Software Engineering Lab File

SUBMITTED IN THE PARTIAL FULFILLMENT REQUIREMENT

FOR THE AWARD OF DEGREE OF

Bachelor of Technology

(Computer Science and Engineering)

Submitted By Group 6

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UNDER THE SUPERVISION OF

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SCHOOL OF ENGINEERING AND TECHNOLOGY

BML MUNJAL UNIVERSITY™

FROM HERE TO THE WORLD

BML MUNJAL UNIVERSITY Gurugram, Haryana - 122413

April 2024

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Feasibility Study Report for Online Bookstore

Executive Summary

This feasibility study evaluates the viability of launching a new online bookstore, focusing on the unique value proposition of offering comprehensive educational resources and software engineering projects. Based on an in-depth analysis, the proposed online bookstore demonstrates strong potential in terms of market demand, technical feasibility, financial viability, and minimal risks with strategic mitigation plans in place.

1. Opportunity Description++

Product Opportunity: Launch an online bookstore specializing in academic and educational materials, particularly for software engineering students.

Value Proposition: Address the need for affordable, easily accessible educational resources and free software engineering projects, enhancing the learning experience for students globally.

2. Business Objectives and Scope

Objectives:

- To become a leading provider of educational materials and software engineering resources.
- To facilitate accessible learning through digital solutions.

Scope:

- The bookstore will offer textbooks, research papers, and free downloadable software engineering projects.
- Additional features may include online tutorials, webinars, and community forums for interaction among students.

3. Market and User Research

Target Market: College and university students, educators, and professional learners, particularly those in software engineering fields.

Competitive Analysis: Competition with major retailers like Amazon and educational platforms like Coursera. Unique selling point lies in niche focusing on software engineering and free project resources.

User Insights: Research indicates significant interest in platforms offering specialized educational content and practical learning materials like project templates.

4. Technical Feasibility

Technical Requirements: Robust e-commerce platform, secure payment gateway, user-friendly interface.

- **Resource Estimate**: Development will require web developers, cloud storage solutions for hosting large volumes of digital content, and tech support staff for maintenance.

5. Financial Viability

Cost Overview:

- Initial costs include website development, content acquisition, marketing, and legal expenses.
- Recurrent costs involve hosting services, content updates, and customer support.

Revenue Streams:

- Direct sales of educational materials.
- Subscription fees for premium content and additional features.

6. Risk Assessment

Potential Risks:

- Market penetration difficulties due to established competitors.
- Intellectual property issues regarding content distribution.

Mitigation Strategies:

- Strategic partnerships with educational institutions for endorsements.
- Rigorous legal review and compliance checks for content licensing.

7. Decision and Recommendations

Decision: Proceed with the development of the online bookstore.

Rationale: Strong market demand for specialized educational content and the potential for high returns on investment.

Recommendations:

- Begin with a pilot phase focused on specific regions or educational disciplines.
- Invest in targeted marketing campaigns to gain early traction.

Conclusion

Given the comprehensive analysis, the proposed online bookstore is assessed as feasible with considerable potential for success in the current educational market landscape. The execution of the outlined strategic measures should be prioritized to mitigate risks effectively. Stakeholders are recommended to approve and fund this project to move forward with the development phase.

This report serves as a foundation for decision-making and should be reviewed periodically as the project progresses to ensure continued alignment with business objectives and market dynamics.

Online Bookstore

Software Requirements Specification Report

1.Introduction

1)Purpose

Our Online Bookstore project is all about making it easy for you to buy and sell books online. We're creating a website where you can find and buy books from home, whenever you want. On our website, you'll be able to do everything from signing in to looking at book details, placing orders, paying for them, and tracking deliveries. It's designed to be quick and easy to use. But it's not just about buying books. You'll also be able to leave feedback, talk to sellers, and use other helpful services. For sellers and suppliers, our website provides tools to manage their books and track sales. By bringing buyers, sellers, and administrators together in one place, we're making it easier for everyone to communicate and work together to get the books they want. In short, our Online Bookstore project is all about making buying and selling books online easier for everyone.

2)Product Scope

Establishing and maintaining a comprehensive database of all stakeholders involved in the online bookstore ecosystem.

Development of the Online Bookstore website application.

Enabling access to the database for all relevant parties to choose services accordingly.

Application functionality includes:

Presenting a user-friendly login interface for parties to access services and make decisions based on available database information.

Providing administrative access for database maintenance and modifications.

3)References

https://www.researchgate.net/publication/352378151_WEB_BOOK_ORDERING_USING_ONLINE_BOOKSTORE_SYSTEM

2.Overall Description

1) Product Functions

The “online bookstore” software is an independent web based application. There are various user interfaces related with this software. These interfaces help the user to interact with the software and provide the necessary information for online bookstore.

Registration/Login: Users can create accounts or log in securely.

Books Details: Information on titles, authors, prices, and availability.

Order: Allows selecting, managing cart, and smooth checkout process.

Payment: Secure processing of various payment methods.

Delivery & Tracking: Manages order fulfilment and provides tracking.

User Feedback: Enables customers to leave reviews and ratings.

User characteristics

There are three types of users of this software:

- Customer
- Administrator
- Supplier

Customers are using for viewing and buying the books. Customer can also write feedbacks for books and services.

Administrator can add, edit and delete products and provide services to the customer.

Administrator can see the daily sell of the books, can also see the feedback given by the Customers. Administrator maintains the deliveries.

Supplier can use the system to see the product, their prices and quantity available profit and lose.

2) Operating Environment

The online bookstore runs on a web server and stores important information on a database server. It's built using languages like JavaScript and PHP, with special tools to make development easier. To keep your information safe, it uses special security measures like SSL certificates. The software works on different operating systems and has extra features to handle lots of users and keep everything running smoothly. For the online bookstore project, the constraints would be:

3)Design and Implementation Constraints

Language Restriction: The interface will be provided in English only, limiting accessibility for non-English speakers.

Single Server Operation: The system is designed to run on a single server, which may pose limitations on scalability and reliability, especially during periods of high traffic.

GUI Requirement: Graphical user interface (GUI) features are a necessity for user interaction, ensuring ease of use and navigation on the platform.

4)Assumptions and Dependencies

The product does require back-end database server MySQL for storing the username and

Password for different types of users of the system.

Assumptions :

- User must be trained for basic computer functionality.
- User must have basic knowledge of English.
- The system must be able to respond to database software within reasonable time

3.External Interface Requirements

1)User Interfaces

User of the system will be provided with the Graphical user interface, there is no Command line interface for any function.

2)Hardware Interfaces

Hardware requirement will be same for the both the parties which are follows:

Processor- Pentium I or above.

Ram 128MB or above.

3)Software Interfaces

Software required to make for working of our online bookstore is:

Operating system: Windows XP/Vista/7 or later version, Linux OS which supports Networking.

Java development tool kit

4.Functional Requirements

The system must provide following functionality:

Order

This module basically deals with the order of the books. It accepts book name, retrieve book details, calculate price based on selected book. After it payment process start then the book is delivered to the customer. com

Cancellation

Once the order of book has done, it can be cancelled or seen by this module. It accepts order ID verifies it with the database. On successful confirmation by the customer it can cancel the order. Further, it will update the bookstore database and the payment gateway to issue refund.

Search

This module retrieves the details of the books. It accepts book name or subject and course name and then retrieves the details of the particular book or all the books from particular subject or course name.

Performance Requirement

1. Any number of users can access the system at any time and maintain speed at maximum.

2. Server will be working whole 24x7 times.

3. Security

4. Reliability

5. Portability

Design Constraints

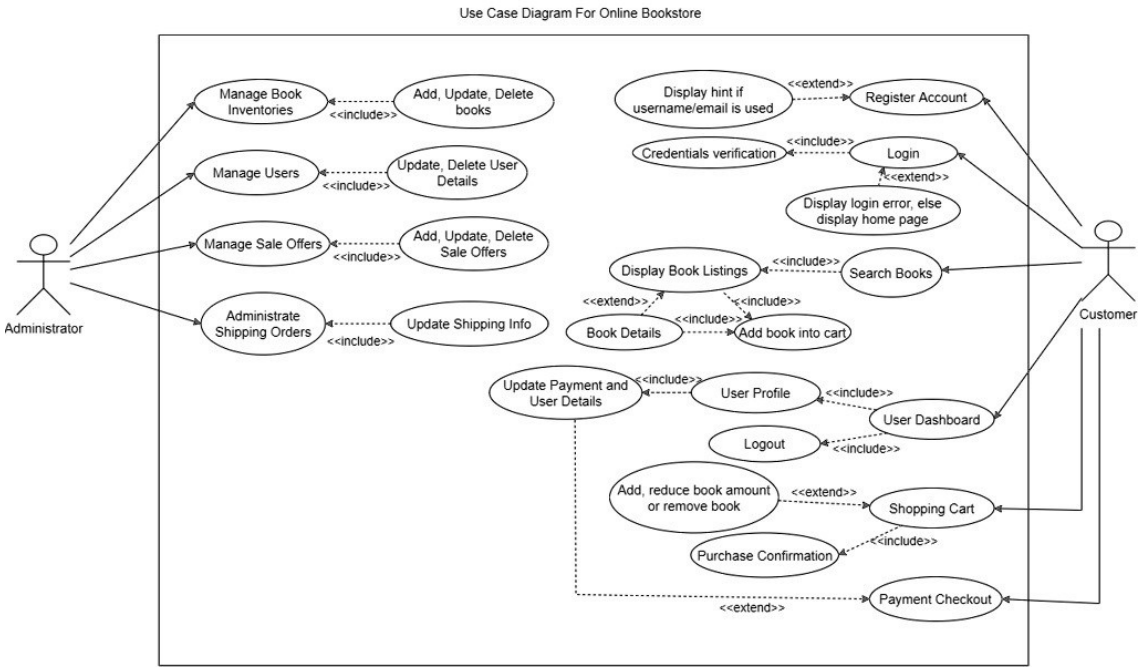
This Software can be installed on Personal Computers, Tablets or Smart phones.

For security reasons, Login Id & Password must be provided.

Design Constraints

- This Software can be installed on Personal Computers, Tablets or Smart phones.
- For security reasons, Login Id & Password must be provided.

Use Case Diagram



USE CASE DESCRIPTION

1. Administrator

Manage Book Inventories

- **Description**: Admin can add, update, or delete books in the inventory system.
- **Pre-condition**: Admin must be logged in.
- **Main Flow of Events**:
    1. Admin selects the manage book option.
    2. Admin chooses to add, update, or delete book details.
- **Post Conditions**: Book inventory is updated in the system database.

Manage Users

- **Description**: Admin can update or delete user details.
- **Pre-condition**: Admin must be logged in.
- **Main Flow of Events**:
    1. Admin accesses the user management section.
    2. Admin selects a user to update or delete.
- **Post Conditions**: User records are updated or removed from the system.

Manage Sale Offers

- **Description**: Admin can create, update, or remove sale offers.
- **Pre-condition**: Admin must be logged in.

- **Main Flow of Events**:
    1. Admin accesses the sale offers section.
    2. Admin adds, updates, or deletes offers.
- **Post Conditions**: Sale offers are adjusted in the system.

Administrate Shipping Orders

- **Description**: Admin manages and updates shipping information for orders.
- **Pre-condition**: Admin must be logged in.
- **Main Flow of Events**:
    1. Admin reviews shipping orders.
    2. Admin updates shipping information as necessary.
- **Post Conditions**: Shipping details are updated.

Update Payment and User Details

- **Description**: Admin updates payment methods and user account details.
- **Pre-condition**: Admin must be logged in.
- **Main Flow of Events**:
    1. Admin selects payment update option.
    2. Admin modifies payment methods or user details.
- **Post Conditions**: Payment and user details are updated.

2. Customer

Register Account

- **Description**: Customers can create a new account providing personal information.
- **Pre-condition**: Must not have an existing account.
- **Main Flow of Events**:
    1. Customer selects register option.
    2. Customer fills out the registration form.
- **Post Conditions**: New customer account is created.

Login/Logout

- **Description**: Customers can log in to and log out from their accounts.
- **Pre-condition**: Customer must be registered.
- **Main Flow of Events**:
    1. Customer enters credentials to log in.
    2. Customer selects logout to exit the session.
- **Post Conditions**: Customer accesses or exits their account.

Search Books

- **Description**: Customers can search for books using keywords or filters.
- **Pre-condition**: Customer is logged in.
- **Main Flow of Events**:
    1. Customer enters search terms.
    2. System displays relevant book listings.
- **Post Conditions**: Books matching the criteria are shown.

Shopping Cart

- **Description**: Customers can add or remove books from their shopping cart.
- **Pre-condition**: Customer has selected a book.
- **Main Flow of Events**:
    1. Customer adds a book to the cart or removes it.
- **Post Conditions**: Shopping cart contents are updated.

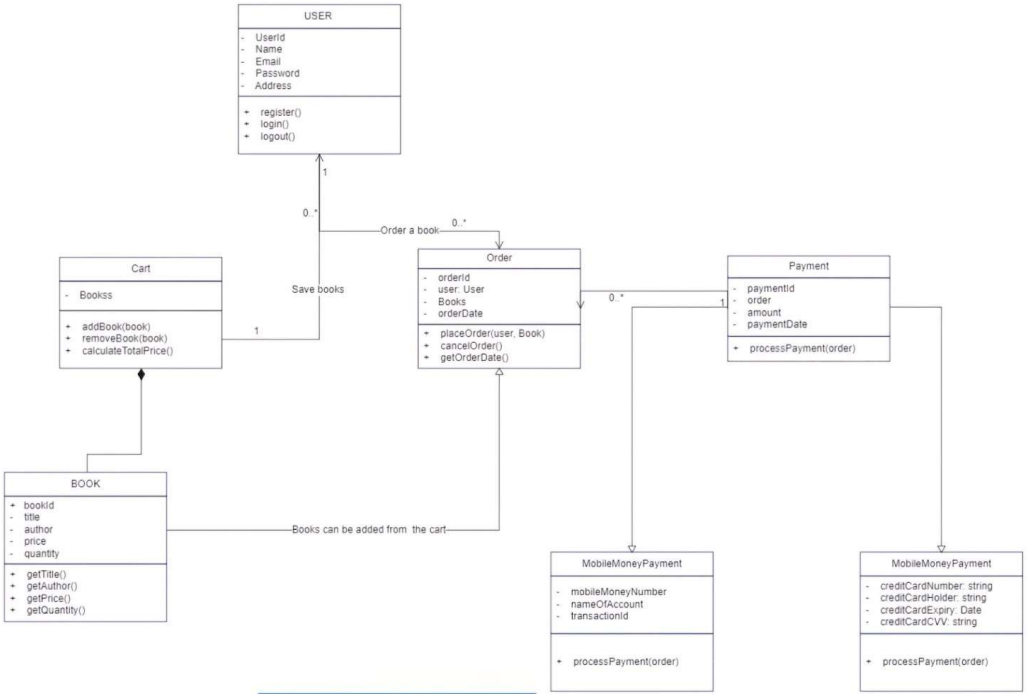
Purchase Confirmation and Payment Checkout

- **Description**: Customers finalize their purchase and perform payment.
- **Pre-condition**: Shopping cart has items.
- **Main Flow of Events**:
    1. Customer proceeds to checkout.
    2. Customer enters payment details and confirms the purchase.
- **Post Conditions**: Payment is processed and order is confirmed.

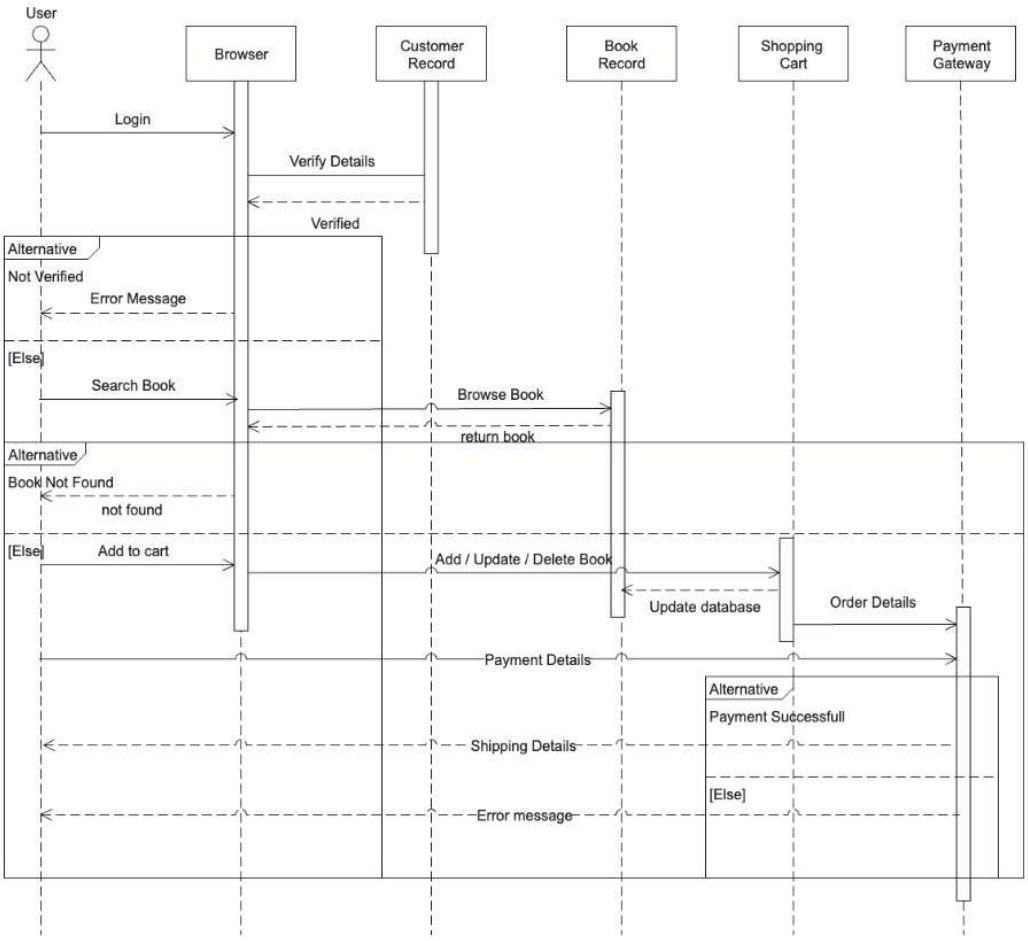
User Characteristics and Key Functions:

- **Administrator**: Manages books, users, sales, shipping, and payments.
- **Customer**: Registers, searches, buys books, and manages their profile and order

CLASS DIAGRAM

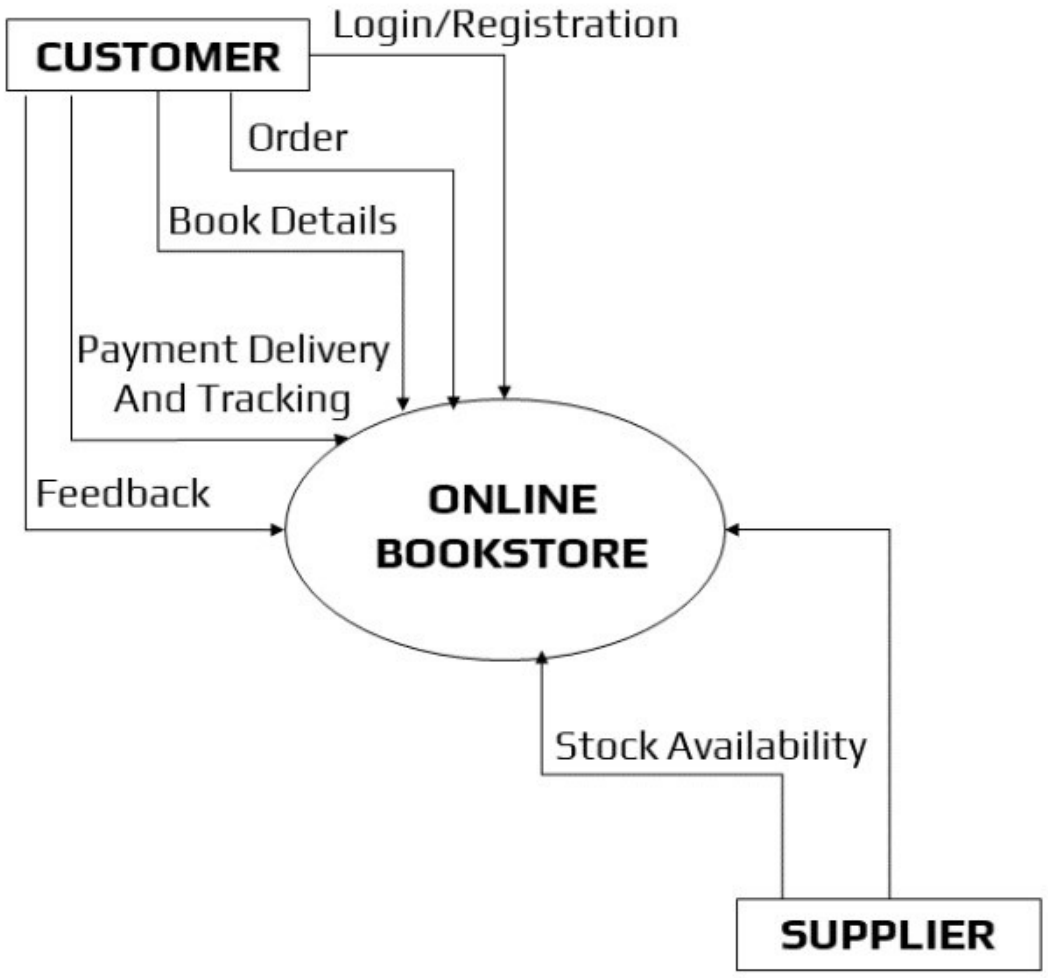


SEQUENCE DIAGRAM

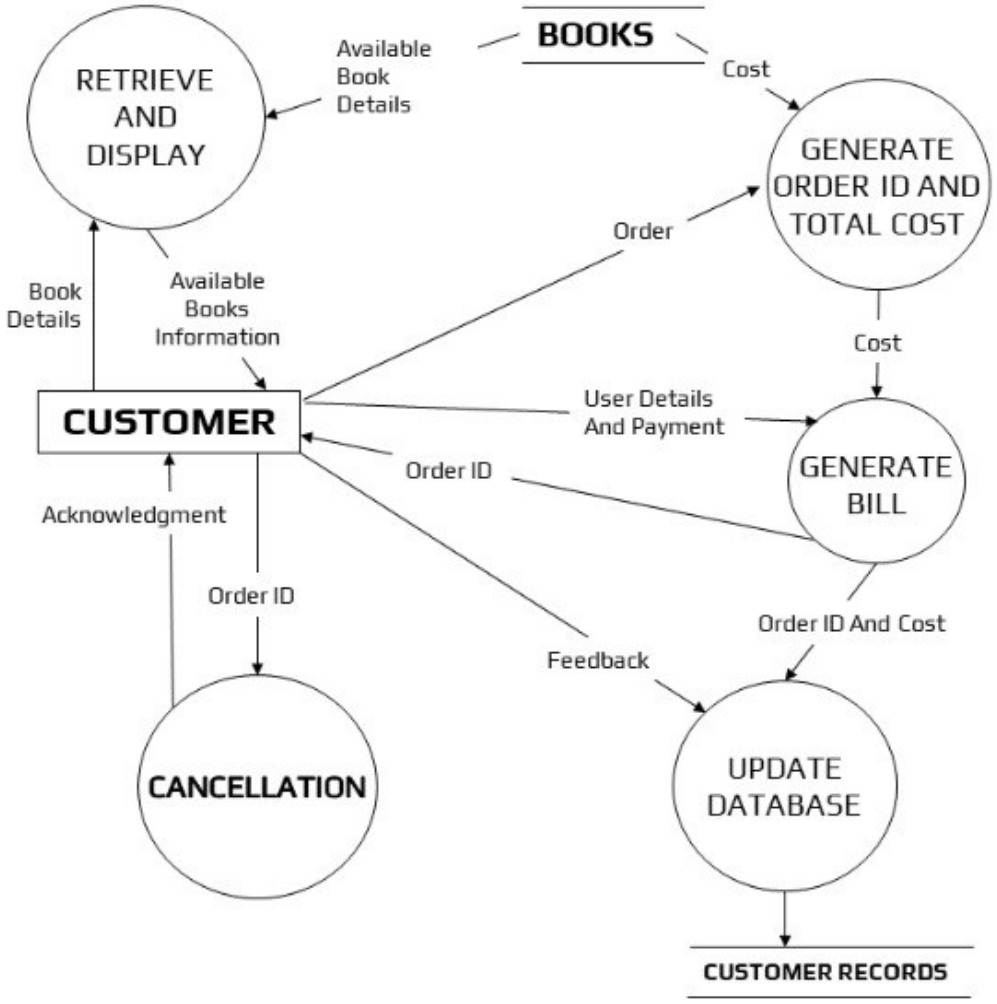


DATA FLOW DIAGRAMS (Level 0, 1 and 2)

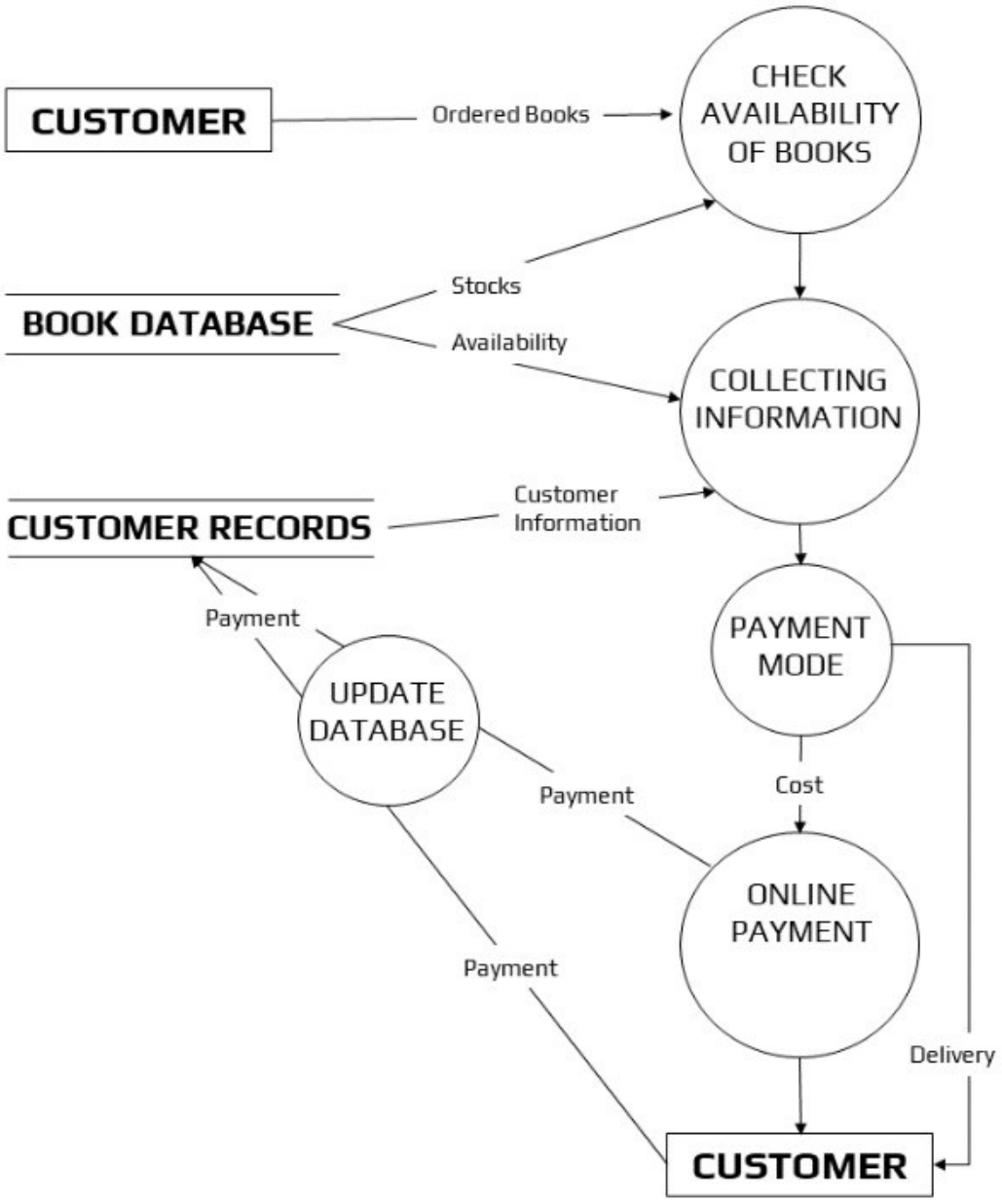
DFD LEVEL- 0



DFD LEVEL – 1


BOOKS
RETRIEVE AND DISPLAY
Available Book Details
Cost
GENERATE ORDER ID AND TOTAL COST
Order
Book Details
Available Books Information
Cost
CUSTOMER
User Details And Payment
GENERATE BILL
Order ID
Acknowledgment
Order ID
Order ID And Cost
Feedback
CANCELLATION
UPDATE DATABASE
CUSTOMER RECORDS

DFD LEVEL – 2


CUSTOMER
Ordered Books
CHECK AVAILABILITY OF BOOKS
Stocks
BOOK DATABASE
Availability
COLLECTING INFORMATION
CUSTOMER RECORDS
Customer Information
Payment
PAYMENT MODE
UPDATE DATABASE
Payment
Cost
ONLINE PAYMENT
Payment
Delivery
CUSTOMER

Testing

Test 1: opening Home page

Preconditions:

• The user has access to the Bookstore website.

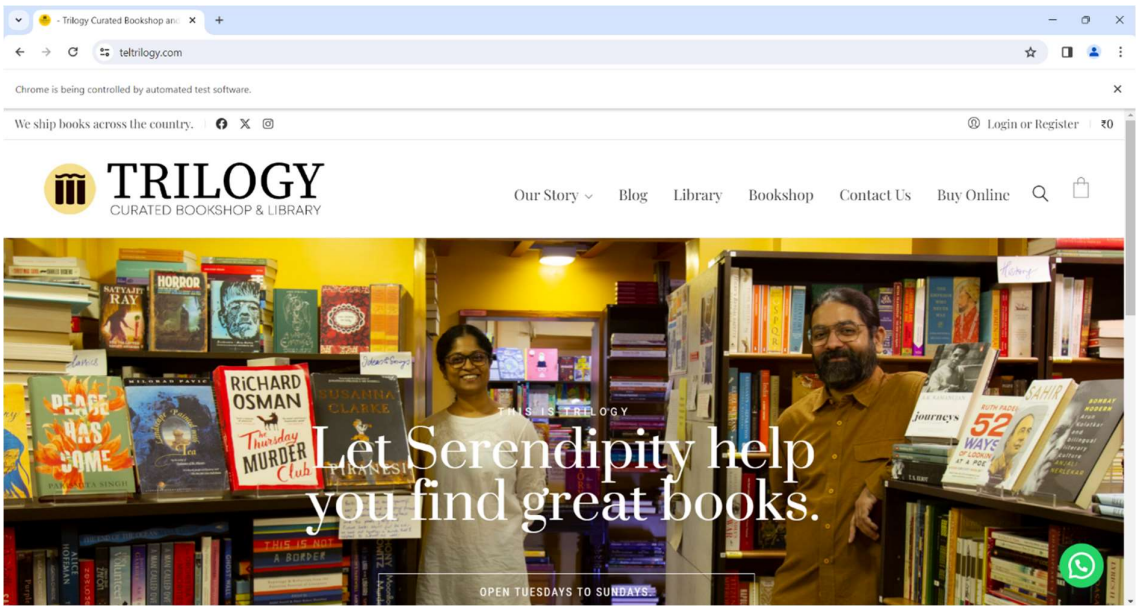
• The search functionality is accessible on the homepage.

Expected Result:

• The Homepage is displayed.

Actual Result:

The Homepage is displayed.




```
@Test
	public void openBookSite() throws InterruptedException {
		driver.get("https://www.teltrilogy.com/");
		Thread.sleep(3000);
	}
```

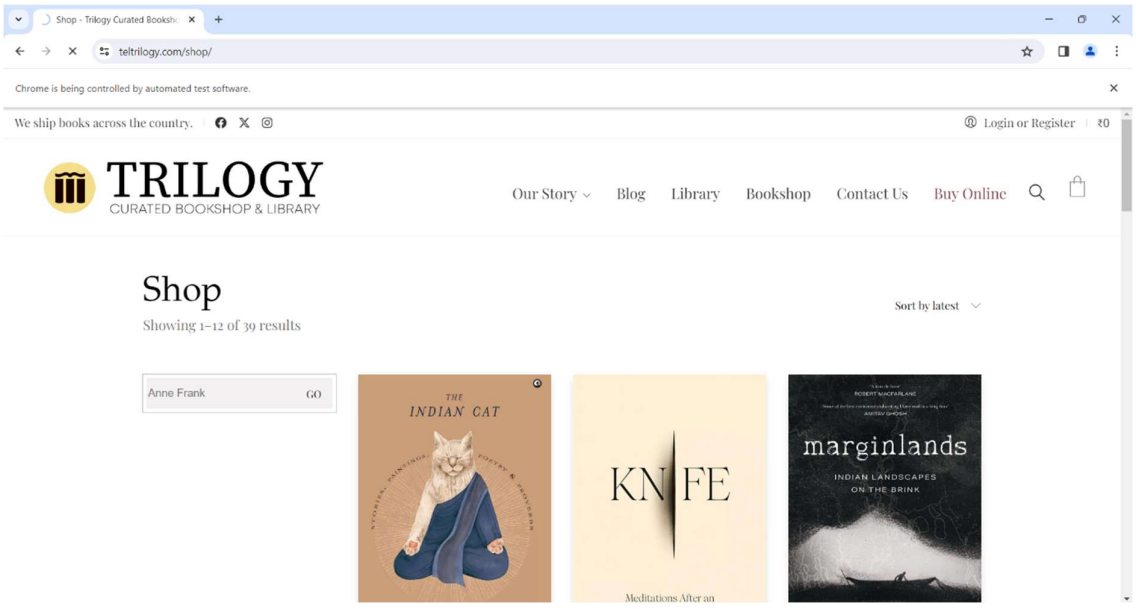
Test 2:

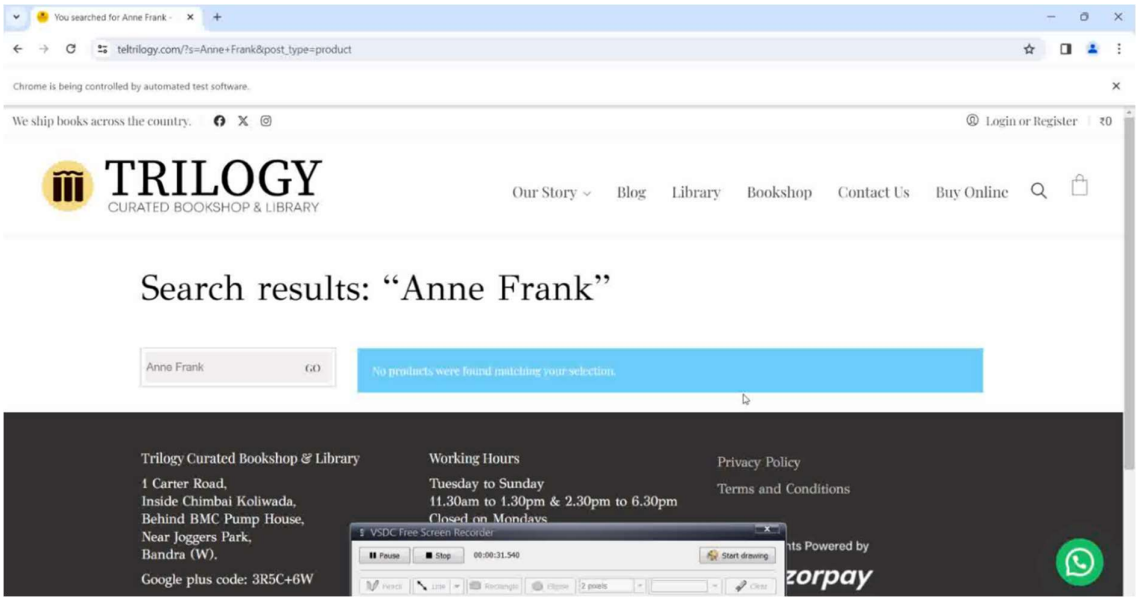
Searching for a book that is not in website.

Expected Result:

- No products found

Actual Result: No products found






```
@Test(priority = 2)
public void searchBook() throws InterruptedException {
	clickOnAnElement(driver.findElement(landingPage.shop));
	driver.findElement(landingPage.searchBox).sendKeys("Anne Frank");
	clickOnAnElement(driver.findElement(landingPage.enteer));
```

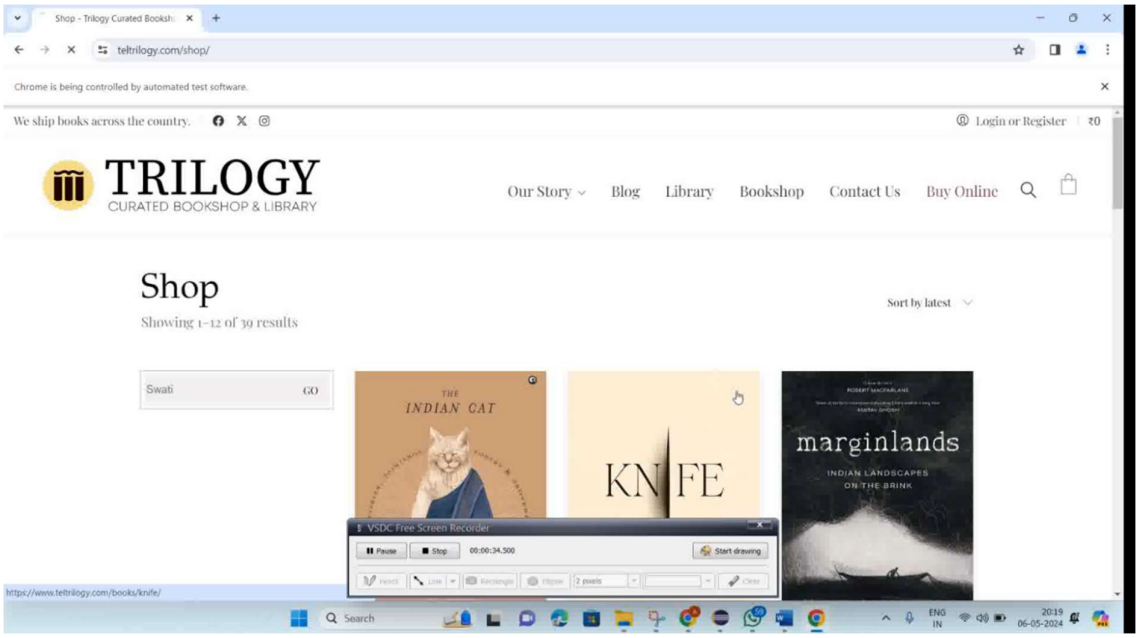
```
            Thread.sleep(4000);
        }
```

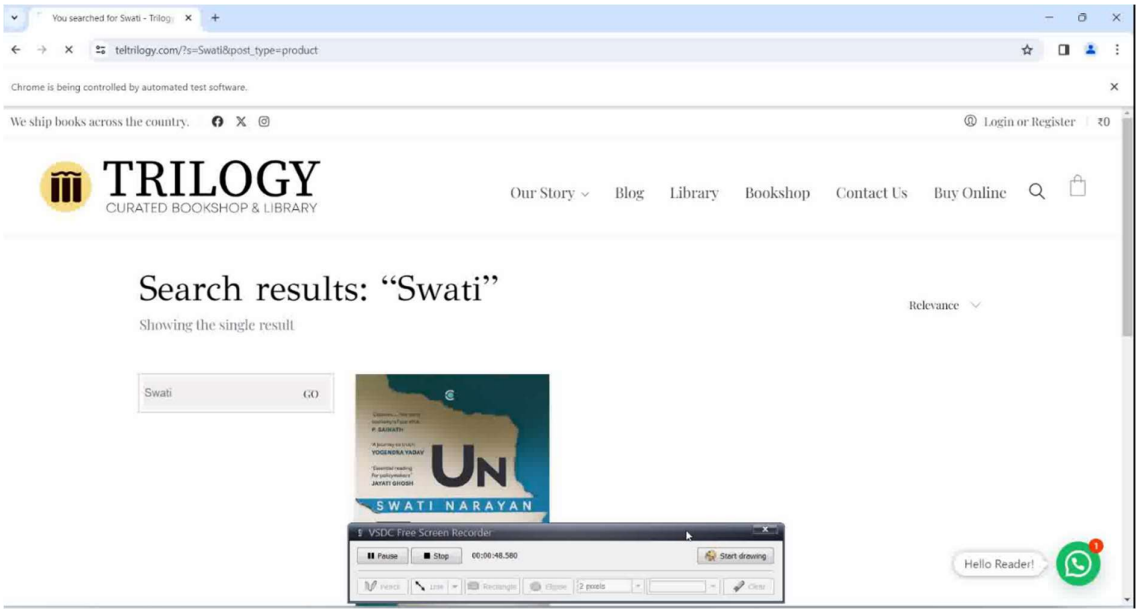
Test3:

Searching book which is present in website.

Expected Result: Found the book.

Actual Result: Found the book.





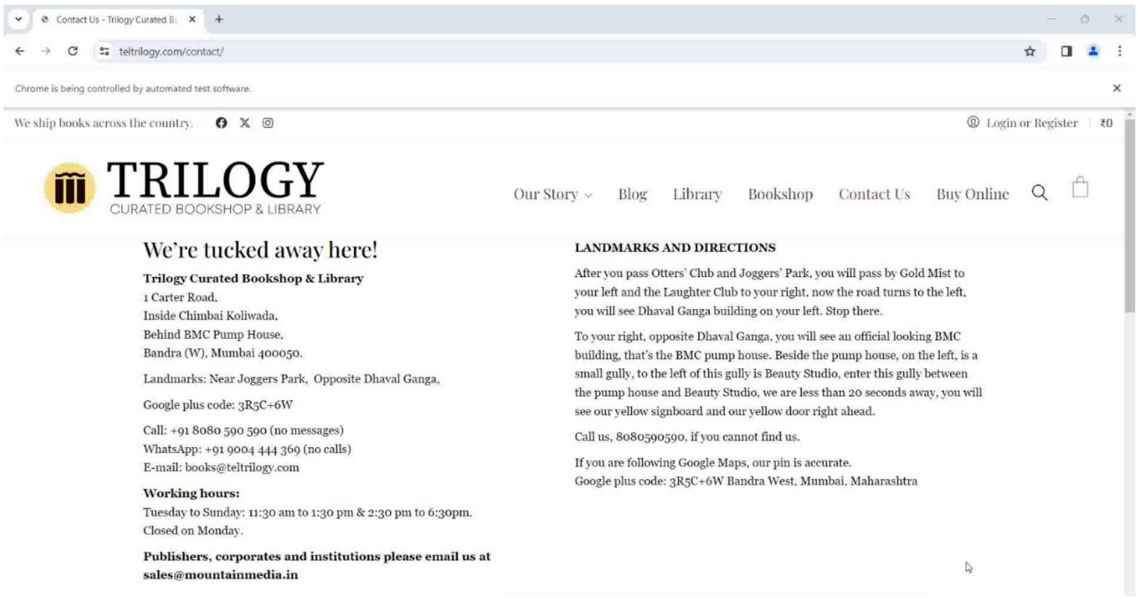
```
@Test(priority=3)
	public void searchbook2() throws InterruptedException {
		clickOnAnElement(driver.findElement(landingPage.shop));
		driver.findElement(landingPage.searchBox).sendKeys("Swati");
		clickOnAnElement(driver.findElement(landingPage.enteer));
		Thread.sleep(4000);
	}
```

Test:4

Viewing contact us page

Expected Result: contact us page is shown

Actual Result: contact us page is shown



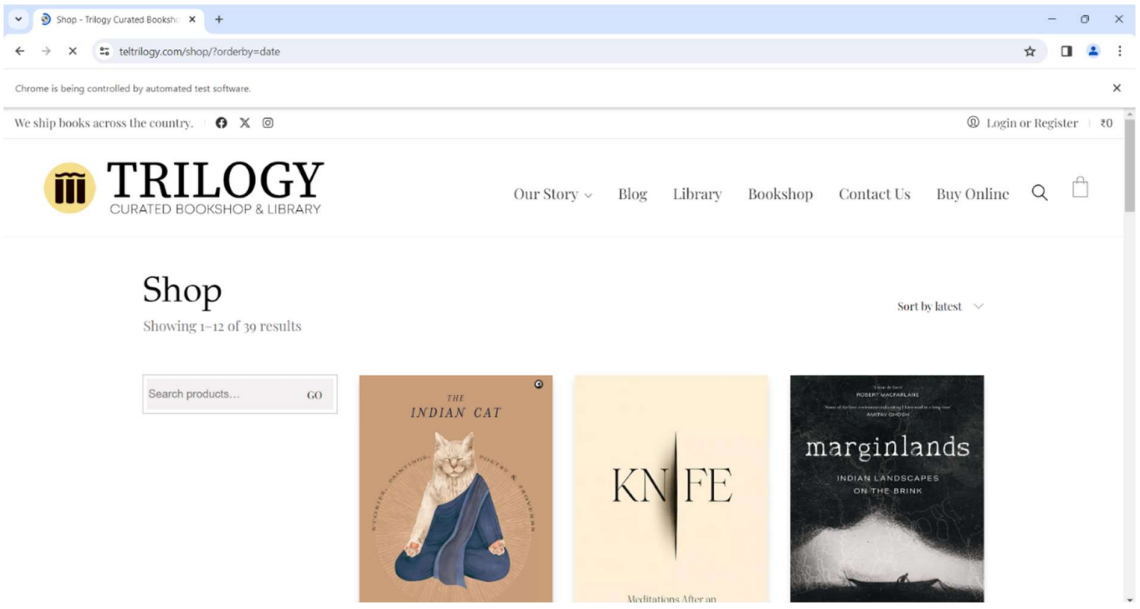

```
@Test(priority = 4)
	public void contactUs() throws InterruptedException {
		clickOnAnElement(driver.findElement(landingPage.contact));
		Thread.sleep(4000);
	}
```

Test:5

Sort Books by latest released books

Expected Result: Books are shown in latest first order

Actual Result: Books are shown in latest first order



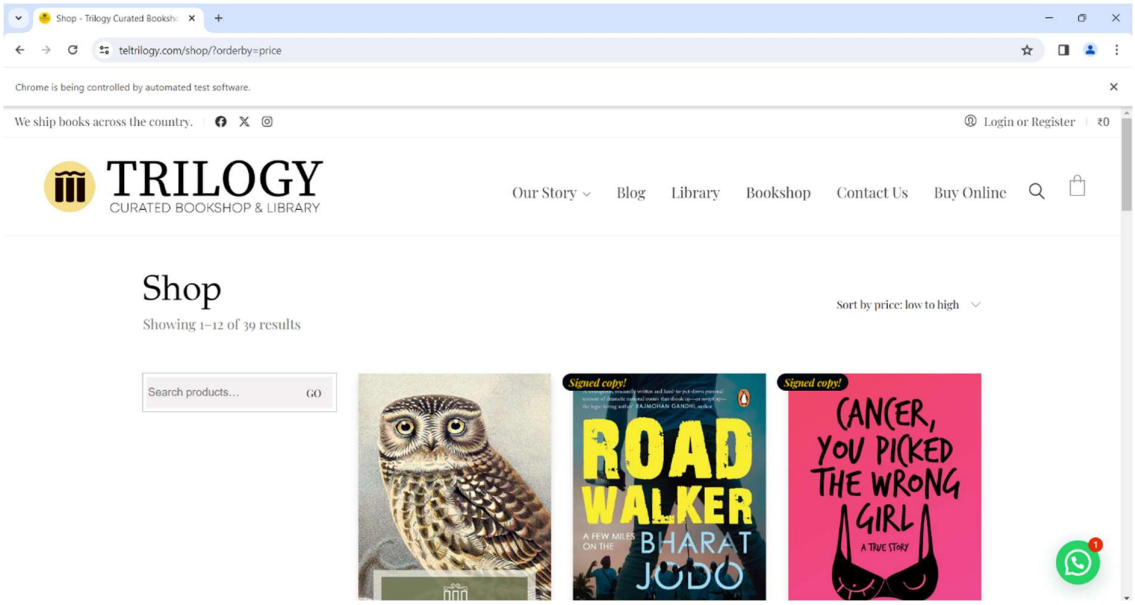

```
@Test(priority = 5)
	public void sortinglate() throws InterruptedException {
		clickOnAnElement(driver.findElement(landingPage.shop));
		clickOnAnElement(driver.findElement(landingPage.sortt));
		clickOnAnElement(driver.findElement(landingPage.sortbylate));
		Thread.sleep(4000);
	}
```

Test:6

Sort Books according to the price low to high.

Expected Result: Books are shown in Ascending order.

Actual Result: Books are shown in latest first order.



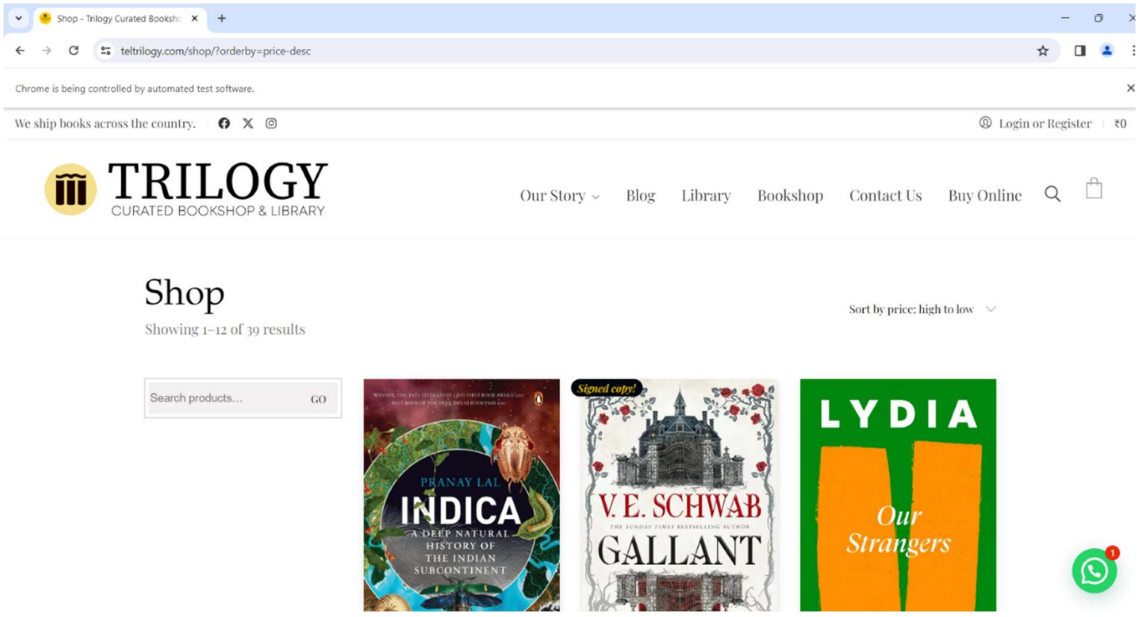

```
@Test(priority = 6)
	public void sortinginr() throws InterruptedException {
		clickOnAnElement(driver.findElement(landingPage.sortt));
		clickOnAnElement(driver.findElement(landingPage.sortbyinnc));
		Thread.sleep(4000);
	}
```

Test:7

Books sorted in high to low order

Expected Result: Books are shown in desending order according to price.

Expected Result: Books are shown in desending order according to price.



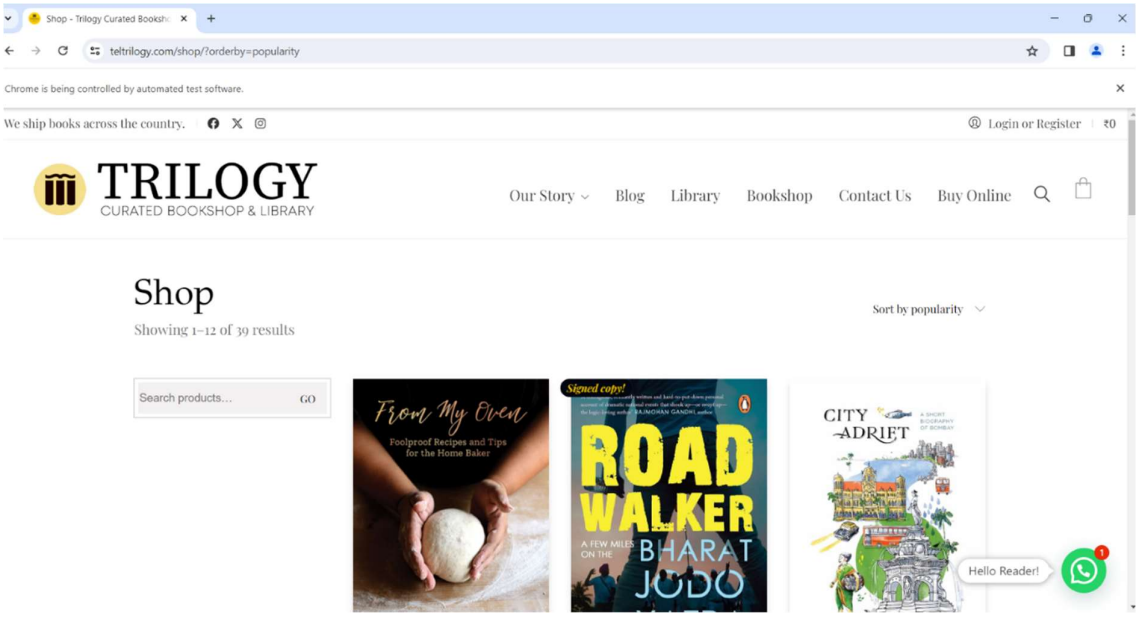

```
@Test(priority = 7)
public void sortingdecc() throws InterruptedException {
	clickOnAnElement(driver.findElement(landingPage.sortt));
	clickOnAnElement(driver.findElement(landingPage.sortdecc));
	Thread.sleep(4000);
}
```

Test:8

Sorting books according to popularity.

Expected Result: Populor books are shown first.

Expected Result: Populor books are shown first.




```
@Test(priority = 8)
public void sortingpopu() throws InterruptedException {
	clickOnAnElement(driver.findElement(landingPage.sortt));
	clickOnAnElement(driver.findElement(landingPage.sortbypopu));
	Thread.sleep(4000);;
}
```

Test:9

Click on a book

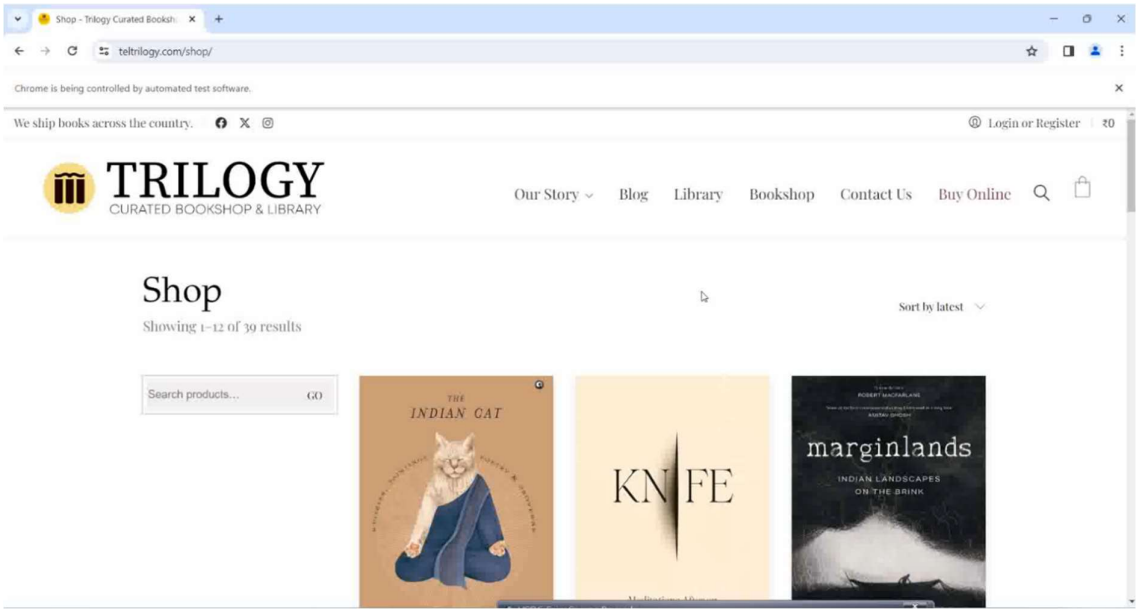
Add to cart

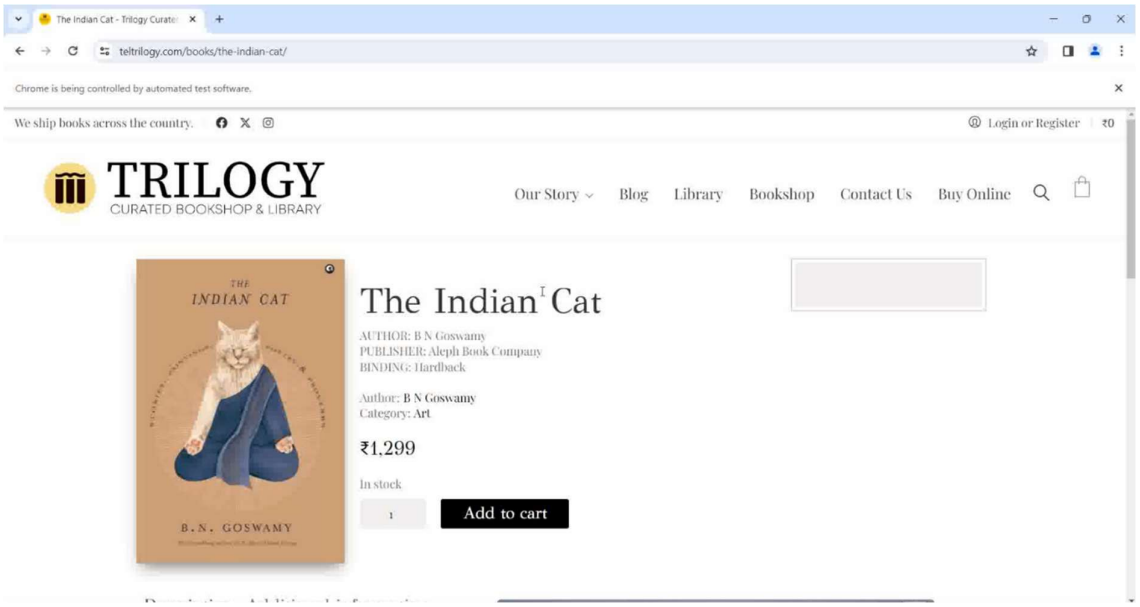
View cart

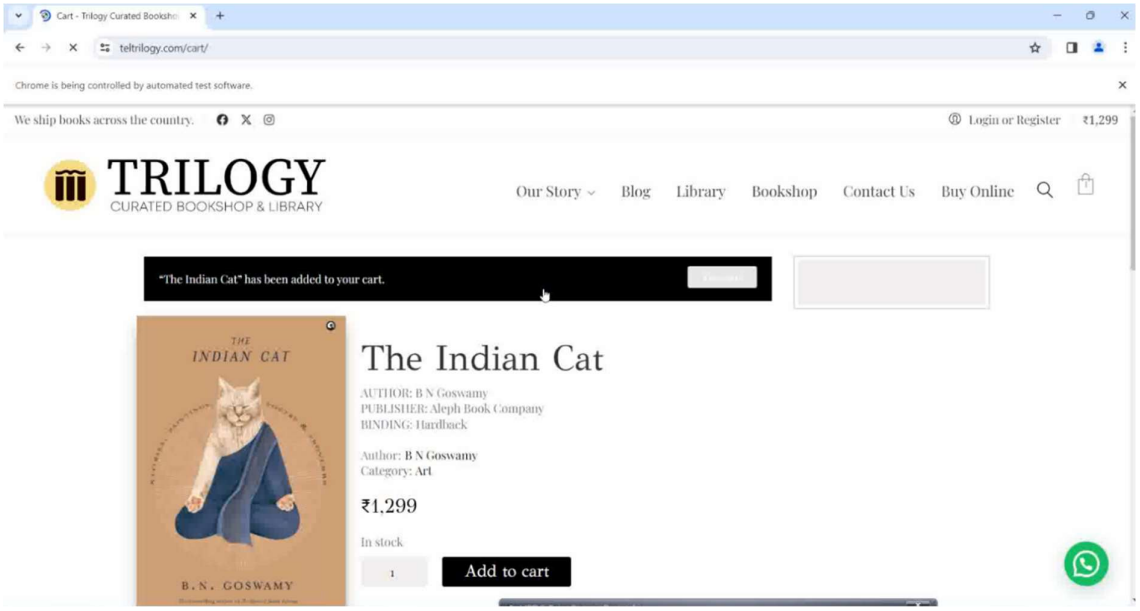
Proceed to checkout

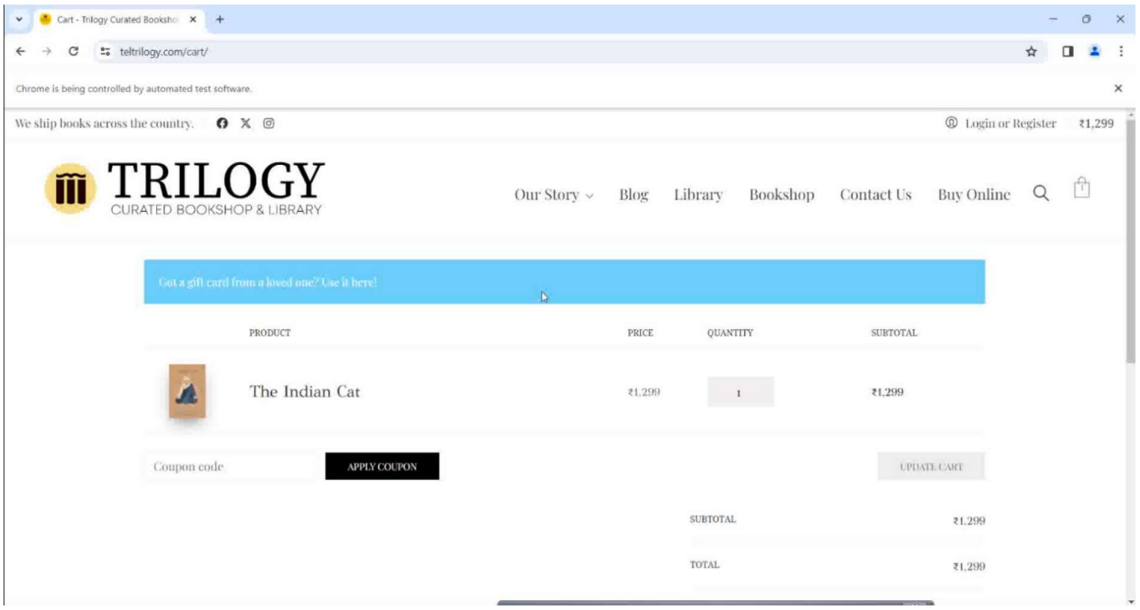
Expected Result: Checkout page is shown with correct price.

Actual Result: Checkout page is shown with correct price.


Shop - Trilogy Curated Booksh
teltrilogy.com/shop/
Chrome is being controlled by automated test software.
We ship books across the country.
Login or Register
₹0
TRILOGY
CURATED BOOKSHOP & LIBRARY
Our Story
Blog
Library
Bookshop
Contact Us
Buy Online
Shop
Showing 1–12 of 39 results
Sort by latest
Search products...
GO
THE INDIAN CAT
KNIFE
marginlands
INDIAN LANDSCAPES ON THE BRINK


The Indian Cat - Trilogy Curate
teltrilogy.com/books/the-indian-cat/
Chrome is being controlled by automated test software.
We ship books across the country.
Login or Register
₹0
TRILOGY
CURATED BOOKSHOP & LIBRARY
Our Story
Blog
Library
Bookshop
Contact Us
Buy Online
THE INDIAN CAT
B.N. GOSWAMY
The Indian Cat
AUTHOR: B N Goswamy
PUBLISHER: Aleph Book Company
BINDING: Hardback
Author: B N Goswamy
Category: Art
₹1,299
In stock
1
Add to cart


Cart - Trilogy Curated Booksho
teltrilogy.com/cart/
Chrome is being controlled by automated test software.
We ship books across the country.
Login or Register
₹1,299
TRILOGY
CURATED BOOKSHOP & LIBRARY
Our Story
Blog
Library
Bookshop
Contact Us
Buy Online
"The Indian Cat" has been added to your cart.
The Indian Cat
AUTHOR: B N Goswamy
PUBLISHER: Aleph Book Company
BINDING: Hardback
Author: B N Goswamy
Category: Art
₹1,299
In stock
1
Add to cart


Cart - Trilogy Curated Booksho
teltrilogy.com/cart/
Chrome is being controlled by automated test software.
We ship books across the country.
Login or Register
₹1,299
TRILOGY
CURATED BOOKSHOP & LIBRARY
Our Story
Blog
Library
Bookshop
Contact Us
Buy Online
Got a gift card from a loved one? Use it here!
PRODUCT
PRICE
QUANTITY
SUBTOTAL
The Indian Cat
₹1,299
1
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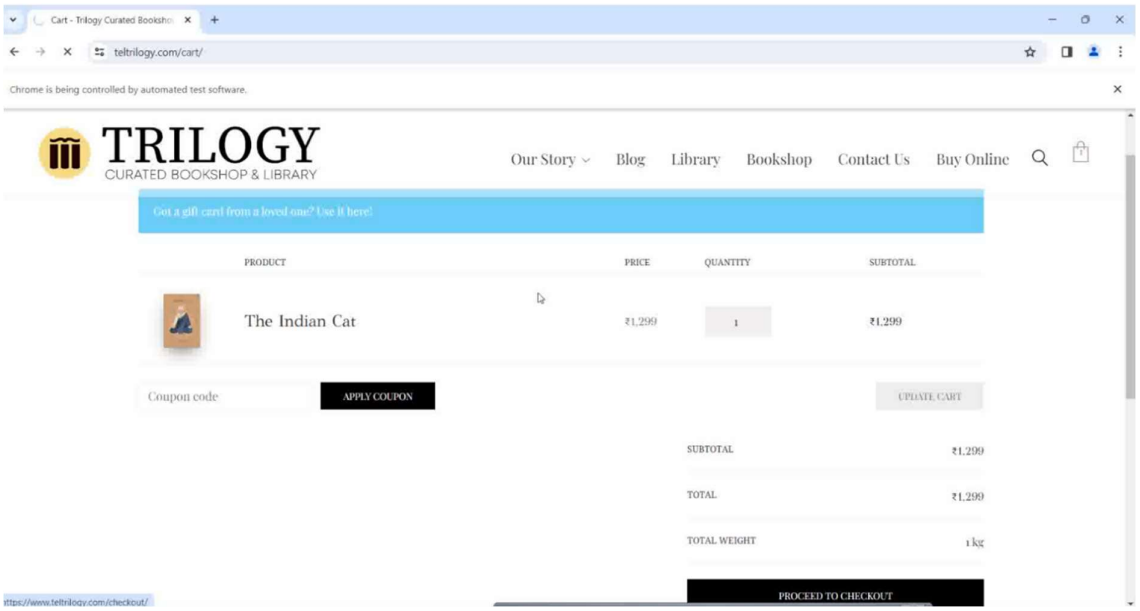
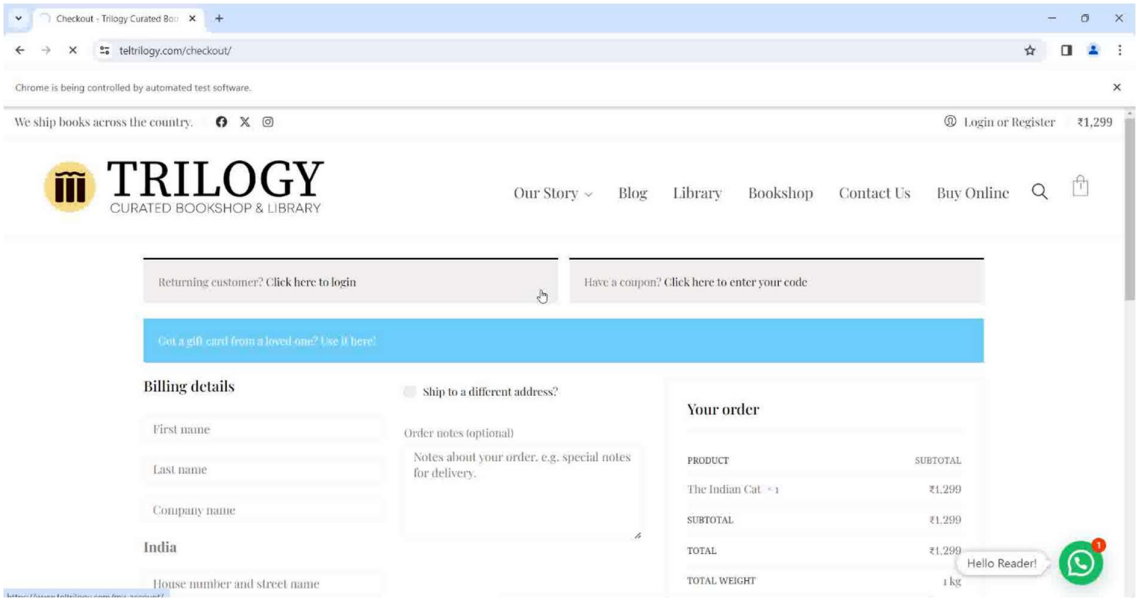
Coupon code
APPLY COUPON
UPDATE CART
SUBTOTAL
₹1,299
TOTAL
₹1,299





[Text Wrapping Break]

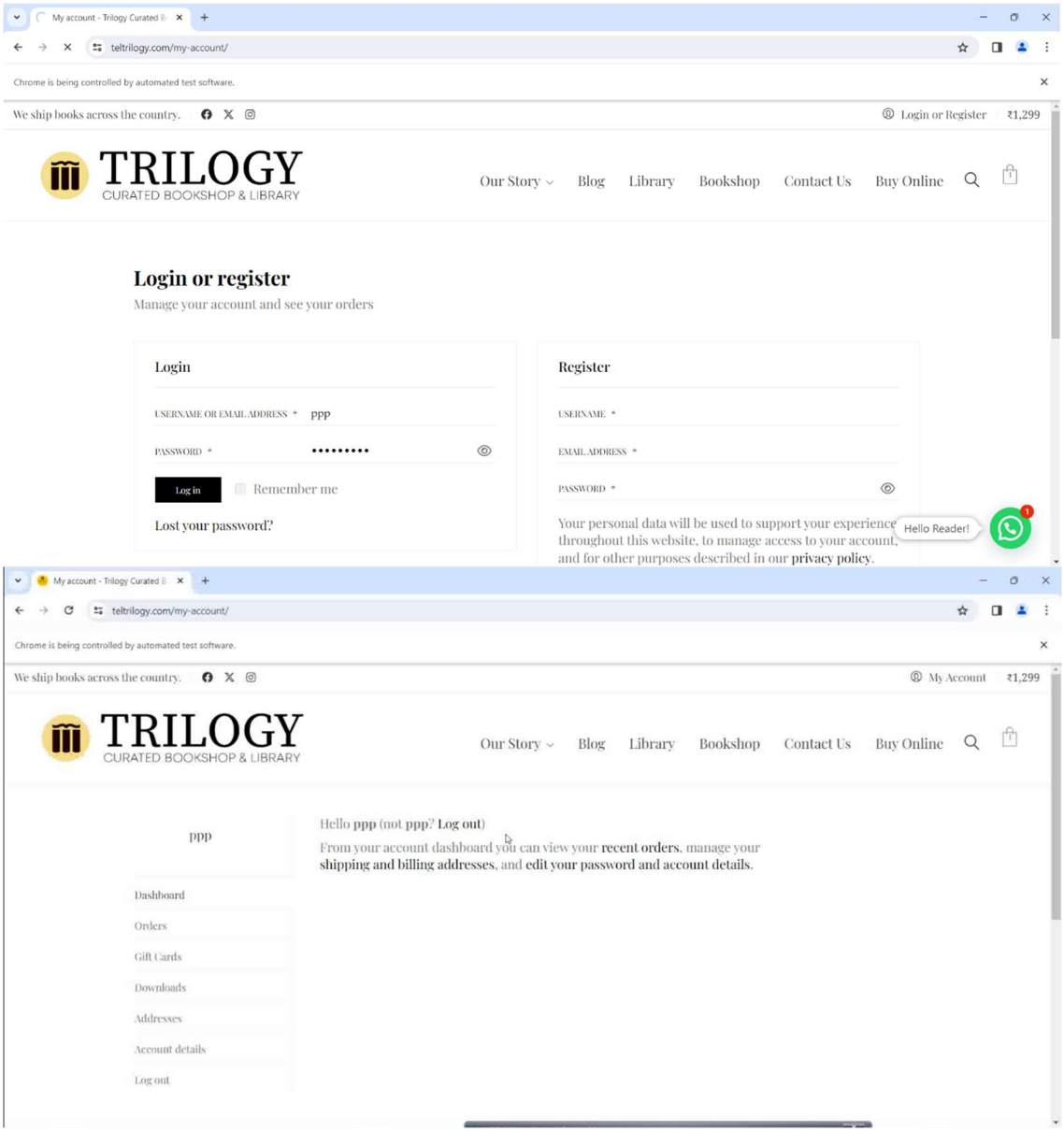
```
@Test(priority=9)
public void selectItemAndAddToCart() throws InterruptedException {
	clickOnAnElement(driver.findElement(landingPage.shop));
	Thread.sleep(2000);
clickOnAnElement(find(driver,By.xpath(String.format(productListing.productItem,
4))));
		Thread.sleep(4000);
		clickOnAnElement(driver.findElement(landingPage.addtocar));
		Thread.sleep(2000);
		clickOnAnElement(driver.findElement(landingPage.viewCart));
		Thread.sleep(2000);
		clickOnAnElement(driver.findElement(landingPage.toout));
		Thread.sleep(4000);
}
```

Test:10

Login to website using registered credentials.

Expected Result: Successful Login.

Actual Result: Successful Login.




```
@Test(priority = 10)
	public void login() throws InterruptedException {
		clickOnAnElement(driver.findElement(landingPage.toLogin));
		Thread.sleep(1000);
		clickOnAnElement(driver.findElement(landingPage.toId));
		driver.findElement(landingPage.toId).sendKeys("ppp");
		clickOnAnElement(driver.findElement(landingPage.toPass));
```

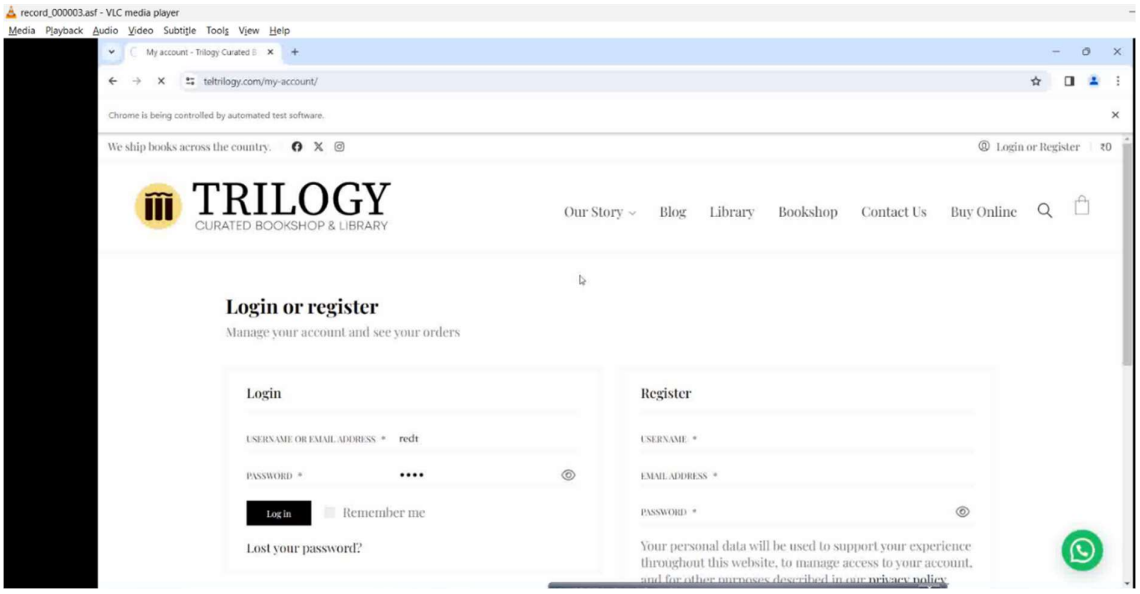
```
        driver.findElement(landingPage.toPass).sendKeys("#$ffffff@");
        clickOnAnElement(driver.findElement(landingPage.loginButton));
        Thread.sleep(4000);
        clickOnAnElement(driver.findElement(landingPage.logoutButton));
        Thread.sleep(3000);
    }
```

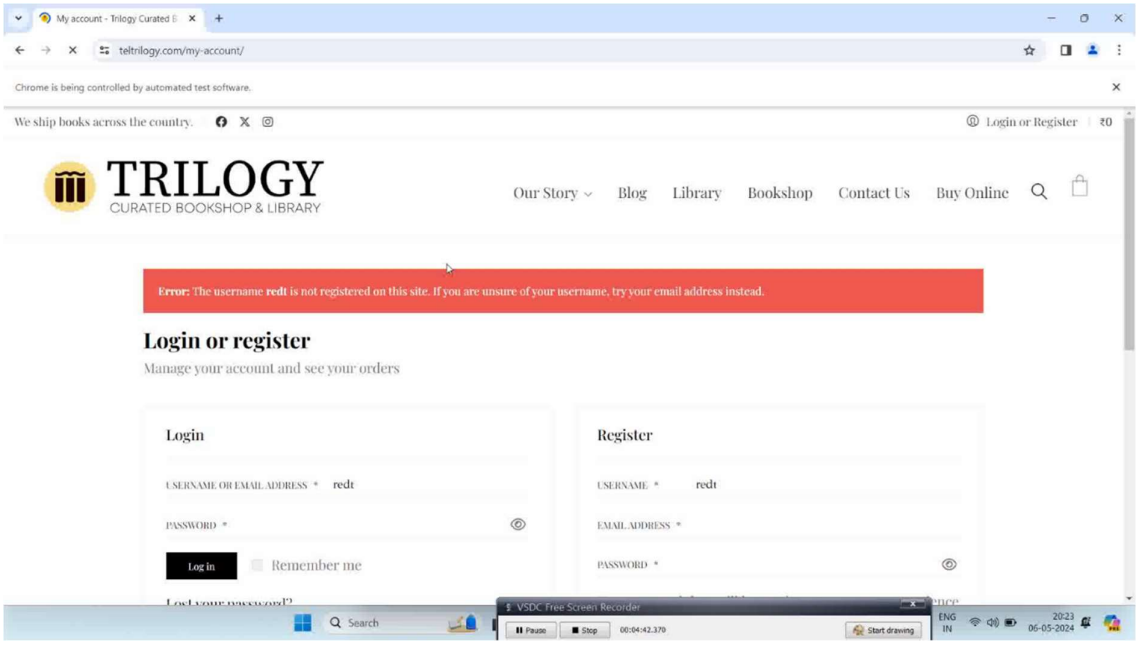
Test:11

Login to website using unregistered credentials.

Expected Result: User name not registered.

Actual Result: User name not registered.






```
@Test(priority = 11)
publi void loginwrong() throws InterruptedException {
	clickOnAnElement(driver.findElement(landingPage.toLogin));
	Thread.sleep(1000);
	clickOnAnElement(driver.findElement(landingPage.toId));
	driver.findElement(landingPage.toId).sendKeys("redt");
	clickOnAnElement(driver.findElement(landingPage.toPass));
	driver.findElement(landingPage.toPass).sendKeys("#00@");
	clickOnAnElement(driver.findElement(landingPage.loginButton));
	}
```

Listingpage Java:

```
package com.book.pages;

import org.openqa.selenium.By;
public class LandingPage {
	public By searchBox = By.xpath("//*[@id='woocommerce-product-search-field-
0']");

	public By shop = By.xpath("//*[@id=\"menu-main-menu-1\"]/li[6]/a/span");

	public By enteer = By.xpath("//*[@id=\"woocommerce_product_search-
3\"]/form/button");

	public By contact = By.xpath("//*[@id=\"menu-main-menu-
1\"]/li[5]/a/span");

	public  By sortt =
By.xpath("//*[@id=\"main\"]/header/div[2]/form/div/div/button/span");

	public By sortbylate =
By.xpath("//*[@id=\"main\"]/header/div[2]/form/div/div/ul/li[2]/a");
```

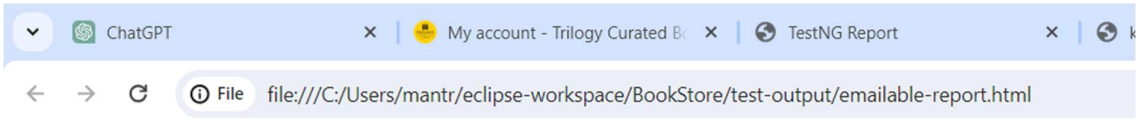
```
	public By sortbypopu =
By.xpath("//*[@id=\"main\"]/header/div[2]/form/div/div/ul/li[1]/a");

	public By sortbyinnc =
By.xpath("//*[@id=\"main\"]/header/div[2]/form/div/div/ul/li[3]/a");

	public By sortdecc =
By.xpath("//*[@id=\"main\"]/header/div[2]/form/div/div/ul/li[4]/a");

	public By addtocar = By.xpath("//*[@id=\"product-
8721\"]/div[2]/form/button");

	public By viewCart =
By.xpath("//*[@id=\"main\"]/div/div[1]/div[1]/div/a");

	public By toout = By.xpath("//*[@id=\"main-
wrapper\"]/div[1]/div/div[4]/div/div/div/a");

	public By toLogin = By.xpath("//*[@id=\"main-
wrapper\"]/header[1]/div[1]/div/div/div[2]/div[1]/a/span");

	public By toId = By.xpath("//*[@id=\"username\"]");

	public By toPass = By.xpath("//*[@id=\"password\"]");
	// pass = #$ffffff@

	public By loginButton =
By.xpath("//*[@id=\"customer_login\"]/div[1]/form/p[3]/button");

	public By logoutButton = By.xpath("//*[@id=\"main-
wrapper\"]/div[1]/div/div[1]/nav/ul/li[7]/a");

	}
```

SeTests.java:

```
package com.bookstore.ttest;

import java.time.Duration;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.testng.annotations.BeforeClass;
import org.testng.annotations.Test;

import com.bookstore.commonUtils.SeleniumMet;
import com.book.pages.LandingPage;
import com.book.pages.ProductListing;

import org.testng.annotations.AfterClass;

public class SeTests extends SeleniumMet{

	WebDriver driver;
	LandingPage landingPage = new LandingPage();
	ProductListing productListing = new ProductListing();
```

```
	@BeforeClass
	public void setup() {
		driver = new ChromeDriver();
		driver.manage().window().maximize();
		driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(20));
	}
Class
	public void tearDown() {
		driver.quit();
	}

}
```

Testing Report:



Test	# Passed	# Skipped	# Retried	# Failed	Time (ms)	Included Groups	Excluded Groups
Default suite							
Default test	11	0	0	0	421,470		

Class	Method	Start	Time (ms)
Default suite			
Default test — passed			
com.bookstore.ttest.SeTests	contactUs	1715007655825	8496
	login	1715007852370	30864
	loginwrong	1715007883236	9725
	openBookSite	1715007474226	159545
	searchBook	1715007633777	10405
	searchbook2	1715007644184	11640
	selectItemAndAddToCart	1715007816356	36011
	sortingdecc	1715007714147	72728
	sortinginr	1715007689098	25047
	sortinglate	1715007664326	24770
	sortingpopu	1715007786877	29476

Project Management Report