

American International University-Bangladesh (AIUB)

Department of Computer Science Faculty of Science & Technology (FST) Summer 19_20

Section: A Group No: 7

Online Book Shop

A software Engineering project submitted By

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The project will be Evaluated for the following Course Outcomes

CO3: Choose appropriate software engineering model in a software	Total Marks	
environment		
Project Background Analysis (problem, needs, goal, benefits, etc.)	[5Marks]	
Appropriate Process Model Selection and Argumentation with Evidence	[5Marks]	
Completeness, Spelling, Grammar and Organization of the Answer	[5Marks]	
		•
CO4: Explain the roles and their responsibilities in the software pro	ject	Total Marks
management activities		
Content Knowledge (e.g. System Requirements, System Design)	[5Marks]	
Project Role identification and Responsibilities descriptions	[5Marks]	
Presentation Delivery and Defense	[5Marks]	

Text Format:

- o Style: Times New Roman
- o Size: 12
- o Line spacing: 1

Background of the Project:

Bangladesh is a developing country but, remarkably, our Information Communication System's progress increasing rapidly day by day. In this COVID 19 pandemic situation, people's going through a very tough time. Due to home quarantine, people performing their work online such as online classes, online shopping even attain jobs and important meetings from home via online. Especially, many students having their classes online. As their new semester or class started, they need the new book. But in this quarantine, they cannot go outside or many of them staying in their native remote area villages. On the other hand, in this pandemic situation, the financial crisis is a fact. So, buying the new book is quite tough for students. If there was any facility to have the book at home with low prices then it might be useful to them. New book's prices are relatively higher than the used book. So online-based used books shop can be a better solution regarding this issue.

What is your project objective?

The main objective of this project is to create an affordable online book shop that allows users or students to search and purchase, sell, return old and new book (base on some terms and policies) in online based on category such as author, subject, publication, different genre etc.

What is the root cause of this problem?

Because, we are passing through a bad time. In this pandemic, everyone is staying at home. Specially students are at home. Books are the best companion to pass this unlimited leisure. Also, the online classes are going on. But going outside is still not safe. So, our purpose is to reach them their desire books at home with safety. There are many students are performing online classes from many privileged areas from our country where engineering, medical, history etc. books are not available to their near book shop and its also not safe to go to the store in this COVID-19 situation. So, our target consumers are that students whom we will serve their necessary books by home delivery. Student also can borrow books from our site. Our system has another great thing that students can purchase second hand books at a very low rate.

Why is this problem being so important to consider?

Time does not wait for none. Everyone wants to utilize their time. They want spend their valuable time by reading books. And many institutions already started taking online classes. So, books are being necessary to everyone but they are not getting it easily. To keep phase with the time this problem is so important to consider. Students can get first hand as well as second hand books at a very cheap rate and also home delivery. They can keep them safe in this situation. They can also borrow books and return them at a very cheap price. As anyone cannot get book, he cannot prepare his lessons or make notes. So, he/she will lack from others knowledge. Our book shop site will solve all this problem.

What solution are you going to provide to solve the above-mentioned problem?

Developing an affordable online book shop so that anyone can buy or sell from anywhere in the country. Keeping a good amount of book collection to full fill all customers' demands. If we don't have sufficient funds then we can collaborate with old and new book stores. Selling their books through our website we may be able to income. Most of the books store might be agreeing to deals as they are not getting enough customers in this pandemic situation. The book store having inadequate customs can increase their business via online book store.

Who are the target group of users of your solution?

The target group of users is students, teachers, and book lovers.

And how they will be benefited by your proposed solution to the problem?

A huge collection of affordable old and new books in one place will reduce the waste of time and money. Students or users do not need to go outside as all books will be sent at their respective addresses. Everybody will be able to order books from any part of the country whatever they staying in urban or rural areas. Anyone can sell old books and earn a good amount of money. There will be employment for many people related to these services in this unemployment situation due to lockdown.

What are the basic functionalities of your proposed solution?

The project is going to be developed as a Web Base. Because anyone can access the website from any device and place of the country. The user will choose and buy their required book from the website and within 7 days (maximum) book would be delivered to the respective address via courier. Even if anyone wants to sell or publish their old or new books then this is possible within some terms and conditions such as books of good quality, popularity, quantity, and price.

System Features or Requirements

1. Log in and Registration

Functional Requirement

- 1.1 The website will allow uses to log in with their respective "username" and "password"
- 1.2 If the log in is successful they will be able to see their home page.
- 1.3 If user forget password then there will be a recover password option.
- 1.4 If the user is new then there will be a registration option.

Priority Level: High

Precondition: valid username and password required

Cross-reference: 4.1,7.1

2. Variety of Payment Option

Functional Requirement

- 2.1 The website shall offer various payment method gateway such as credit card, debit card, mobile banking (Bkash, Rocket, Nagod) and Cash on delivery.
- 2.2 If user is not registered then use name, phone number and address required.

Priority Level: High

Precondition: Must have a valid payment account.

3. Book Categories and Filter Option

Functional Requirement

- 3.1 There will be various books categories such as Novel, Story, Religious, School College University's books, Sports, Laws book, Drama, Freelancing book etc.
- 3.2 Filter will be added in search bar to search easily. Like search by author, publication, book's name, ISBN etc.
- 3.3 User will be able to categories books easily using filter option like most popular, newly added, top brought, most cheap rate etc.

Priority Level: High

Cross-reference: 6.1

4. User Reviews and Rating

Functional Requirement

- 4.1 Log in and if user have no account then registration is must need for books review and rating
- 4.2 Rating will given from one to five
- 4.3 Top ten rated and reviewed book's list will be shown in home page.

Priority Level: High

Precondition: must be a registered user.

Cross-reference: 1.1

5. Offer and Voucher

Functional Requirement

- 5.1 Base on special occasion voucher offer code may be given.
- 5.2 To avail voucher offer log in must.
- 5.3 Voucher will be valid within authority given deadline.

Priority Level: low

Precondition: log in needed

6. Search Option

Functional Requirement

- 6.1 There will be a search bar on the top of the website where user will be able to search their queries.
- 6.2 Auto suggestion will be given base on query
- 6.3 If search bar remains empty then most search or popular queries will be suggested

Priority Level: High

Cross-reference: 3.2

7. Bookmarks and History

Functional Requirement

- 7.1 The website will have bookmarks option to save any books details in bookmarks list.
- 7.2 User can track down his browsed books in history.

Priority Level: High

Precondition: must be a registered user

Cross-reference: 1.2

8. Buy, Sell, and Return

Functional Requirement

- 8.1 Any user can buy book through add to cart option but for unregistered user additional information required.
- 8.2 If any user willing to sell book user need to fulfill some condition. User need to be registered. Book's condition must be full fresh.
- 8.3 If user get any wrong book or delivered books has any kind of defect then return policy will be applicable for 7 days after purchase day.
- 8.4 To avail return feature, user need to fill up and submit a return application form through the website.

Priority Level: High

Precondition: must be a registered user

9. Third-party Book Shop

Functional Requirement

- 9.1 Any general book shop can publish their books through the website.
- 9.2 An administrative featured panel will be given to them. So that they can add, delete, update books information, cost, and offer.
- 9.3 Their book will be suggested based on their and user location distance. Less distance will be prioritized.

Priority Level: High

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Precondition: must be a registered user

10. Website Availability

Non-functional Requirement

10.1 Availability describes how likely the system is accessible for a user at a given point in time.

While it can be expressed as a probability percentage.

10.2 The system shall be at least 99.5 percent available on weekdays between 6:00 a.m. and

midnight local time, and at least 99.95 percent available on weekdays between 4:00 p.m. and

6:00 p.m. local time. So, per-day the system shall face 7.20 minutes downtime or

unavailability.

Priority Level: High

Precondition: Confirm 99.9% uninterrupted server connection

11. Integrity

Non-functional Requirement

11.1 Integrity refers blocking unauthorized access to system functions, preventing

information loss, ensuring that the software is protected from virus infection, and protecting

the privacy and safety of data entered into the system. Integrity is a major issue with Internet

software.

11.2 Sending verification code to the user phone, during account log in and payment to avoid

any kind data breach.

11.3 Only verified user shall show their own transaction.

Priority Level: High

Precondition: Use of 2 step verification.

12. Maintainability

Non-functional Requirement

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12.1 Maintainability indicates how easy it is to detect, fix and extending the software.

12.2 A maintenance programmer shall be able to modify existing reports or fix the bugs to

conform to revised chemical-reporting regulations from the federal government with 20 labor

hours or less of development effort.

Priority Level: High

Precondition: To avail this service user must need to be valid or authentic.

13. Performance or Efficiency

Non-functional Requirement

13.1 Performance Testing is a software testing process used for testing the speed, response time,

stability, capacity, throughput and resource usage of a software application under particular workload.

13.2 The system database query execution or response time shall be 0.5 to 100 MS, website

shall able to provide services to 500 host or user without any problem.

Priority Level: High

Precondition: To avail this service a fast database server required.

Project Requirement:

Human Resource: Human resource is the fundamental part of project. Because without human power a project cannot be thought. Project manager, software designer, developer, trainer,

domain expert (expert in any specific domain or subject e.g. garment related software need a

garment expert) all of these important and crucial roles lies in Human resources.

Money: Money is another essential part of project. Buying tools, materials & devices or gadget,

providing office workers salary finally it needs in every sectors of a project.

Devices: To ensure a software project development computer, laptop, mobile phone, printer, scanner, photo state etc. devices are minimum required.

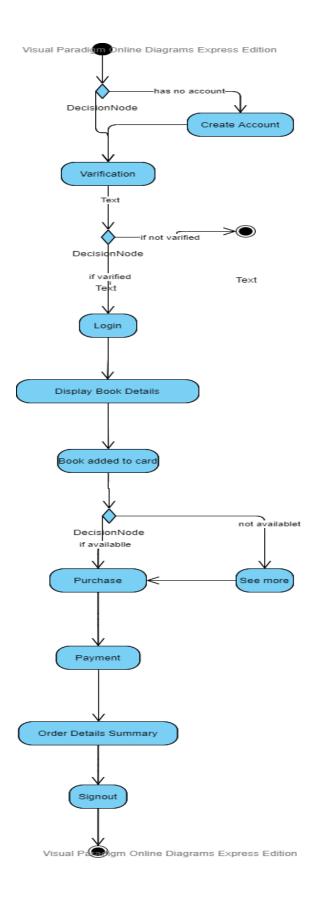
Tools: Development and design need software tools. So, software tools may be brought if the software is paid. Except this, a software firm may be required physical tools such as screw driver, electric tester, scissor, glue, tape, paper cutter etc.

Selection of Process Model

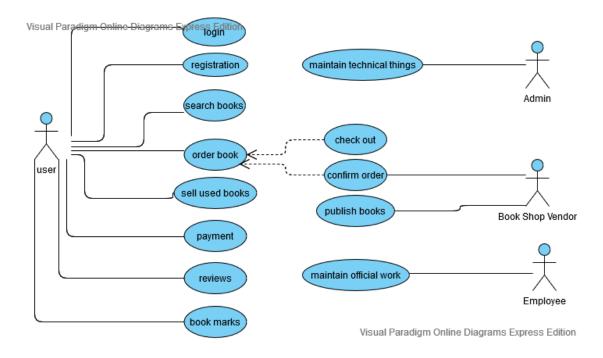
Activity Diagram:

Customers log in to the system. If the customer has already an account the system requires validation. If the account is valid customer can login to the system otherwise the process is terminated. After login customers can see a booklist and can order whatever they need. Then the system checks if the book is available or not. If the book is available the system adds the book to cart. If the book is not available customers can see more and order their favorite ones. After order, the system goes for payment option. The system shows an order details summary to the customer. After then if the customer wants, he/she can sign themselves out from the system

Activity Diagram Conti.:

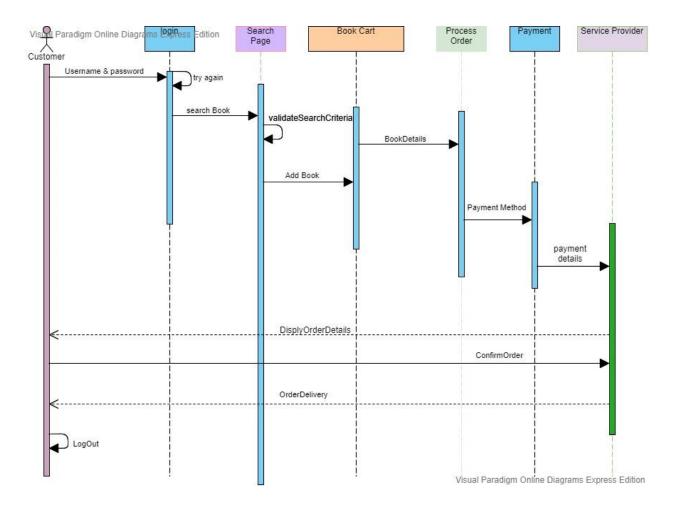


Use Case Diagram:

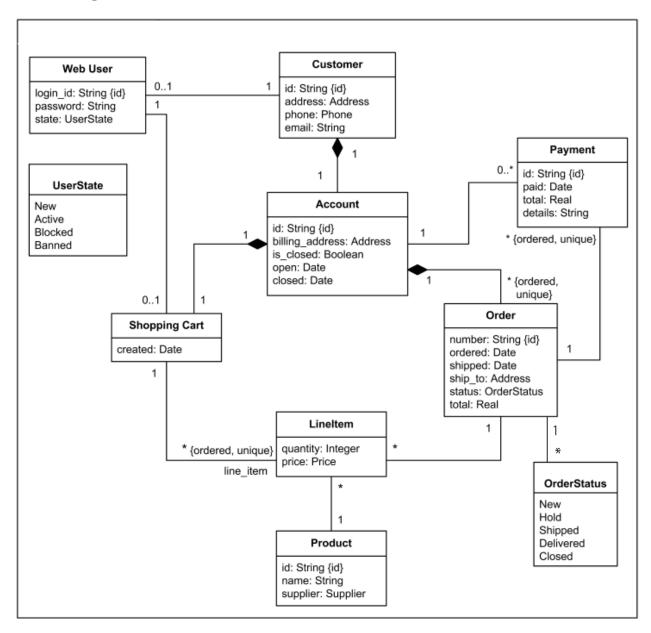


In this system, user can easily log in with their respective username and password. If user is new then they must do their registration. There will be various books categories such as Novel, Story, Religious, School College University's books, Sports, Laws book, Drama etc. User can search their needed book by using search option. Then they can easily buy their books. Even if they want then they can sell their old books. The order confirmed by the book shop vendor. He also publishes books through the website. User pay their bill by credit card, debit card, mobile banking (Bkash, Rocket, Nagod) and Cash on delivery also. They can submit their book review. The website will have bookmarks option for users to save any books details in bookmarks list. In this system, admin maintain all the technical things. He tries his best to help the users. Employee maintain all official work.

Sequence Diagram:



Class Diagram:



Objective: A software process is a set of related activities that leads to the production of the software. These activities may involve the development of the software from a new idea or, modifying an existing system. There are many types of process models such as waterfall model, saw tooth model, spiral model and agile, etc. Among all of them, we have chosen the agile model. The main objective of our experiment is to select the agile model, describe the related roles and background causes for the selection of this model.

Procedure:

1) Study the Software Engineering process model to appropriate process model to develop your proposed system solution.

Answer: The Agile model adopts Iterative development. Each incremental part is developed over an iteration. Each iteration is intended to be small and easily manageable and that can be completed within one month. At a time one iteration is planned, developed, and deployed to the customers.

The time to complete an iteration is known as a Time Box. Within an iteration or time box, performed tasks or requirements are known as scope. Its development cycle is short and fast project visibility seen.

Rather than increase the iteration length to fit the chosen scope, scope reduces as the time box is always fixed in agile.

2) Present your arguments based on your analysis about why your selected method(s) is the best choice among all other methods to develop your proposed software.

Answer: The linear process model or waterfall model is more about a process, where one can see progress "flowing" through different phases. It is a sequential model that goes from requirement analysis, planning, implementation, testing, and production to maintenance. Being sequential, its approach cannot adapt to the frequent change of project scope. Requirements must be well understood. It is expensive for a dynamic environment where most of the web applications are dynamic. Client interaction is not so good as Agile offers.

When Agile is the base of development, it tends to deliver visibility, adaptability, accountability, and value at the beginning of the process and minimizes the risks during the project. Agile project management employs an iterative approach and is highly adaptable to frequent changes. The customer has frequent and early opportunities to see the work being delivered and to make decisions and changes throughout the development project.

Despite the disadvantages of the waterfall model, it is the most preferred and ideal model for stable environment software. But from the above discussion, we can say that as we are going to develop a web-based dynamic software so agile model is best.

3) Identify all the roles in the project management activities in software development. Describes the responsibilities of the role in the software development.

Product Owner:

Product Owner is a software development role for a person who represents the business and is responsible for working with the user group to determine what features will be in the product release.

He will make the final decision on all scope related decisions. Adding new requirements identified as being required to achieve the software product vision statement. Removing requirements that fall out of scope or backdated. Always be active in resolving any problems either with the software development team.

Project manager:

The Project Manager (PM) is responsible for knowing the "who, what, where, when, and why" of the software project.

Initially, he will develop the software project plan. According to the software project plan, lead and manage the software project team. If need requites project staff. Assigning tasks to project team members as well as have to ensure regular updates to senior management and clients.

Business Analyst:

Business requirements are the foundation for creating web and mobile applications. Lack of business analysts for some projects may lead to failure. They should understand the business needs, evaluate alternatives, and justify the recommended approach as part of preparing the business case. Forecast on expected revenue from the software.

Software Developer:

Development team members are responsible for designing and building the software products required by the project manager.

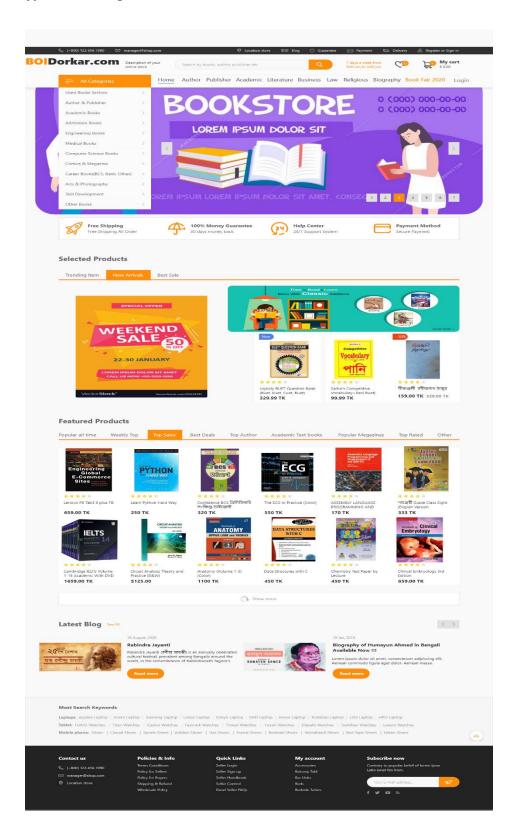
The development team member's role is analysis, planning, programming, and many other activities throughout the course of the project. Throughout the software testing life cycle, they review each other's work, including test specifications, defect reports, and test results. Performing user acceptance tests to ensure that the new software solution meets various quality assurance (QA) criteria.

UI/UX Design:

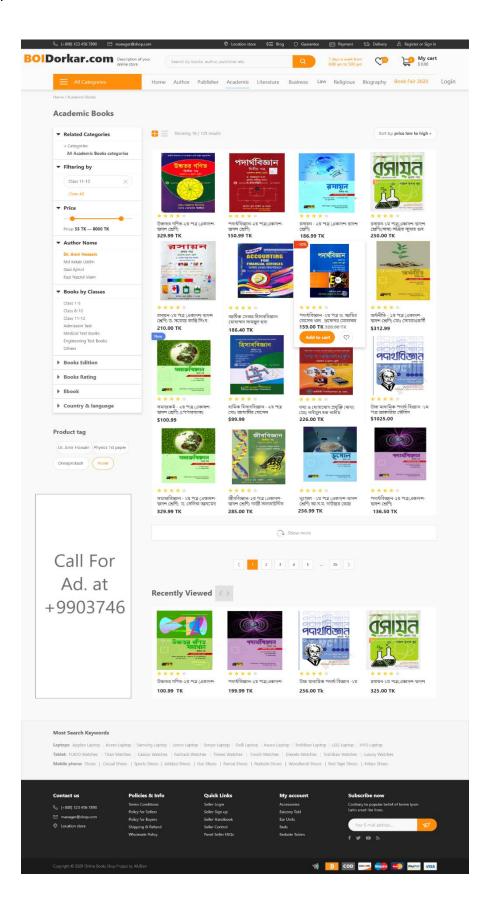
Objective: Design User Interface and User Experience of the Proposed Solution.

Tools/ Device: Adobe XD

Project Prototype: Home Page:



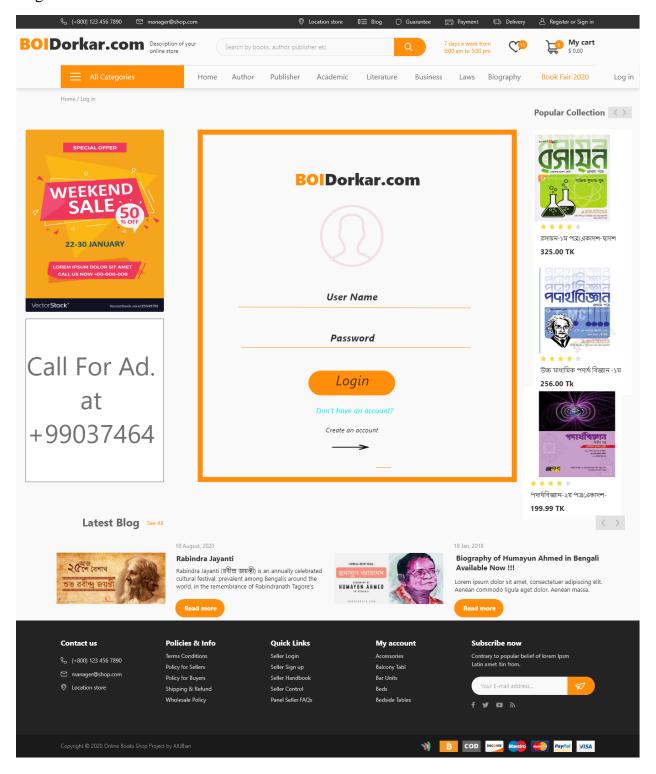
Books Category:



Books Details:



Log in:



Project Test Planning

Objective: Perform various techniques for testing using the testing tool: unit testing, integration testing, Blackbox testing, Whitebox testing, etc.

Tools/ Apparatus: Selenium

Procedure:

- 1. Select a particular system (Web/Desktop/Mobile/Device)
- 2. Identify various modules of the system so that they can be tested stand alone.
- 3. Prepare test cases of testing the selected elements of your identified software.
- 4. Perform the test according to your generated test case and produce a bug report which will helpful for the system developer to modify the system for improve system's quality.

Text Cases:

Project Name: Online Book Shop	Test Designed by: Nazmul, Munia, Minhazur, Tabassum			
Test Case ID: 1	Test Designed date: 02/09/20			
Test Priority (Low, Medium, High): High	Test Executed by:			
Module Name: Login & Registration	Test Execution date:			
Test Title: Create an account & verify login with valid username and password				
Description: Test website login & registration page				
Precondition (If any): User must have valid username and password				

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Go to the website 2.Go to the registration page 3. Enter Username 4. Enter password 5. Enter email 6.Enter phone number 7.Enter address 8.Click submit	Username: 111111111 Password: 12345 Email: abc@gmail.com Phone: 096656 Address: Dhaka	User should get a valid Username & Password		
1.Go to the website2. Enter username3. Enter password4. Click submit	Username: 111111111 Password: 12345	User should able to login into the application		

Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.

			Test Designed by:			
Shop			Mur	nia		
Test Case ID: 02			Toot	Designed date:	15 00 2020	
Test Case ID. 02			1680	Designed date.	13-09-2020	
Test Priority (Low, Medium,	High): High		Test	Fest Executed by:		
Module Name: Payment			Тос	Execution date:		
Option			Test	Execution date:		
Test Title: verify payment op	otion					
Description: Test website pay	ment page					
Day and Millian (If any). Illians						
Precondition (If any): User must have a valid payment account						
Test Steps	Test Data	Expected Resul	lts	Actual	Status	
•				D 1	(D /E 11)	
				Results	(Pass/Fail)	
	Account	User should pa	y			
1. Go to the website	number:	their bill		As expected,	Pass	
2. Enter account no	3456778822	into the applica	tion			
3. Enter Amount						
5. Enter i iniount	Amount: 200					
4. Click submit	Alliount, 200					
T. CHER SHOTHIT						

Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.

Project Name: Online Book Shop			st Designed by: unia		
Test Case ID: 03		Те	st Designed date:	15-09-2020	
Test Priority (Low, Medium,	High): High	Те	st Executed by:		
Module Name: Search Option			Test Execution date:		
Test Title: verify to find the	books by search op	otion			
Description: Test website in s	search page				
Precondition (If any): User n	nust have a valid a	ccount			
Test Steps	Test Data	Expected Results	Actual	Status	
			Results	(Pass/Fail)	
	Search: Novel				
1. Go to the website	Rabindranath, Onnoprokash	User should find their books into the application	As expected,	Pass	
2. Enter search bar					
3. Click submit					

Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.

Project Name: Online Book Shop		Tes Mu	t Designed by: nia		
Test Case ID: 04			t Designed date:	15-09-2020	
Test Priority (Low, Medium, High): High		Tes	Test Executed by:		
Module Name: Third-party Book Shop		Tes	Test Execution date:		
Test Title: verify book publishing					
Description: Test website how a ge publish their books through the pub					
Precondition (If any): Must be a re	gistered user				
Test Steps	Test Data	Expected Results	Actual	Status	
			Results	(Pass/Fail)	
Go to the website & Login 1. to Portal Fill up book publish 2. form 3. Click submit	Book name: Let Us C Author Name: Yashavant Kanethak Edition:13th Publication: BPB publication	Seller should publish their books through the application			

Project Name: Online Book Shop			est Designed by: unia			
Test Case ID: 05			est Designed date:	15-09-2020		
Test Priority (Low, Medium, High): High			Test Executed by:			
Module Name: Books Review and Rating			Test Execution date:			
Test Title: verify Review and Ra	ating option					
Description: Test website of Rev	view and Rating page					
Precondition (If any): Must be a	Precondition (If any): Must be a registered user					
Test Steps	Test Data	Expected Results	Actual	Status		
			Results	(Pass/Fail)		
1. Go to the website	User name:	User should rate the books				
2. Enter user name	Mustique Rahman	into the application				
3. Enter password	Password: 456789					
4. Go to rating page	Rating and Review: ****					

Post Condition: Top rated books should show in popular books section.