HACETTEPE UNIVERSITY

DEPARTMENT OF COMPUTER ENGINEERING

BBM384 Software Engineering Laboratory

Online Book Management System

Software Design Document

BOOKIFY

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Bookify
Software Design Description

1.Revision History

Version	*Date*	*Author*	*Change Description*
1.0.0.0	19.05.2020	Ayyıldız Tim	Initial version of document

2. INTRODUCTION

2.1. Purpose and Scope

The purpose of this document is to describe and visualize the architecture and system design of Bookify by using different viewpoints. This document includes a structural overview of all data, modules and interfaces. Also this document describes the system more clearly with ER diagrams and sequence diagrams.

2.2. Document Overview

This document Consists of 5 Topics:

System Overview:

It includes general overview of the system

Definitions, Acronyms, and Abbreviations:

Definitions, Acronyms, and Abbreviations which we used in our system

References:

The References which is used in this document

Design Constraints and Decisions:

The constraints of our system and the decisions which we have made in our bookify system.

Design Details:

The Design details of the system in term as diagrams

Requirements Traceability:

The Traceability of our requirements

Annexes

Our system is designed as a web application that can be easily used by any user. Our system developed on MVC architecture is a web application that includes Postgresql as a database, Java Spring, JPA Hibernate as an ORM tool, and React.js as front-end.

2.3.Definitions, Acronyms, and Abbreviations

Term/Acronym	*Definition*
MVC	Model View Controller
JS	Javascript
SQL	Structured Query Language
CRUD	Create,Read,Update,Delete
JavaSpring Boot	JavaSpring Boot
ER	Entity Relationship
API	Application Programming Interface
IEEE	Institute of Electrical and Electronics Engineers
IDE	Integrated Development Environment
REST	Representational state transfer
SRS	System Requirements Specification
UML	Unified Modeling Language
DBMS	Database Management System
Output	Anything written to Info is output
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheet

2.4. References

All versions of the project were performed in accordance with the IEEE Software Engineering Standards Committee, "IEEE Std 10161998, IEEE Recommended Practice for Software. This document also refers to the project vision document, software requirement document and design requirement document.

3. Design Constraints and Decisions

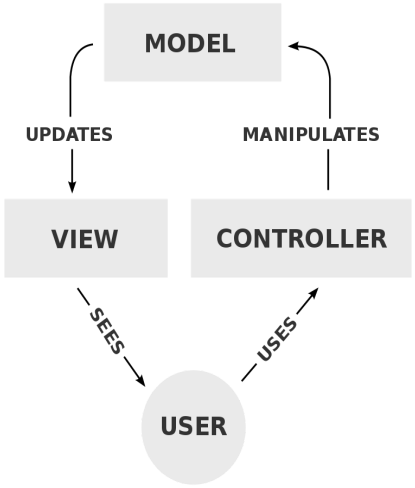
The Bookify application is realized as a single page web application which is written in Reactjs. The system will use components as building blocks and it will not load a whole HTML page at each page action. Our backend system is implemented with the MVC architecture and uses PostgreSQL as DBMS.

The performance of the frontend part depends on clients processing power and it is in most cases very efficient and fast.

The backend handles each user request by opening a new thread for each user. Therefore performance of our backend is usually not a problem in a low user base. It will need to get scaled as the user number increases.

The actual bottleneck of our performance is the internet connection speed between frontend and backend service. This is mostly out of control so it mostly depends on users connection stability and connection speed. But it can be somehow controlled by using caching methods or service workers at the client side of our Bookify Application.

4. Design Details

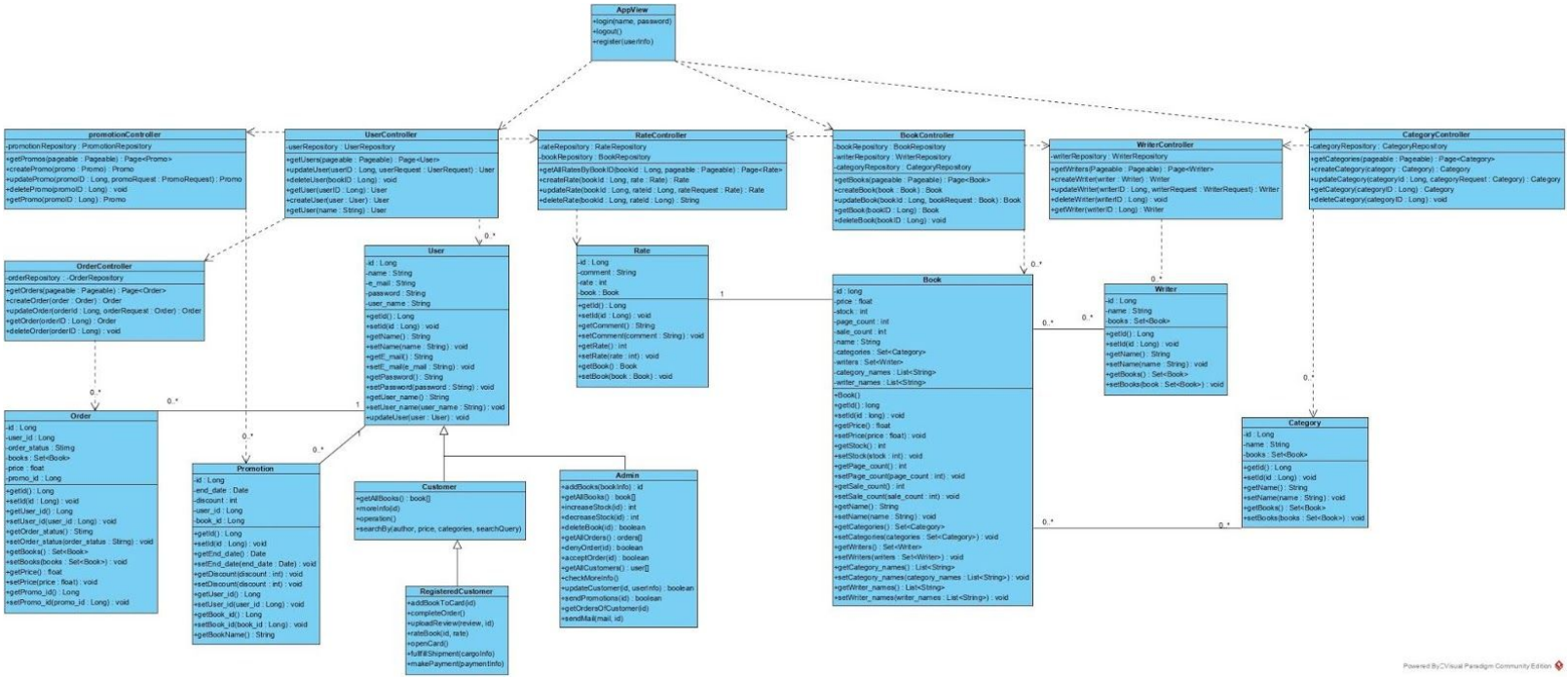


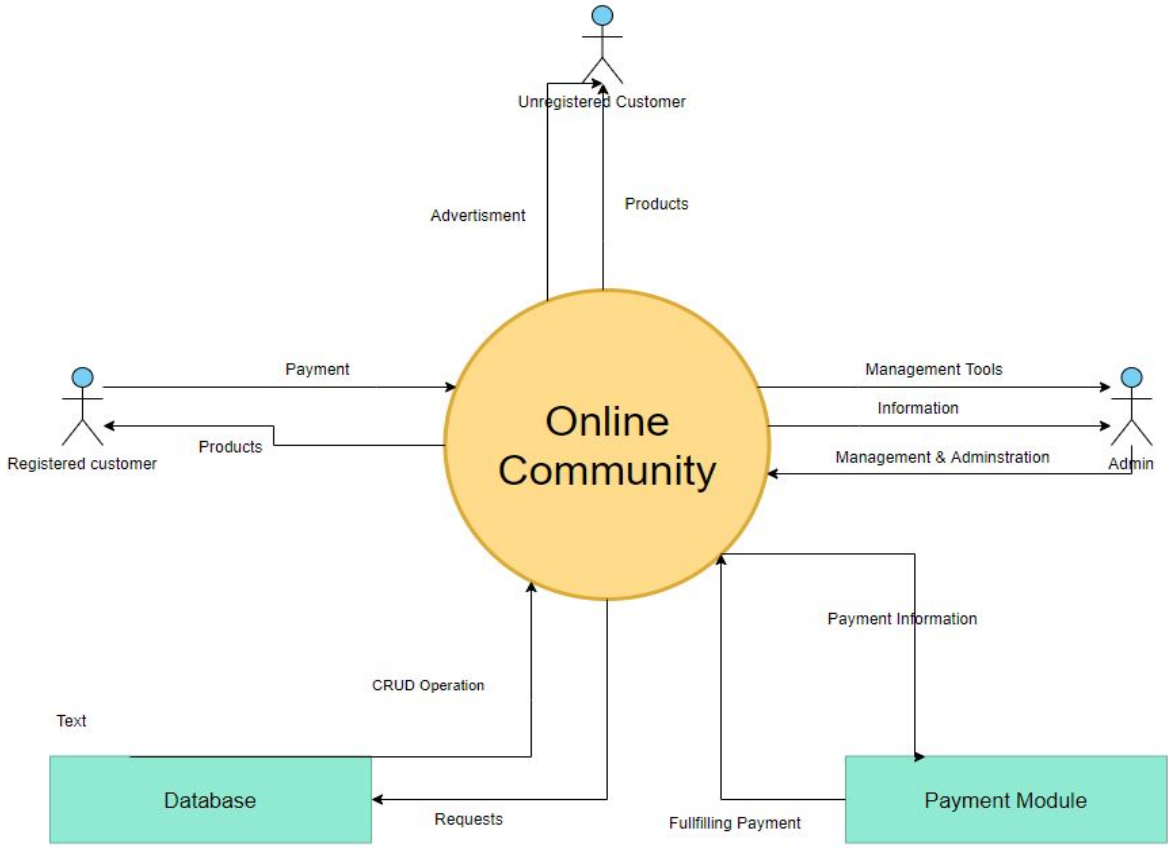
In this part of SDD, the following parts will be provided with detailed description and diagrams.

In this project, MVC design model is used in general. While trying to stick to 3 basic structures such as Controller, View and Model, the control mechanism has been revised in accordance with the project. In this way, changes to the software can be performed more quickly and more efficient code will be created.

4.1. Software Components

Class Diagram of our system is following: Also a JPG file is included in Class_Diagram.jpg.

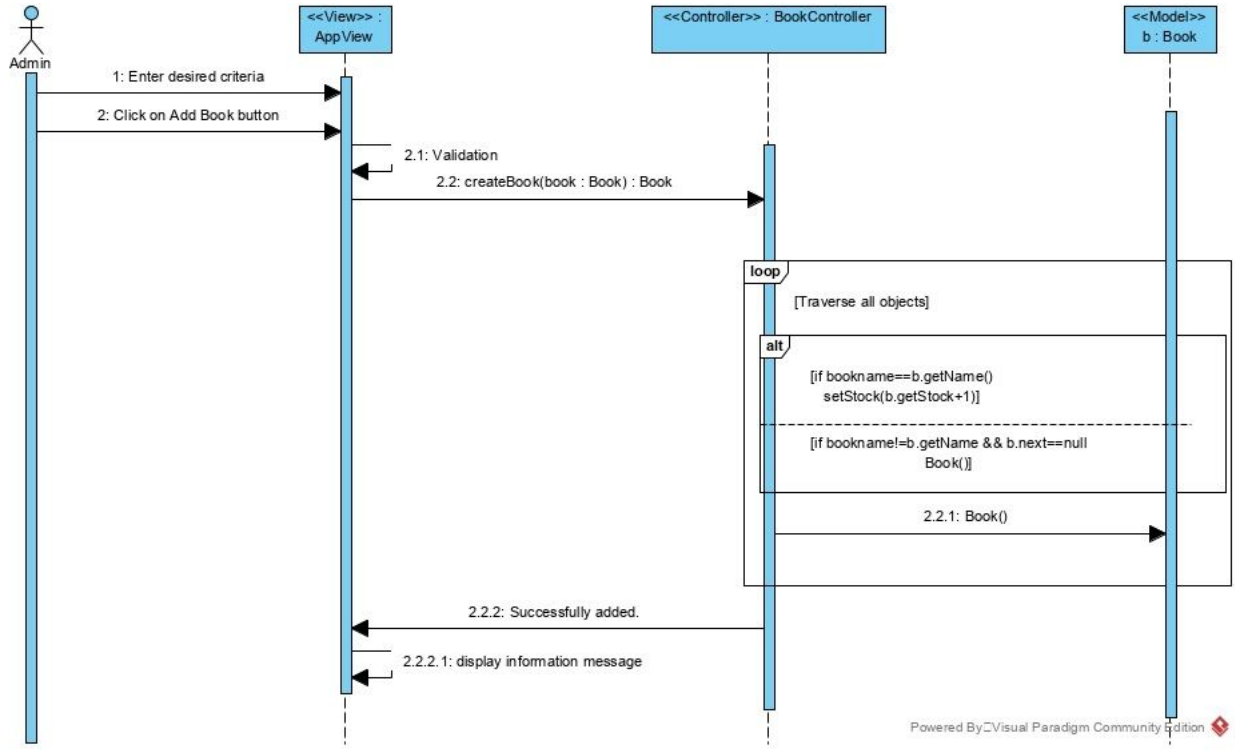




4.2. Software Behavior

4.2.1 Sequence Diagrams:

4.2.1.1 Add Book:



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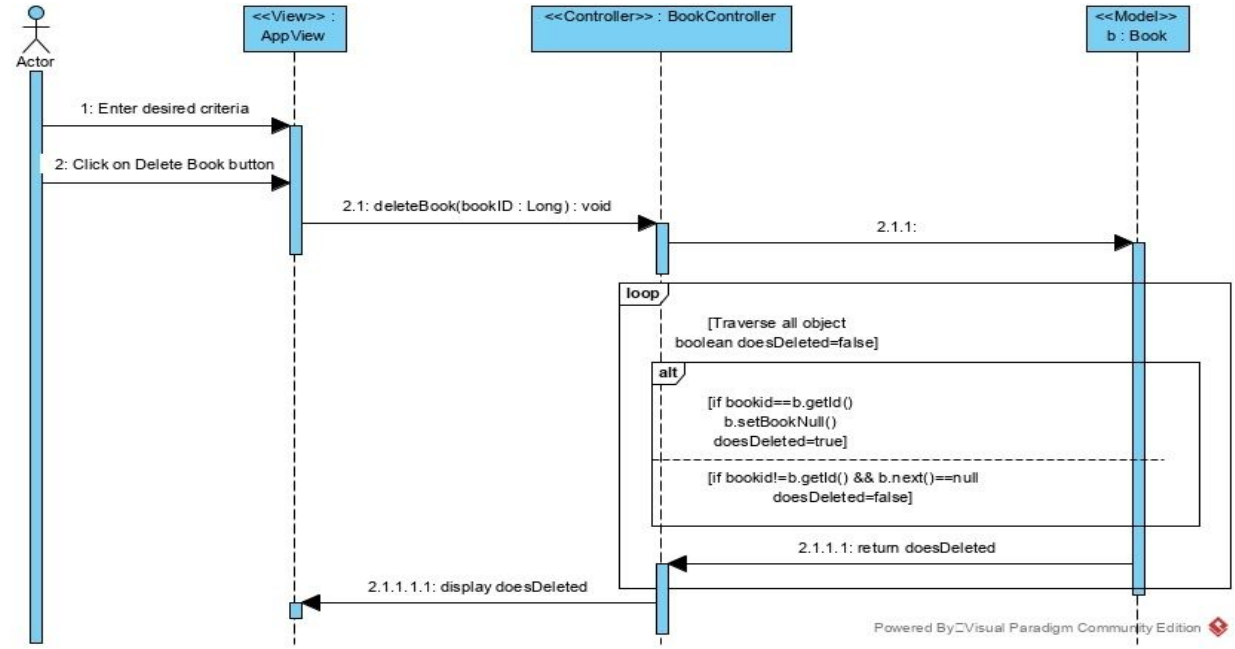
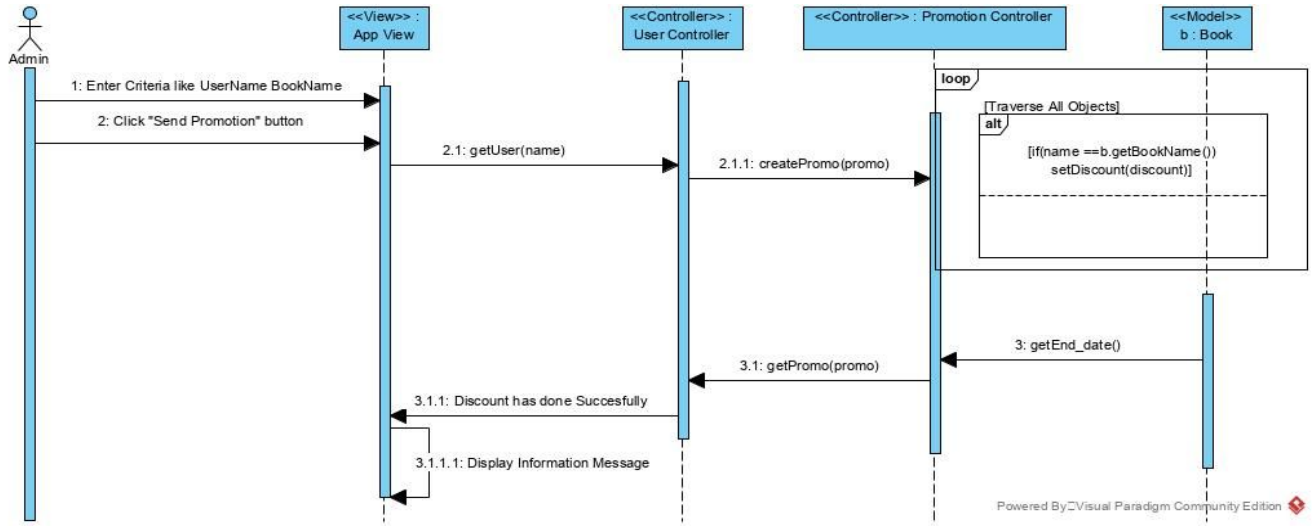


4.2.1.3 Send Promotion:



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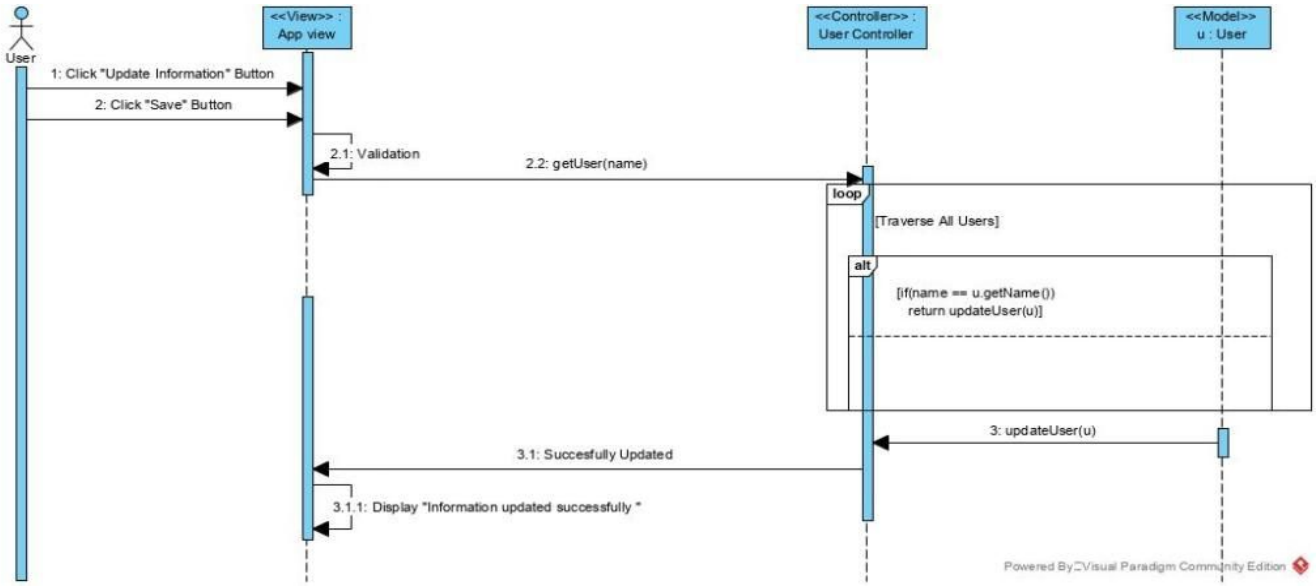
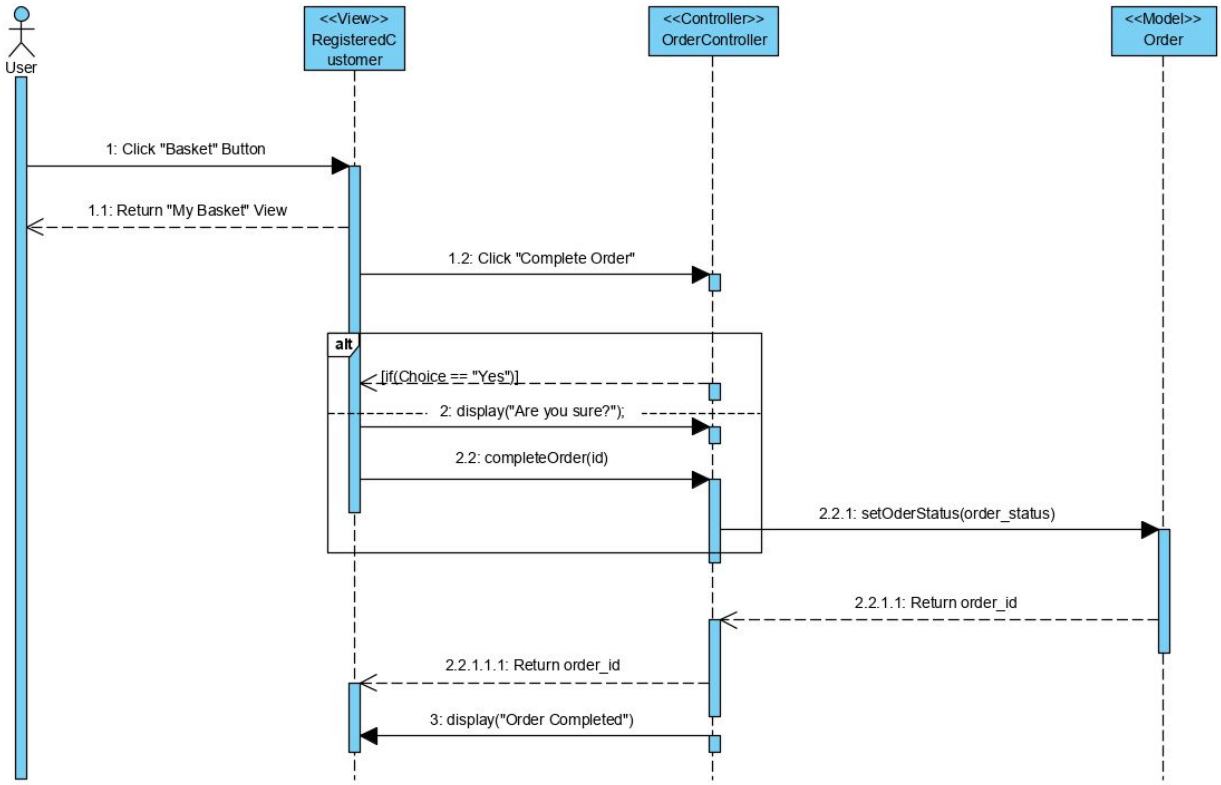
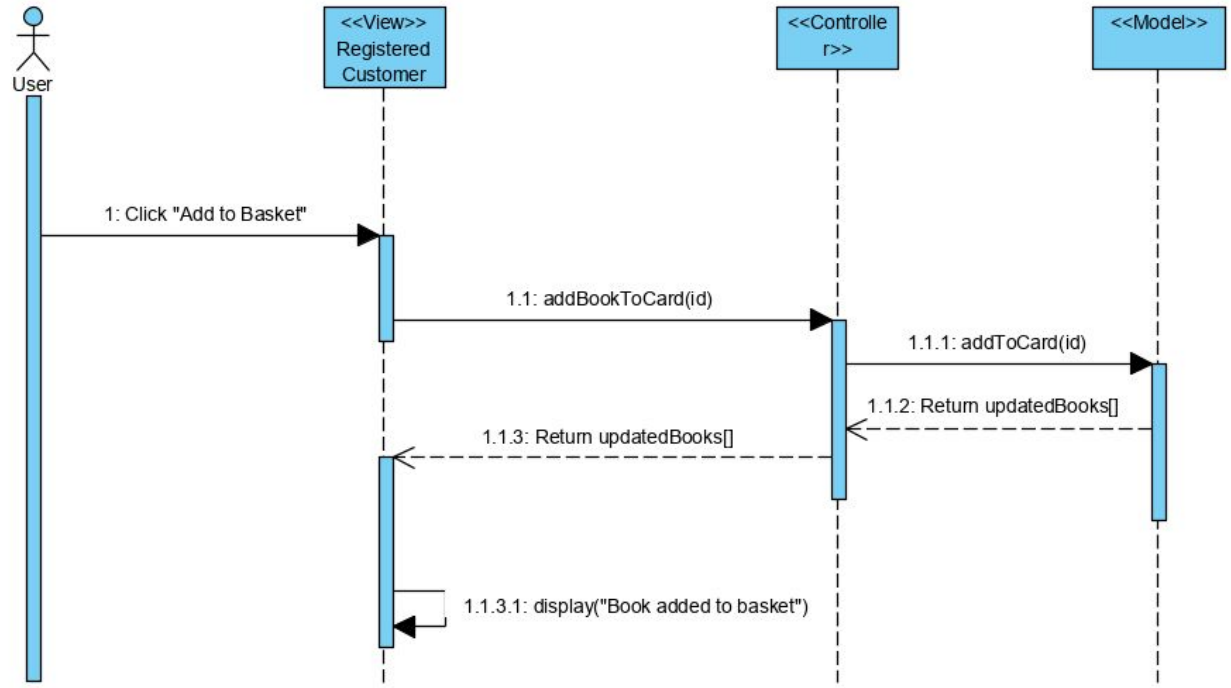


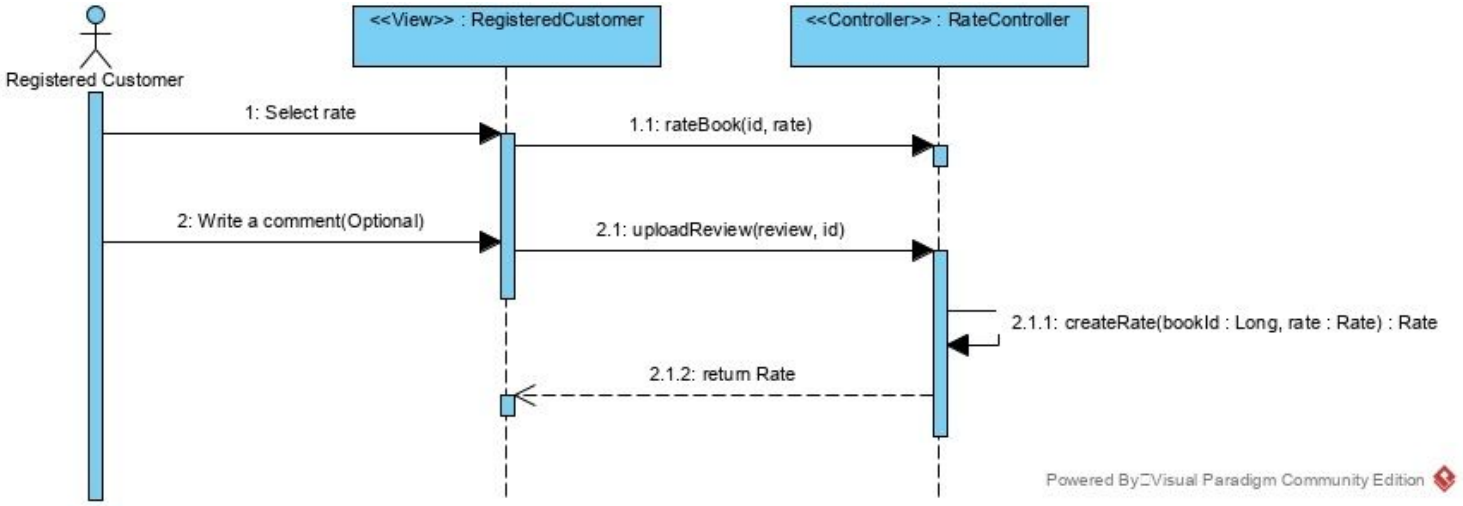
4.2.1.5 Complete Order:



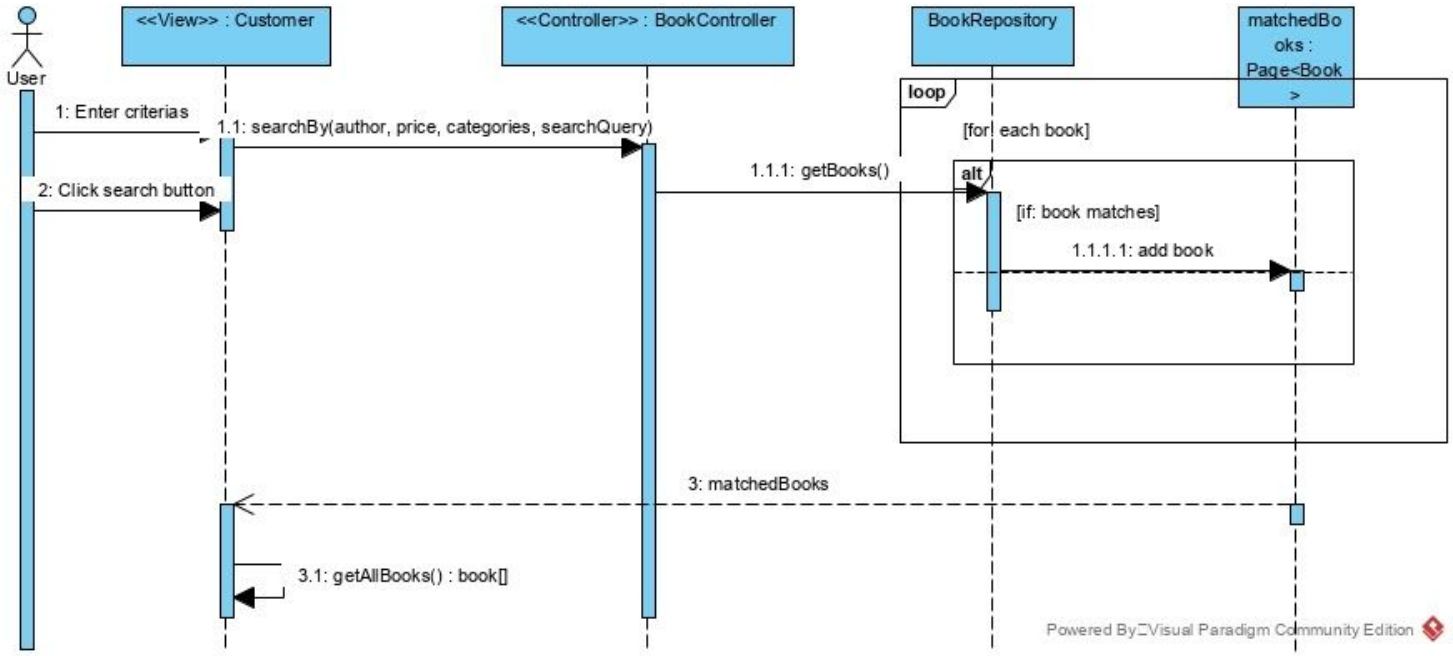
4.2.1.6 Add to Basket:



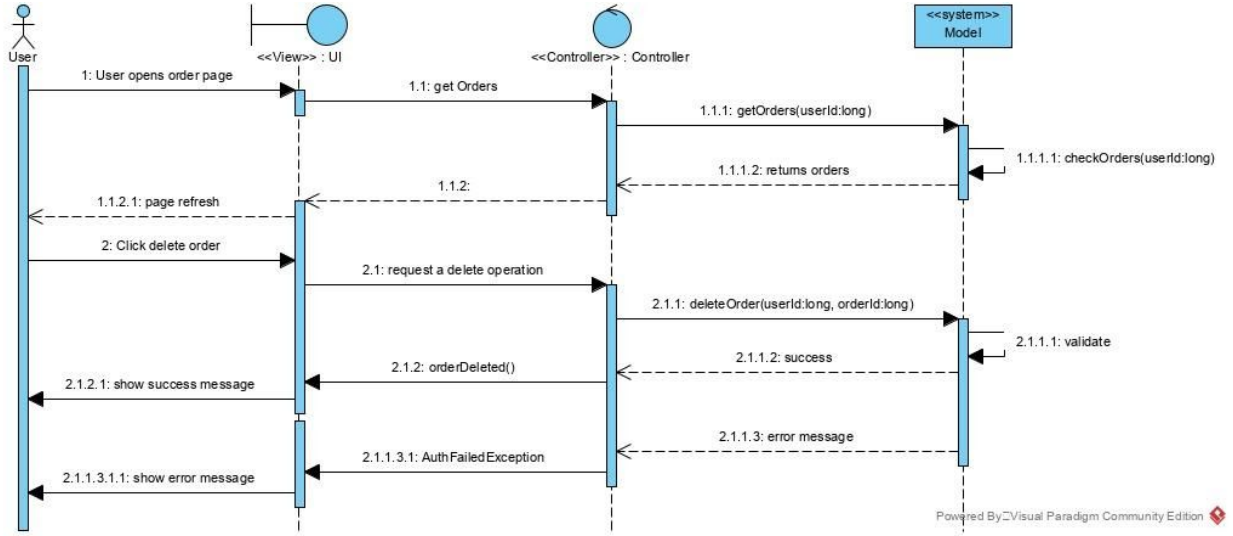
4.2.1.7 Rate/Review Book:



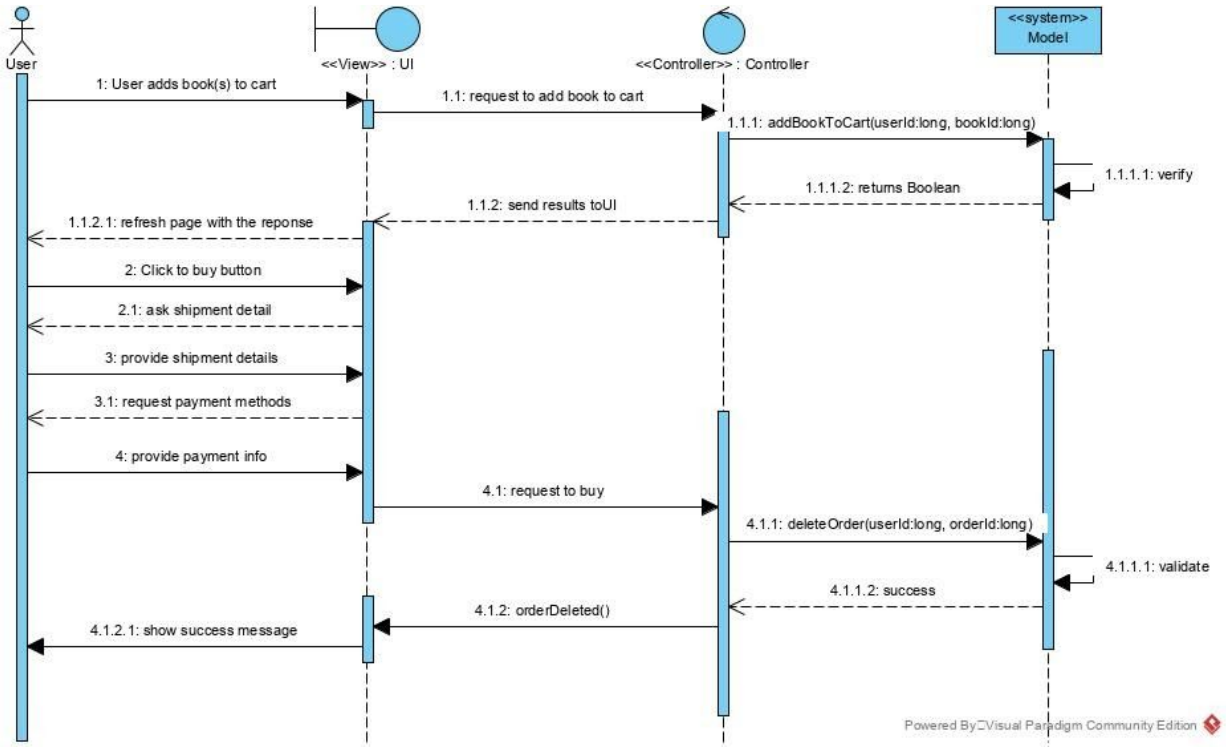
4.2.1.8 SearchBook:



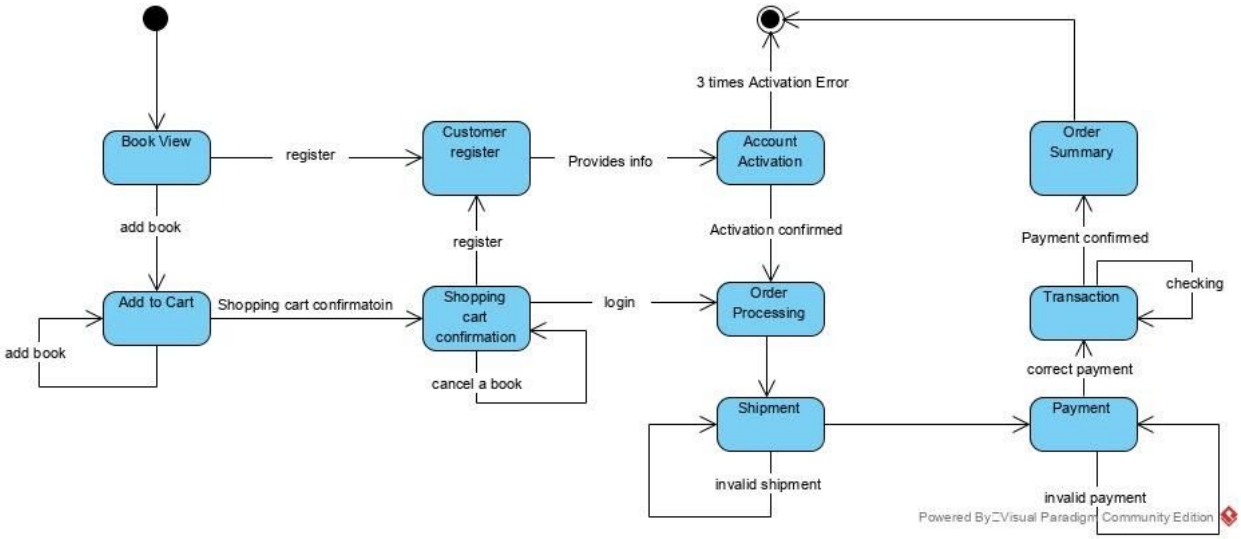
4.2.1.9 : Manage Orders



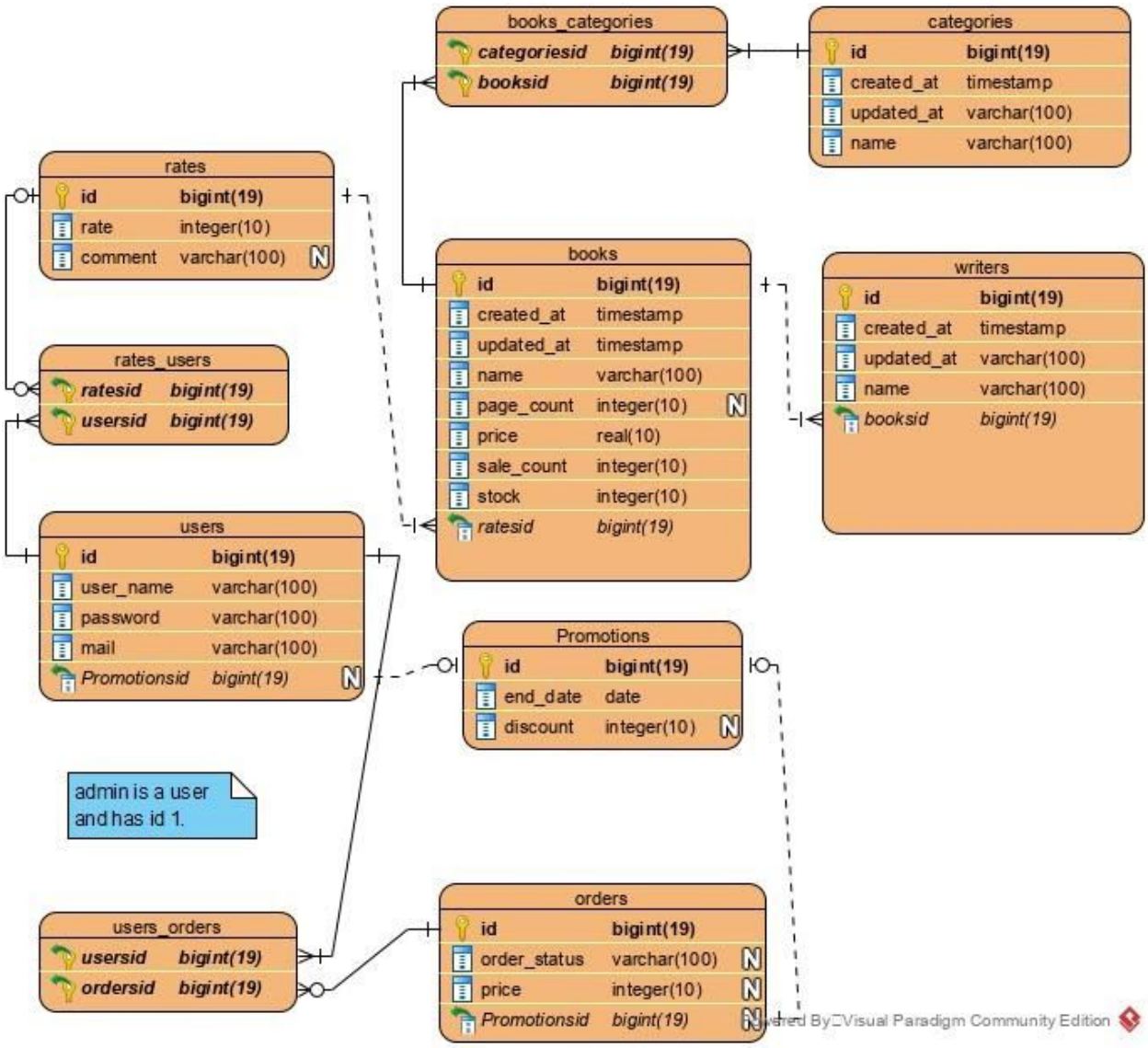
4.2.1.10 : Selecting Cargo



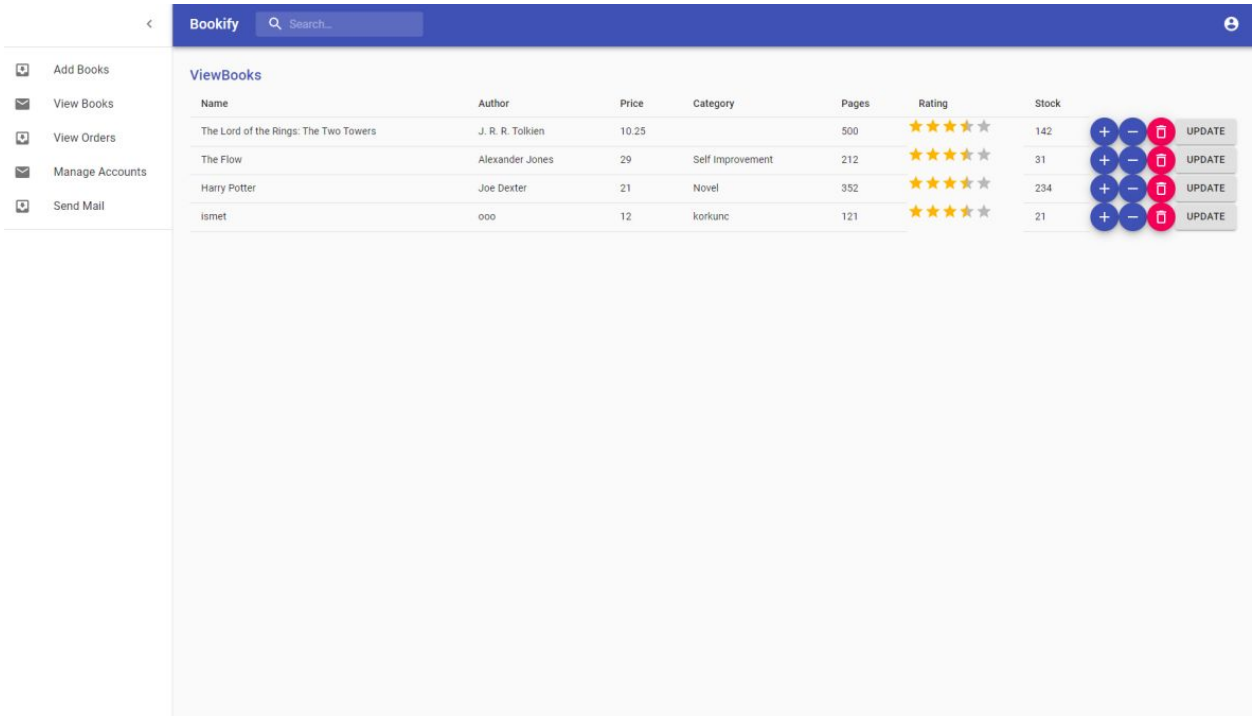
4.2.2 State Diagram of the System:



4.3. Data Model (E-R Diagram)



4.4. User Interface Design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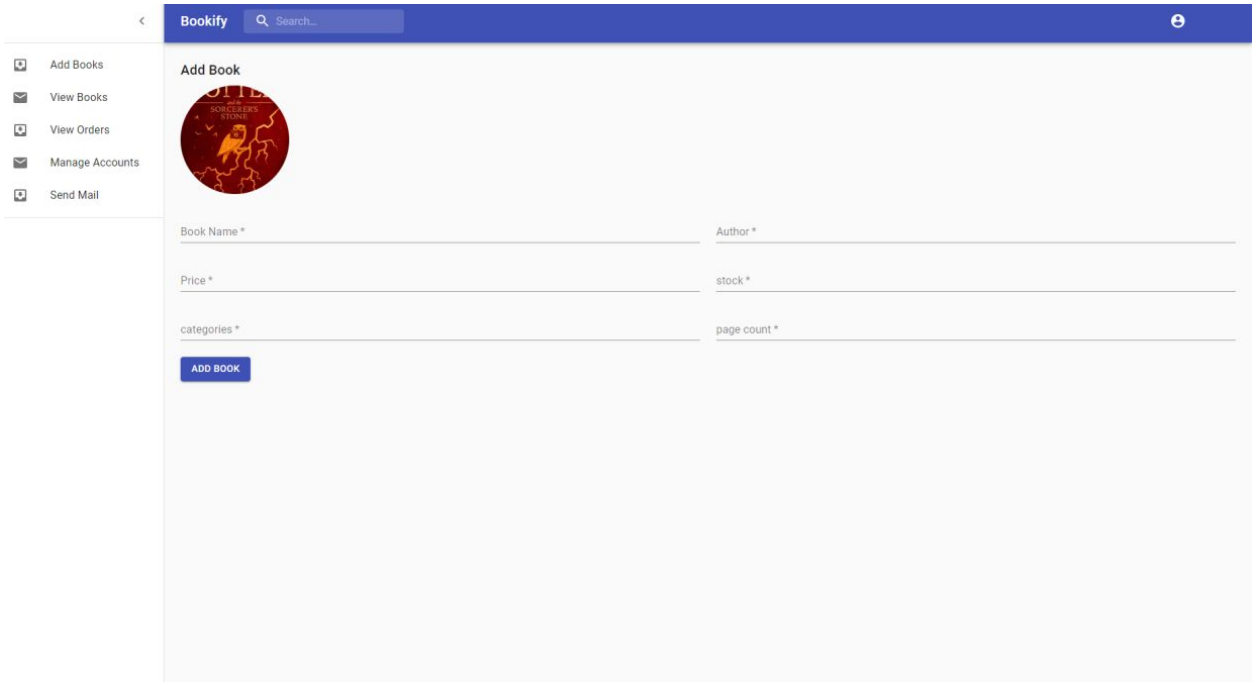
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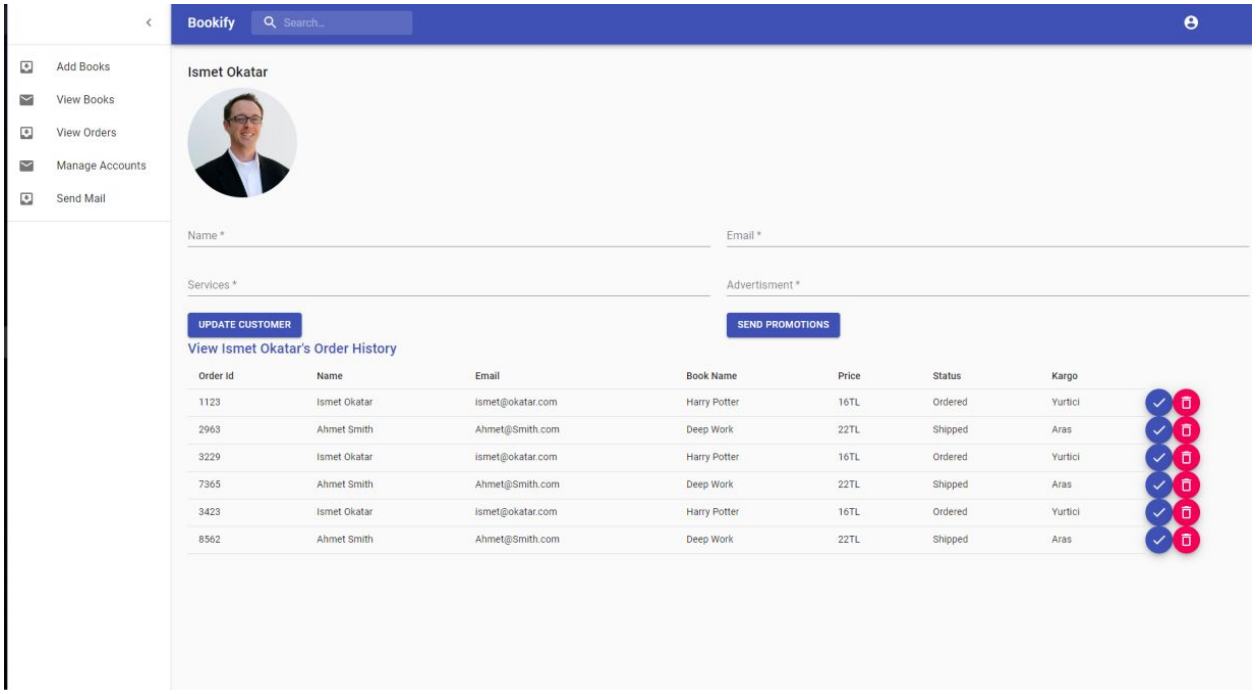
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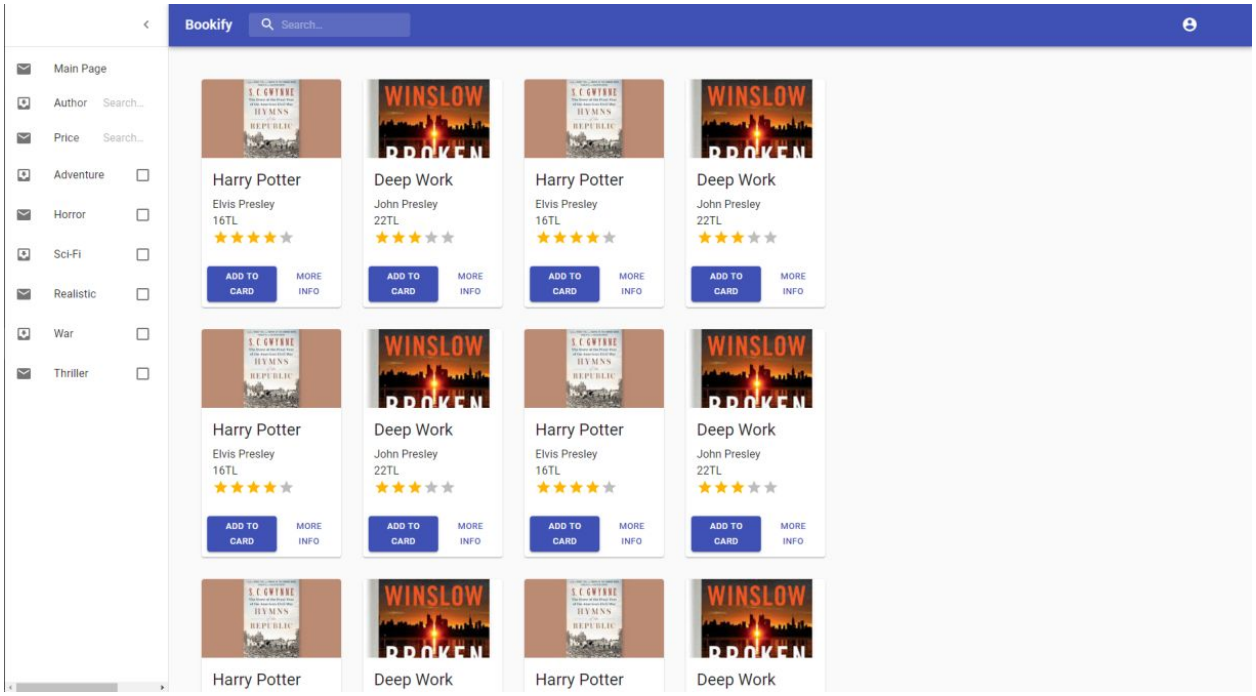
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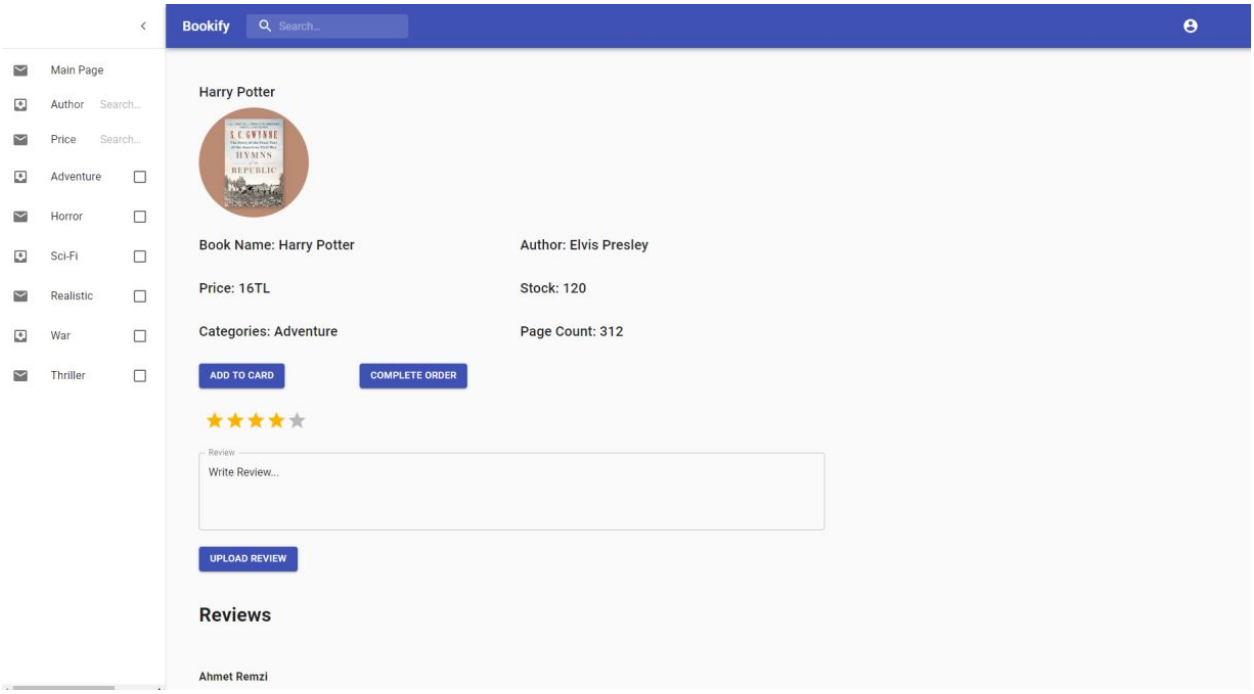

5. Requirements Traceability

Requirements	***Priority***	***Status***
Login	High	Working
Logout	High	Working
Register	High	Working
Update User Info	Medium	Working
Add Product to Basket	Medium	On progress
Delete Product From Basket	Medium	On progress
Send Promotion	Low	On progress
Search Book	High	On progress

Update Product Info	Medium	Working
Rate\Review Book	Medium	On progress
Payment Module	Low	On progress
Search Bar	High	Working
Shipping Module	Low	On progress

6.Annexes

Traceability matrix is included in Traceability_Matrix.pdf.