore. The website will be used primarily by BSU students. The website will allow users to create and maintain individual secured accounts, search the BSU Bookstore database for textbooks, and make secured online credit card purchases. Users will also be able to contact site administrators. The website makes purchasing textbooks quicker, easier, and more convenient.

1.3. Definitions, Acronyms, and Abbreviations

This document uses the following definitions, acronyms, and abbreviations:

BSU	Big State University
BSU Online Bookstore	The name of the website
VeriSign	A Company used by BSU Online Bookstore to provide secure credit card transactions

1.4. References

The following material was used in creating this document:

- IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications.

1.5. Overview

The rest of the SRS is organized as follows:

- Section 2 is an overall description of the project.
- Section 3 cites the specific requirements

2. Overall Description

2.1. Product Perspective

This product is an entirely new product. It is not a component of a larger system.

2.2. Product Functions

The following list of function descriptions explains the major features of the BSU Online Bookstore.

2.2.1. Account Registration

The registration function shall allow users to create secure accounts. To set up an account the users should provide their name, mailing address, billing address, credit card type (Visa, MasterCard, Discover, American Express), credit card number, expiration date, username, and password.

Rationale: This offers security by allowing users to create a secured account with username and password. This also offers convenience so the user only has to enter the information listed above once and then it is stored in the account.

2.2.2. Account Login

The account login function shall allow account members to enter their username and password. Once the username and password are verified, users will be able to access account history, purchase books online, and update their account information.

Rationale: This provides security to the account member by setting up an account that is password protected.

2.2.3. Search

The search function shall offer users the ability to search for books by title, author, subject, course number, professor, or ISBN number. Once the book is located in the database, a picture of the front cover will display along with title, author, price, availability, and condition of book.

Rationale: This offers easy access to find a book if you do not know the title and gives purchasing information.

2.2.4. Add to Shopping Cart

The add to shopping cart function shall allow users to temporarily save books in a placeholder that are being considered for purchase

until finished shopping. This function utilizes the balance calculator function to display total price of the books in the cart. A page should display with the items in the shopping cart along with the total amount.

Rationale: This offers convenience to the user by storing the books of interest away and allowing continuation of shopping.

2.2.5. Balance Calculator

The balance calculator function shall calculate the total balance of the books in the shopping cart and make give that information to the checkout function. A page should display with the items in the shopping cart along with the total.

Rationale: This enables users to know how much they are spending at any point in their shopping process.

2.2.6. Delete from Shopping Cart

The delete from shopping cart function shall remove any unwanted books from the cart.

Rationale: This allows users to change their orders easily and not be forced to purchase books that are no longer of interest.

2.2.7. Reserve

The reserve function shall hold books for up to 7 days that will be purchased and picked up at the bookstore.

Rationale: This offers convenience to the user by allowing them to make sure a book will be in stock and can be picked up within 7 days. This also offers convenience for those who do not own a credit card or are weary of giving credit card information over the Internet.

2.2.8. Checkout

The checkout function shall allow account members to purchase books online securely. After the books have been purchased with the credit card on file, a confirmation number will appear to confirm the transaction is completed.

Rationale: This offers easy purchasing and added assurance with the confirmation number.

2.2.9. Contact Us

The contact us function shall quickly give users the store address, store telephone number, store email address, and directions on how to get to the store. A page should display with text of the information listed above along with graphics for the map.

Rationale: This helps the user gain trust in the bookstore by showing how easy it is to have person-to-person contact with a BSU Bookstore employee.

2.2.10. Update Account Information

The update account information function shall give account members access to edit their information. They can modify name, mailing address, billing address, credit card type (Visa, MasterCard, Discover, American Express), credit card number, expiration date, and password.

Rationale: This offers convenience to the account members by allowing changes to account information immediately.

2.2.11. View Shipping Status

The view shipping status function shall allow account members to enter their confirmation number for a purchase and then view the status of shipment. The information that is required is shipping date, mailing address, and projected delivery date (cannot be the same day).

Rationale: This offers convenience to account members so they can find out when they should expect shipment.

2.2.12. View Account Purchase History

The view account purchase history function shall allow account members to see previous purchases made under their username. The information that is required is date of purchase, credit card type, credit card number, expiration date, title of books, prices of books, and total amount of purchase.

Rationale: This offers convenience to account members by allowing them to easily view purchase history.

2.2.13. Account Logout

The account logout function shall allow account members to exit their account for security purposes.

Rationale: This allows account members to exit their accounts.

2.2.14.Help

The help function shall give the user an overview of how to use the different functions listed above.

Rationale: This allows the user to get answers to immediate questions on using the website.

2.3. User Characteristics

Users of the website must possess a minimal educational level which conforms to BSU entrance standards. Users of the website must know how to navigate in a website.

2.4. Constraints

The constraints on the services and functions of the system are as follows.

• The software product must conform to BSU disclaimer policy.

2.5. Assumptions and Dependencies

Since the BSU Online Bookstore is only accessible through the Internet, it is assumed that the end user has a connection to the Internet. It is also assumed that the user has a web browser able to display the website. (I.E. Microsoft Internet Explorer 4+ or compatible browser)

2.6. Apportioning of Requirements

There are no requirements that may be delayed until future versions of the system.

3. Specific Requirements

3.1. External Interface Requirements

3.1.1. User Interfaces:

The system will provide the ability for students and faculty to access the BSU Online Bookstore via the Internet. There will be three different user interfaces that will accompany this website: one for the students, the faculty, and the administrators. Tabs will be at the top of the login screen in order to change between the user modes.

✸ Students will be allowed to search database without having to login, however, they must login in order to perform any other transaction. These other transaction will include reserving and purchasing textbooks, or viewing and changing their online account.

✳ <u>The Faculty</u> must be required to login at all times in order to perform any transaction. Once logged in the faculty member will be able to update required textbook information per the course(s) they instruct, and make any changes to their personal online account.

✳ <u>Administrators</u> will be required to login at all times. However, they will have limit access via the web-interface only being able to pull predefined reports. The administrators will have to logon to a host machine inside the BSU Online Bookstore network in order to build reports and ensure backups are running.

3.1.2. Hardware Interfaces:

There are no special hardware interface requirements.

3.1.3. Software Interfaces:

There are no special software interface requirements.

3.1.4. Communication Interfaces:

There are no special communication interfaces requirements.

3.2. Functional Requirements

3.2.1. Stimulus: Click "Register" Button

Account Registration

Description	Allows users to create secured accounts. To set up an account the user should press the register button. Then the user will fill out a form with fields for name, mailing address, billing address, credit card type (Visa, MasterCard, Discover, American Express), credit card number, expiration date, username, and password. Once the user presses the submit button, the information is displayed to the screen and stored in the database.
Inputs	Name, Mailing address, Billing address, Credit card type, Credit card number, Expiration date, Username, Password.
Source	All inputs are provided by user.

Outputs	Name, Mailing Address, Billing Address, Credit Card Type, Credit Card Number, Expiration Date, Username Password.
Destination	The outputs are displayed on the screen as well as are stored in database on completion of the operation.
Requires	User to fill out form completely while inside secure website.
Pre-condition	The user is inside the website and not an account holder.
Post-condition	The user is an account holder that has a valid username and password to login with, as well as stored personal information (inputs) in database.

3.2.2. Stimulus: Click "Login" Button

Account Login

Description	Allows account members to enter their username and password. Once the username and password are verified, the user will be able to access account history, purchase books online, and update their account information.
Inputs	Username, Password.
Source	All inputs are provided by the user.
Outputs	Ability to access account history, purchase books online, update their account information.
Destination	The outputs are displayed to the Screen.
Requires	User to fill out login information inside secure website.
Pre-condition	The user is inside the website and has a valid username and password.

Post-condition	The user is inside the website and has access to account history, purchase books online, and update account information.

3.2.3. Stimulus: Click "Search" Button

Search

Description	The search function shall offer users the ability to search for books by title, author, subject, course number, professor, or ISBN number. Once the book is located in the database, a picture of the front cover will display along with title, author, price, availability, and condition of book.
Inputs	Title, Author, Subject, Course Number, Professor, ISBN and/or number.
Source	All inputs are provided by user.
Outputs	Picture of the front cover, Title, Author, Price, Availability, Condition of book.
Destination	The outputs are displayed to the screen.
Requires	The user must fill in at least one text box of the search form.
Pre-condition	The user is inside the website and knows at least one input to search for the book.
Post-condition	The user finds the book information he is searching for.

3.2.4. Stimulus: Click "Add to Shopping Cart" Button

Add to Shopping Cart

Description	The add to shopping cart function shall allow users to temporarily save books in a placeholder that are being considered for purchase until finished shopping. The user shall press the add to shopping cart button. This function utilizes the balance calculator function to display total price of the books in the cart. A page should display with the items in the shopping cart along with the total amount.
Inputs	Book, Price.
Source	All inputs are provided by database.
Outputs	Book, Price.
Destination	The outputs are displayed on the screen.
Requires	User to press add to cart button.
Pre-condition	The user is inside the website.
Post-condition	The user has a temporary storage of books while having the ability to keep shopping.

3.2.5. Stimulus: Click "Balance Calculator" Button

Balance Calculator

Description	The balance calculator function shall calculate the total balance of the books in the shopping cart and make give that information to the checkout function. A page should display with the items in the shopping cart along with the total cost.
Inputs	Books, Prices, Total number of books.
Source	The inputs are displayed by database.
Outputs	Books, Prices, Total number of books, Total price.
Destination	The outputs are displayed on the screen.
Requires	The add to shopping cart function to be utilized.
Pre-condition	The user is inside the website.

Post-condition	The user is displayed with the items in the shopping cart along with the total cost.

3.2.6. Stimulus: Click "Delete from Shopping Cart" Button

Delete from Shopping Cart

Description	The delete from shopping cart function shall remove any unwanted books from the cart. When the add to shopping cart displays the items in the shopping cart and prices, there is a checkbox next to each item. The user has the option of unchecking the box, then pressing the update button to remove items.
Inputs	Book, Price.
Source	All inputs are provided by database.
Outputs	Book, Price.
Destination	The outputs are displayed on the screen.
Requires	User to press delete from shopping cart button.
Pre-condition	The user is inside the website and has items in shopping cart.
Post-condition	The user is inside the website and has deleted an item from shopping cart.

3.2.7. Stimulus: Click "Reserve" Button

Reserve

Description	The reserve function shall hold books for up to 7 days that will be purchased and picked up at the bookstore. The user must press the reserve button after having items already in the shopping cart. Then the user will be asked to fill out a form for name, mailing address, telephone number, and email address. Once the user presses the submit button, the information is displayed on the screen along with a confirmation number.

Inputs	Name, Mailing address, Telephone Number, Email address.
Source	All inputs are provided by user.
Outputs	Name, Mailing address, Telephone Number, Email address, Confirmation number.
Destination	The outputs are displayed on the screen.
Requires	User to press the reserve button.
Pre-condition	The user is inside the website and already has items in the shopping cart.
Post-condition	The user has a confirmation number that is reserving books for up to 7 days that will be purchased and picked up at the bookstore.

3.2.8. Stimulus: Click "Checkout" Button

Checkout

Description	The checkout function shall allow account members to purchase books online securely. The user checkouts by pressing the checkout button after books have already been added to the shopping cart. The credit card on file for the account member will be charged for the purchase. The user will press the submit button if they want to use the credit card on file, otherwise they press the update button to modify credit card on file. After the submit button has been pressed, a confirmation number will appear along with the titles of books, prices, number of books purchased, and total cost.
Inputs	Books, Prices, Total number of books in shopping cart, Total price of books.
Source	All inputs are provided by database.
Outputs	Books, Prices, Total number of books purchased, Total price of books, Confirmation Number
Destination	The outputs are displayed on the screen.

Requires	User to press the checkout button and already have items in shopping cart.
Pre-condition	The user is inside the secure website and has logged in under username and password.
Post-condition	The user has made a purchase and has a confirmation number for order.

3.2.9. Stimulus: Click "Contact Us" Button

Contact Us

Description	The contact us function shall quickly give users the store address, store telephone number, store email address, and directions on how to get to the store. A page should display with text of the information listed above along with graphics for the map.
Inputs	None.
Source	None.
Outputs	Store address, Telephone number, Email address, Directions on how to get to the store, Map
Destination	The inputs are displayed on the screen.
Requires	User to be inside the contact us webpage.
Pre-condition	The user is inside the website.
Post-condition	The user is given ways to contact store.

3.2.10. Stimulus: Click "Update Account Information" Button

Update Account Information

Description	The update account information function shall give account members access to edit their information. They can modify name, mailing address, billing address, credit card type (Visa, MasterCard, Discover, American Express), credit card number, expiration date, and password. The user must press the update account information button. Then a form will appear with information filled in already and the user has the option to modify. The submit button is pressed when done, and the information will be displayed.
Inputs	Name, Mailing address, Billing address, Credit card type, number, Expiration date, and/or password.
Source	All inputs are provided by the user.
Outputs	Name, Mailing address, Billing address, Credit card type, number, Expiration date, and/or password.
Destination	The outputs are displayed on the screen.
Requires	User to modify form inside secure website and user to already have an account.
Pre-condition	The user is inside the website and is an account holder and logged in.
Post-condition	The user has modified account information.

3.2.11.Stimulus: Click "View Shipping Status" Button

View Shipping Status

Description	The view shipping status function shall allow account members to enter their confirmation number for a purchase and then view the status of shipment. The information that is required is shipping date, mailing address, and projected delivery date (cannot be the same day).
Inputs	Confirmation number.
Source	The input is provided by user.

Outputs	Shipping date, mailing address, projected delivery date.
Destination	The outputs are displayed on the screen.
Requires	User to have made a purchase no less than 24 hours prior.
Pre-condition	The user is inside the website.
Post-condition	The user has viewed shipping information on purchase. Side-effects None.

3.2.12.Stimulus: Click "View Account Purchase History" Button

View Account Purchase History

Description	The view account purchase history function shall allow account members to see previous purchases made under their username. The information that is required is date of purchase, credit card type, credit card number, expiration date, title of books, prices of books, and total amount of purchase.
Inputs	None.
Source	None.
Outputs	Date of each purchase, Credit card types, Credit card numbers, Expiration dates, Title of Books, Prices of books, Total amount for each purchase.
Destination	The outputs are displayed on the screen.
Requires	User to have made prior purchases.
Pre-condition	The user is inside the website and an account holder.
Post-condition	The user has viewed account purchase history.

3.2.13. Stimulus: Click "Logout" Button

Account Logout

Description	The account logout function shall allow account members to exit their account for security purposes. The user must press the logout button.
Inputs	None.
Source	None.
Outputs	None.
Destination	None.
Requires	User to be logged in under username and password.
Pre-condition	The user is inside the website and is logged in.
Post-condition	The user is logged out.

3.2.14. Stimulus: Click "Help" Button

Help

Description	The help function shall give the user an overview of how to use the different functions listed above. The user must type the function name in the search box that they are inquiring on. Then an overview will appear on how to use the function.
Inputs	Query name.
Source	The input is provided by user.
Outputs	Overview of different functions.
Destination	The output is displayed on the screen.
Requires	User to enter a word into the search box.
Pre-condition	The user is inside the website.
Post-condition	The user has gained knowledge on how to use function she inquired on.

3.3. Performance Requirements

The performance requirements are as follows:

• System login/logout shall take less than 5 seconds.
• Searches shall return results within 10 seconds.
• Orders shall be processed within 10 seconds.
• System shall support 10,000 simultaneous users.

3.4. Logical Database Requirements

There are various functions in the website that require the interface of a database. The three tables below show the different types of information used by various functions and the data entities and their relationships, respectively.

3.4.1. Types of Information Used

The types of information used by various functions of the website:

Function	Types of Information Used
Account Registration	User information (name, mailing and billing address, credit card type, number, expiration date, and user name, and password)
Account login	User information (user name, and password)
Search	Book information (title, author, subject, course number, professor, ISBN number, price, condition and number on hand)
Checkout	Credit card information (credit card type, credit card number), account purchase history (see below, *View account purchase history*), book information (number on hand)
Update Account info.	User information (name, mailing and billing address, credit card type, number, and expiration date, user name and password.
View account purchase history	Purchase history information (quantity, confirmation number, date of purchase, credit card type, credit card expiration date, title of book(s), price of book(s), total of purchases

3.4.2. Data Entities and their Relationships

The data entities and the relationships table describe the attributes of the types of data that shall be sent to the database.

Table Names	Column Lengths
Users - User Name - Password - Name (last name, middle initial, first) - Address (street number, street name, apt, city, state and zip code)	6 alphanumeric 9 digits 30 characters 40 alphanumeric
Books - ISBN number - Title of book - Author of book - Number on hand - Subject - Course number - Professor	10 digits 40 characters 30 characters 4 digits 20 characters 6 alphanumeric 20 characters
Credit Card Information - User name - Credit card name - Credit card number - Credit card expiration date	6 alphanumeric 20 characters 16 digits 4 digits
Account Purchase History - User name - Title of book(s) - Price of book(s) - Total amount of purchase - Quantity - Confirmation number - Date of purchase - Credit Card name	6 alphanumeric 40 characters 5 digits 5 digits 2 digits 6 digits 4 digits 20 characters

3.5. Design Constraints

The BSU Online Bookstore shall conform to the following design constraints:
- Able to support PC, Mac platforms.
- System logs out user after a ten minute inactivity period.
- System supports all web browsers (i.e. graphical, non-graphical).

3.5.1. Standards Compliance

The BSU Online Bookstore will follow existing standards and regulations, which are stated in the BSU disclaimer policy.

3.6. Software System Attributes

3.6.1. Reliability

The servers are not expected to crash for at least 214 days. In the event that a server does crash, a backup server will be up and running within the hour.

3.6.2. Availability

The BSU Online Bookstore will be available to users with access to the Internet once the systems are online and setup. The BSU Online Bookstore will be available to anyone with Internet access but an account is required to make purchases.

3.6.3. Security

Users will be able to access only their own personal information and not that of other users. Purchases will be handled through a secure server to ensure the protection of user's credit card and personal information.

3.6.4. Maintainability

This product shall be maintained by staff in case of any defect. In addition, any update or change that is made will be changed immediately on server-side computers without any patches required by the user.

3.6.5. Transferability

Not applicable.

3.6.6. Portability

The BSU Online Bookstore will be available to anyone with access to a web browser as specified in section 2.5.