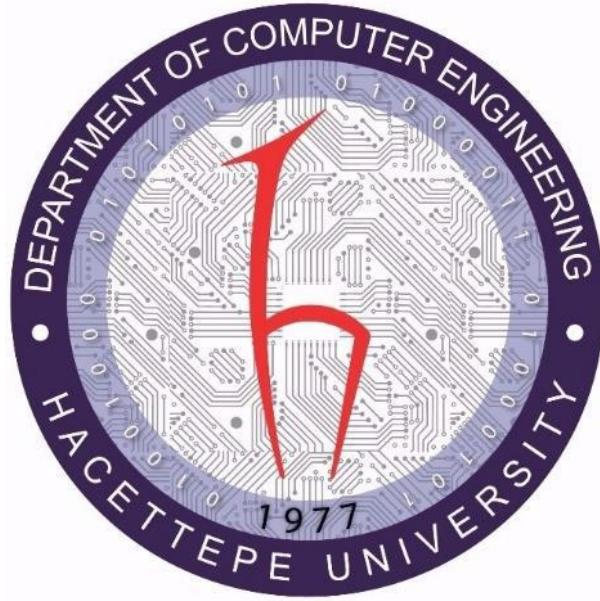


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Supporting Requirements Specification	Date: 28/03/2020



## HACETTEPE UNIVERSITY COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

**BBM384**

DEL2

### System-Wide Requirements Specifications

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**Project Name** : PATATES

**Course** : BBM384 Software Engineering Lab.

**Due Date** : 06.04.2020

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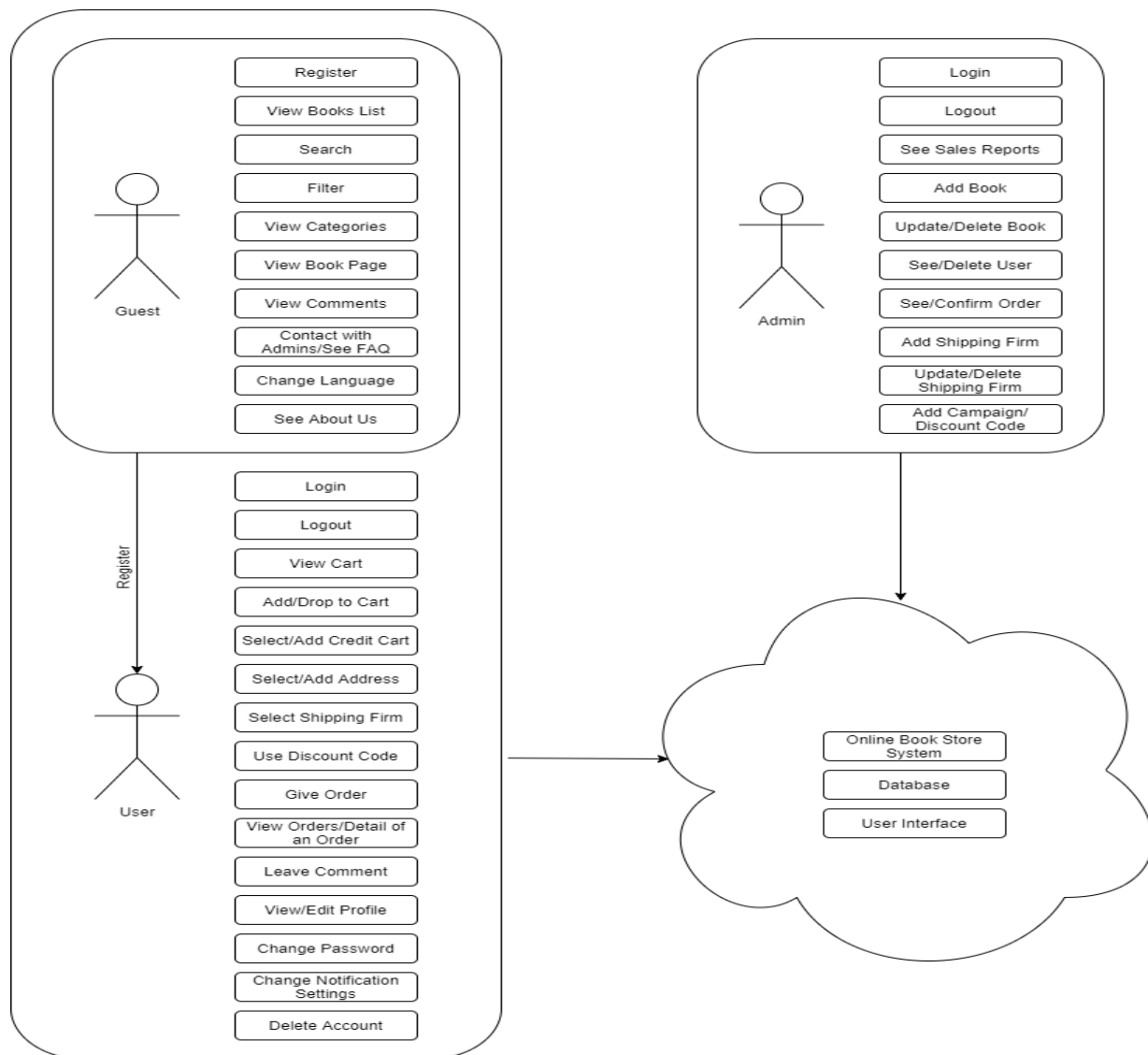
# PATATES

## System-Wide Requirements Specification

### 1. Introduction

The SRS (System-Wide Requirements Specification) document includes set of informations about describing the behaviour and features of system or software application before the software design phase. The main purpose of this document is that establish the requirements and scope of the work so that this document avoids need to redesign later. It contains all informations about system, interfaces, constraints and rules.

### 2. System-Wide Functional Requirements



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Use Case Name	Use Case Number	Use Case Code
Register	1	OBS-UC-GUE-001
Login	2	OBS-UC-USR-001
Logout	3	OBS-UC-USR-002
View Books List	4	OBS-UC-GUE-002
Search by Author	5.1	OBS-UC-GUE-003-1
Search by Book Name	5.2	OBS-UC-GUE-003-2
Filter Searching	6	OBS-UC-GUE-004
View Categories	7	OBS-UC-GUE-005
View Book Page	8	OBS-UC-GUE-006
View Comments	9	OBS-UC-GUE-007
View Cart	10	OBS-UC-USR-003
Add to Cart	11	OBS-UC-USR-004
Drop from Cart	12	OBS-UC-USR-005
Select/Add Credit Card.	13	OBS-UC-USR-006
Select/Add Address	14	OBS-UC-USR-007
Select Shipping Firm	15	OBS-UC-USR-008
Use Discount Code	16	OBS-UC-USR-009
Give Order	17	OBS-UC-USR-010
View Orders/ Detail of an Order	18	OBS-UC-USR-011
Leave Comment	19	OBS-UC-USR-012
View Profile/ Edit Profile	20	OBS-UC-USR-013
Change Password	21	OBS-UC-USR-014
Change Notification Settings	22	OBS-UC-USR-015
Contact with Admins/ See FAQ	23	OBS-UC-GUE-008
Change Language	24	OBS-UC-GUE-009
See “About Us”	25	OBS-UC-GUE-010
Delete Account	26	OBS-UC-USR-016

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See Sales Reports	27	OBS-UC-ADM-001
Add Book	28	OBS-UC-ADM-002
Update/Delete Book	29	OBS-UC-ADM-003
See/Delete User	30	OBS-UC-ADM-004
See/Confirm Order	31	OBS-UC-ADM-005
Add Shipping Firm	32	OBS-UC-ADM-006
Update/Delete Shipping Firm	33	OBS-UC-ADM-007
Add Campaign/Discount Code	34	OBS-UC-ADM-008

## 2.1 Auditing

All user actions like giving order, adding book to cart etc. are recorded. Admins can achieve reports about current online users, total profits at specific times, orders, some statistics, shopping carts, remaining stocks etc.

## 2.2 Authentication

Registration and login process need some authentication. For registration, e-mail address and phone number should be unique. For successful login, e-mail address and password should be match. Unauthorized persons cannot perform some operations like cart operations or giving order etc.

## 2.3 Reporting

All related logs are reported to admins to detect unexpected operations and monitor the system.

# 3. System Qualities

## 3.1 Usability

Every application must be easy to use for users so that while we developing the application, we considered those:

- Each page contain a link to main page.
- Each page contain very few buttons etc. Because of avoiding mess and make it simple. Some options are located in pop-ups or dropdown menus.
- Each page designed with considering UX/UI rules.
- Users can give order or do anything s/he want without user's manual.

## 3.2 Reliability

- We take back-ups regularly and this will avoid data losses. Also this improve consistency.
- Passwords are kept in Firebase and also they are encrypted. Admins or developers cannot see passwords.

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- Users are automatically logout from the application after a specific times up.
- System doesn't leave ant cookie on customers device.
- Backend systems are are only accessible for administrators and developers.
- Tests and backps will be made at regular specific times so that crashes and problems will be detected immediately.

### 3.3 Performance

- All pages will be loaded in less then 3 seconds if connection is proper.
- System can handle up to 1000 user at a time.
- If some request or process cannot get response in specific time, user and admins will be warned.

### 3.4 Supportability

- Users will be able to contact with admins via e-mail or Contact Page.
- Admins will be able to see and update every information and start any process when a user need to.
- User manuel will be created for users.
- System will be able to easy to update, easy to add new features and easy to fix the bugs.
- System will be configured to be scalable, maintainable, adaptable and compatible.

## 4. System Interfaces

### 4.1 User Interfaces

The user interface must be simple and easy to use. It should be respond to all requirements of user. User should be enjoy and motivated to shopping without need a help. The user interface of application should be compatible with all devices with different screen sizes.

#### 4.1.1 Look & Feel

We are trying to make the interface attractive and motivate the user to buy more books. To do that, we choose harmonious colors, smooth page transitions etc.. User must be feel good and motivated. Also we consider the functionality of pages. Every pages are designed by carefully.

#### 4.1.2 Layout and Navigation Requirements

There will be navigation bar at the bottom of the application and some other directions are accessible from the three dot symbol which located at the top-right of the page. Users will be able to switch easily to Main Page, Categories, My Library, Cart and also My Account, Orders, Comments, Help, About Us and Setting pages.

#### 4.1.3 Consistency

We designed the application as simple as possible and we named pages and buttons properly. User will be able to understand and expect what will happen after clicking somewhere. Also application is compatible for different screen sizes.

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#### 4.1.4 User Personalization & Customization Requirements

There are three different roles : guest, user and admin. Guests and users will see same main page and search pages. But of course users will see their name at screen to increase personalization. Guests cannot access any cart or order pages. On the other hand admins will see completely different pages from users and guests.

## 4.2 Interfaces to External Systems or Devices

### 4.2.1 Software Interfaces

It is very important to put the technologies used into practice as well as to implement the ideas considered on the application. Because every developer wants their application to have a strong infrastructure and to respond to the requests of the users in the best way. We, as a Patates team, chose technologies that we can achieve harmony in the best way and we decided to use it in this application. The technologies used are:

1-) Java Spring Framework on Backend: Thanks to its MVC Architecture, it enables the application to be divided into layers in terms of responsibilities such as interface, data, work-processing.

2-) Flutter on Frontend: It is an open source mobile application development SDK that has been very popular in recent years. It is very useful due to the ease of code writing, wide widget infrastructure and development of two separate operating systems (Android, IOS) with a single code.

3-) Heroku on Cloud API: Heroku is a cloud computing application infrastructure service provider. It enables us to move our web-based applications (deploy, manage and scale) developed with Heroku, JavaScript, Ruby, Java, PHP, Python, Golang, Scala and Clojure, which we can express as Platform as a Service (PaaS). Thanks to the wide features offered by Heroku, we have published an API on the cloud for requests for our application.

4-) Firebase for Analytics, Database, Notification, and Verification: We can say that it is the savior of those who developing application with its comprehensive features. With the Firebase owned by Google, we can easily handle the features such as accessing the analytical data required for our application, creating the database where the information will be stored, sending notifications to the users in the application, and verifying e-mail.

5-) Swagger on Rest API Documentation: One of the most important needs in web API development is the need for documentation. Because, what API methods do and how they are used must be understandable in the documentation. For this reason, we used Swagger to provide an interface and documentation for Rest APIs.

6-) Elastic Search on in-App Searches: Maybe Elastic Search is one of the best examples that comes to mind when it comes to searching through indexes and producing results very quickly. It is important to be able to satisfy the users who will use the application and to leave positive effects. The fact that the customer can reach the desired result directly and quickly among thousands of book options is of great importance for their satisfaction. That's why we have implemented Elastic Search into our application.

### 4.2.2 Hardware Interfaces

There is no hardware interfaces.

### 4.2.3 Communications Interfaces

There is no communication interfaces.

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## **5. Business Rules**

### **5.1 Products in Cart Rules**

#### *5.1.1 Maximum Book in Cart*

Users cannot add more than 10 different book to their cart.

#### *5.1.2 Maximum Number of Same Book*

Same book cannot be added to the cart more than 10 pieces.

### **5.2 Order, Payment and Discount Rules**

#### *5.2.1 Free Delivery*

Free shipping for purchases more than 100 TL.

#### *5.2.2 Discount*

Users will get 20 TL discount for every purchases costs 400 TL

#### *5.2.3 Discount Codes*

A user cannot use a discount code more than one time.

### **5.3 Saved Information Rules**

#### *5.3.1 Saved Address Number*

A user cannot add address more than 5.

#### *5.3.2 Saved Credit Card Number*

A user cannot add more than 5 different credit card.

### **5.4 Signup and Login Rules**

#### *5.4.1 Wrong Login Limitation*

After 5 unsuccessful login, password mail will be sent.

#### *5.4.2 Unique E-mail*

Every user must have unique e-mail address.

## **6. System Constraints**

The application can be used only as a mobile application. Also can be used in both iOS and Android systems. It is cannot be used as desktop or web application. The internet connection is required for the application.

## **7. System Compliance**

For now, we have not been working on licensing, copyrights, standards etc.

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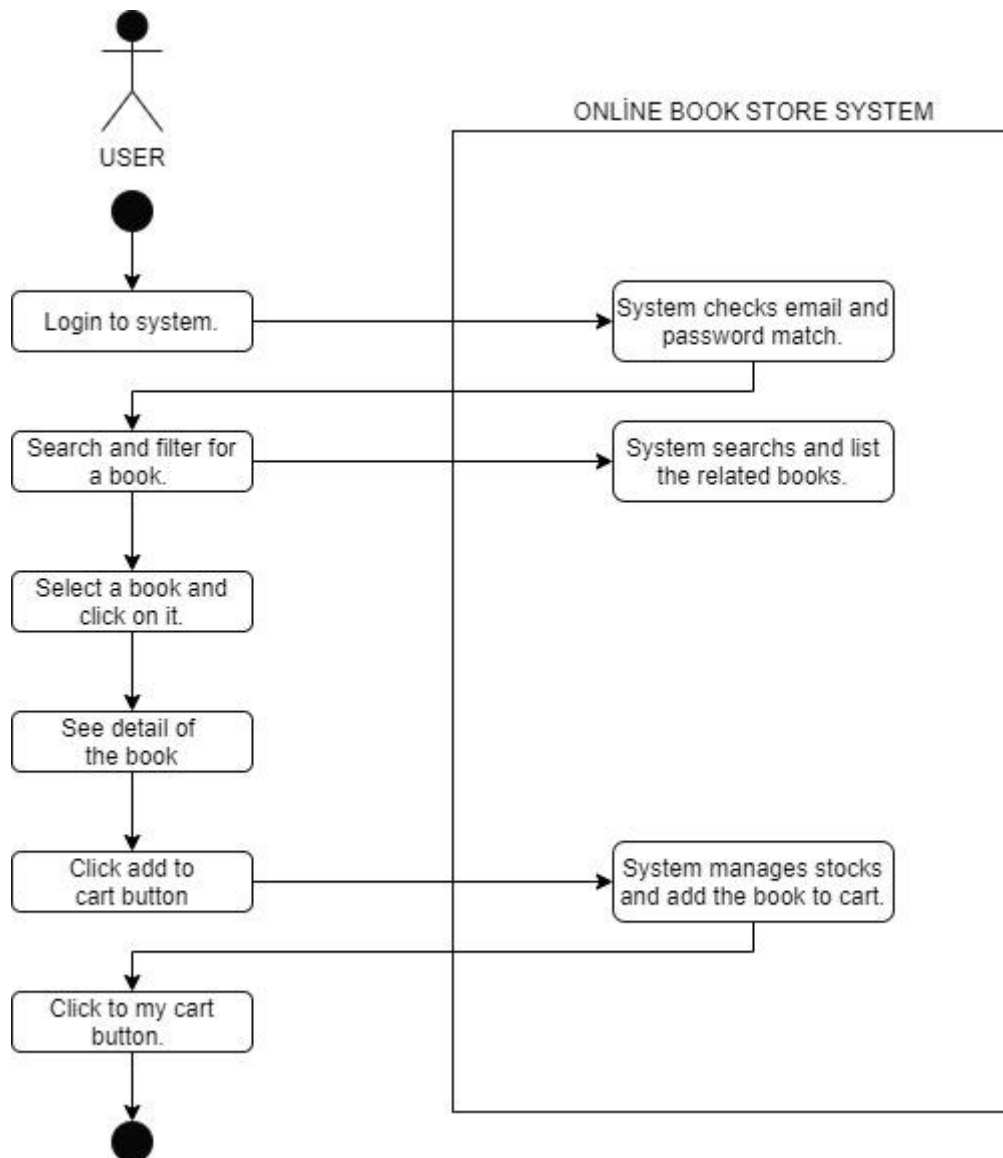
## 7.1 Licensing Requirements

## 7.2 Legal, Copyright, and Other Notices

## 7.3 Applicable Standards

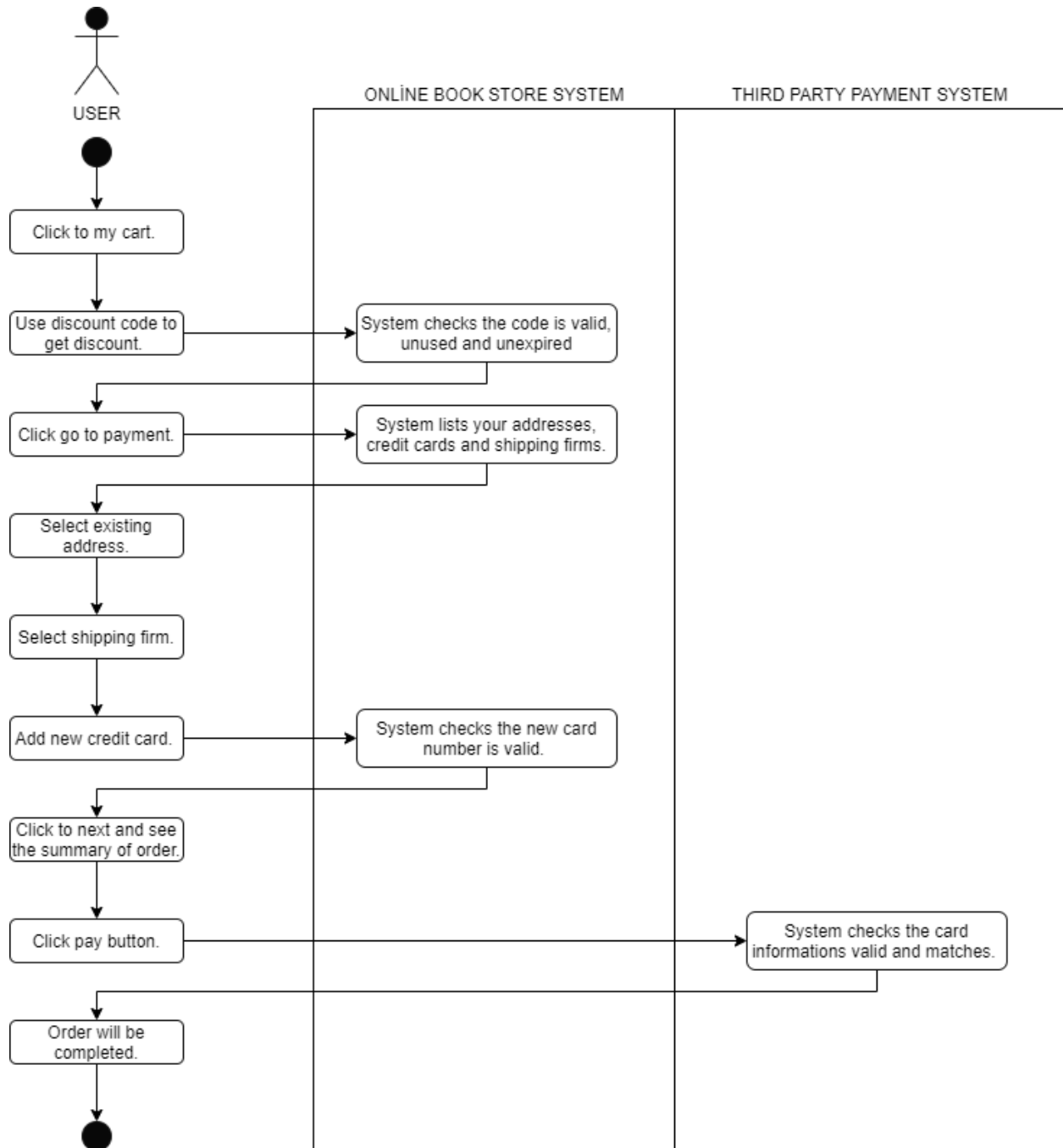
# 8. System Documentation

- Activity Diagram 1 : Registered user adds item to cart.



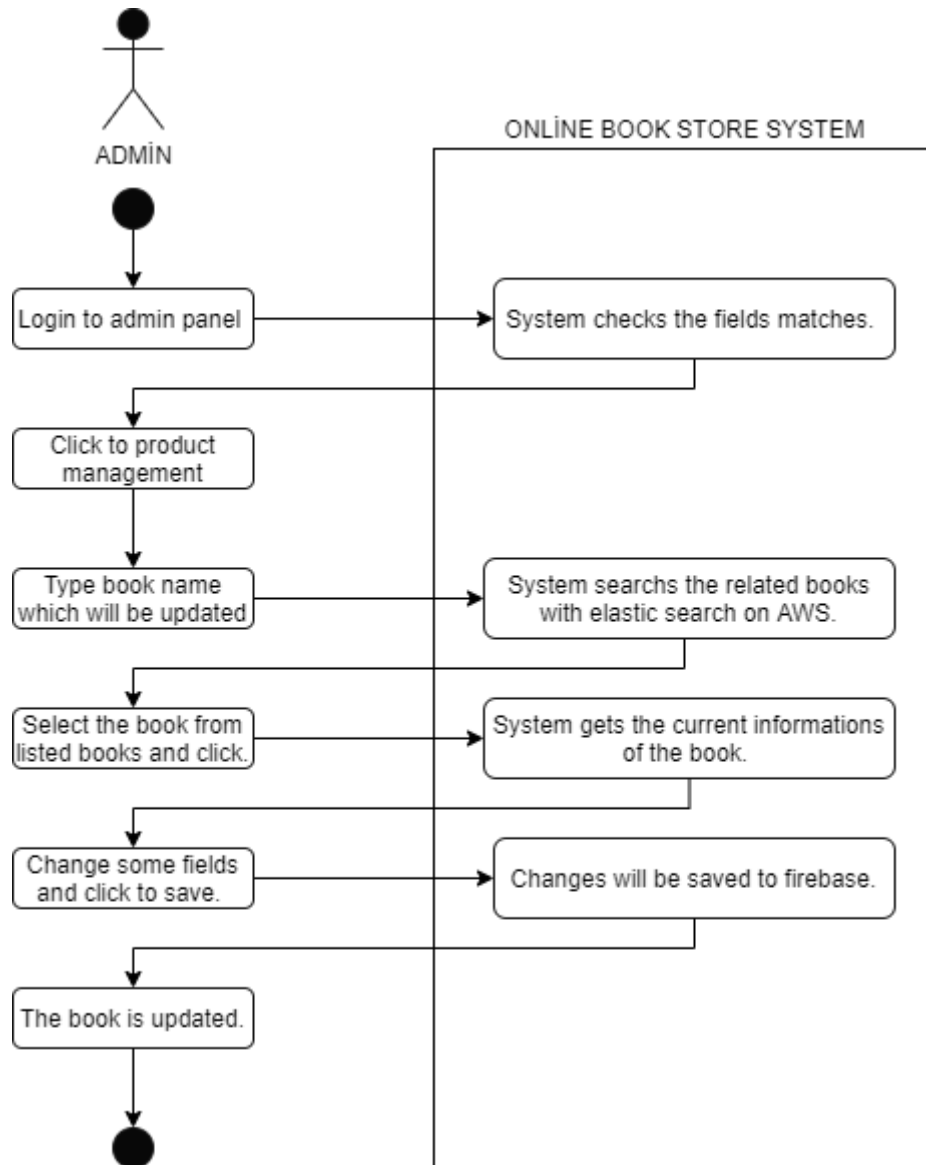


- Activity Diagram 2 : Logged in user gives order.



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- Activity Diagram 3 : Admin updates an existing book.



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### Requirements-Test Cases Traceability Martix

Req_ID		TC1	TC2	TC3	TC4	TC5	TC6	TC7	TC8	TC9	TC10	TC11	TC12	TC13	TC14	TC15	TC16	TC17	TC18	TC19	TC20	TC21	TC22	TC23	TC24	TC25	TC26	TC27	TC28	TC29	TC30	TC31	TC32	TC33	TC34	TC35	
REQ_1	Guest should be able to register.	X																																			
REQ_2	User/admin should be able to login.		X																																		
REQ_3	User/admin should be able to logout.			X																																	
REQ_4	User/guest should be able to see books				X																																
REQ_5	User/guest should be able to see more options			X														X		X	X	X	X	X	X	X	X										
REQ_6	User/guest should be able to see Help section.																							X			X										
REQ_7	User/guest should be able to see about us section.																									X											
REQ_8	User/guest should be able to see FAQ.																							X													
REQ_9	User/guest should be able to change language.																								X												
REQ_10	User/guest should be able to see categories				X			X																													
REQ_11	User/guest should be able to see book details.				X				X																												
REQ_12	User/guest should be able to see comments.				X				X																												
REQ_13	User/guest should be able to search book.				X	X		X																													
REQ_14	User/guest should be able to filter the search.				X	X	X	X	X																												
REQ_15	User should be able to contact with admins.		X																					X													
REQ_16	User should be able to change notification settings.		X																				X														
REQ_17	User should be able to delete account.		X																									X									
REQ_18	User should be able to see my profile section.		X																		X																
REQ_19	User should be able to update my profile section.		X																		X																
REQ_20	User should be able to change password.		X																			X															
REQ_21	User should be able to see library.		X		X			X																													
REQ_22	User should be able to add book to cart.		X		X			X	X			X																									
REQ_23	User should be able to see cart.		X								X																										
REQ_24	User should be able to change number of books in cart.		X		X			X	X			X	X																								
REQ_25	User should be able to delete book from cart		X		X			X	X		X		X																								
REQ_26	User should be able to add a book to favourites.		X		X			X	X																												
REQ_27	User should be able to use discount code.		X		X			X	X		X						X																				
REQ_28	User should be able to select existing address.		X		X			X	X		X				X																						
REQ_29	User should be able to add new address.		X		X			X	X		X				X																						
REQ_30	User should be able to select existing credit card.		X		X			X	X		X			X																							
REQ_31	User should be able to add new credit card.		X		X			X	X		X			X																							
REQ_32	User should be able to select shipping firm.		X		X				X		X					X																					
REQ_33	User should be able to see order summary.		X		X				X		X																										
REQ_34	User should be able to give order.		X		X				X		X					X		X																			
REQ_35	User should be able to see past orders.		X														X	X																			
REQ_36	User should be able to see past order detail.		X														X	X																			
REQ_37	User should be able to make comment.		X						X								X		X																		
REQ_38	Admin should be able to see sales reports.		X																									X									
REQ_39	Admin should be able to switch mounthly reports.		X																									X									
REQ_40	Admin should be able to add new product.		X																										X								
REQ_41	Admin should be able to update existing book.		X																										X	X							
REQ_42	Admin should be able to delete existing book.		X																										X	X							
REQ_43	Admin should be able to add new discount code/campaign		X																										X								X
REQ_44	Admin should be able to see user profile.		X																													X					
REQ_45	Admin should be able to delete a user.		X																					</													

FeatureID		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14
F1	Login and Register	D													
F2	Admin add delete update book	D	D												
F3	Admin manages accounts	D		D											
F4	Add book to cart	D	R		D		R	R							
F5	Buy books	D	R		D	D					R	R			
F6	Filter books		R		R		D								
F7	Search books		R		R		D	D							
F8	Rate books	D							D						
F9	Wish lists	D								D					
F10	Best seller offers							R			D				
F11	Admin manage payment module											D			
F12	Admin manage shipping	D											D		
F13	Email notifications	D												D	
F14	Change application language														D

\*Since our vision and requirements change and improve, the previous table will provide more consistent information.

