

PATATES	Version: 1.0
Software Design Description	Date: 20.05.2020

PATATES

Software Design Description

1. Revision History

<i>Version</i>	<i>Date</i>	<i>Author</i>	<i>Change Description</i>
0.1	17.05.2020	İlkan Akın Erenler	Purpose and Scope and Document Overview added.
0.2	18.05.2020	Güney Kırık	System Overview, Definitions, Acronyms and Abbreviations, Design Constraints and Decisions added.
0.3	19.05.2020	İrem Dereli	User Interface Design added.
0.4	19.05.2020	Mehmet Akif Baysal	Requirement Traceability and Annexes added.
0.5	20.05.2020	Mehmet Sezer	Class Diagram and ER Model added.
1.0	20.05.2020	Mehmet Sezer Güney Kırık	Sequence Diagrams added. Document completed and reviewed.

2. INTRODUCTION

2.1 Purpose and Scope

The main purpose of this document is explaining and giving details about design of the Patates OBS. This explanation includes several diagrams about system, progress of some use cases, software designs etc. And also user interfaces included. Interactions between interfaces and other components of the system will be explained. Also, design constraints will be explained in this document.

2.2 Document Overview

This document includes 6 different parts. They are Revision History, Introduction, Design Constraints and Decisions, Design Details Requirements Traceability and Annexes.

- 1- First part, Revision History, is used for tracking the changes on this document.
- 2- Second part, includes 5 subsections. Purpose and Scope section explains the purpose of this document. Document Overview section includes explanations about the sections in this document. System Overview section gives over-view about whole application. Definitions, Acronyms and Abbreviations sections shows the long versions of abbreviations. The last one References sections shows the references.
- 3- Design Constraints and Decisions section shows the constraints of the application.
- 4- Design Details section includes design details of system. There are some diagrams. They are Class, Sequence and Entity Relationship Diagrams. Also this section includes knowledges about user interface design.
- 5- Requirements Traceability section describes traceability relationship between requirements and software design.
- 6- Last section shows the appendixes.

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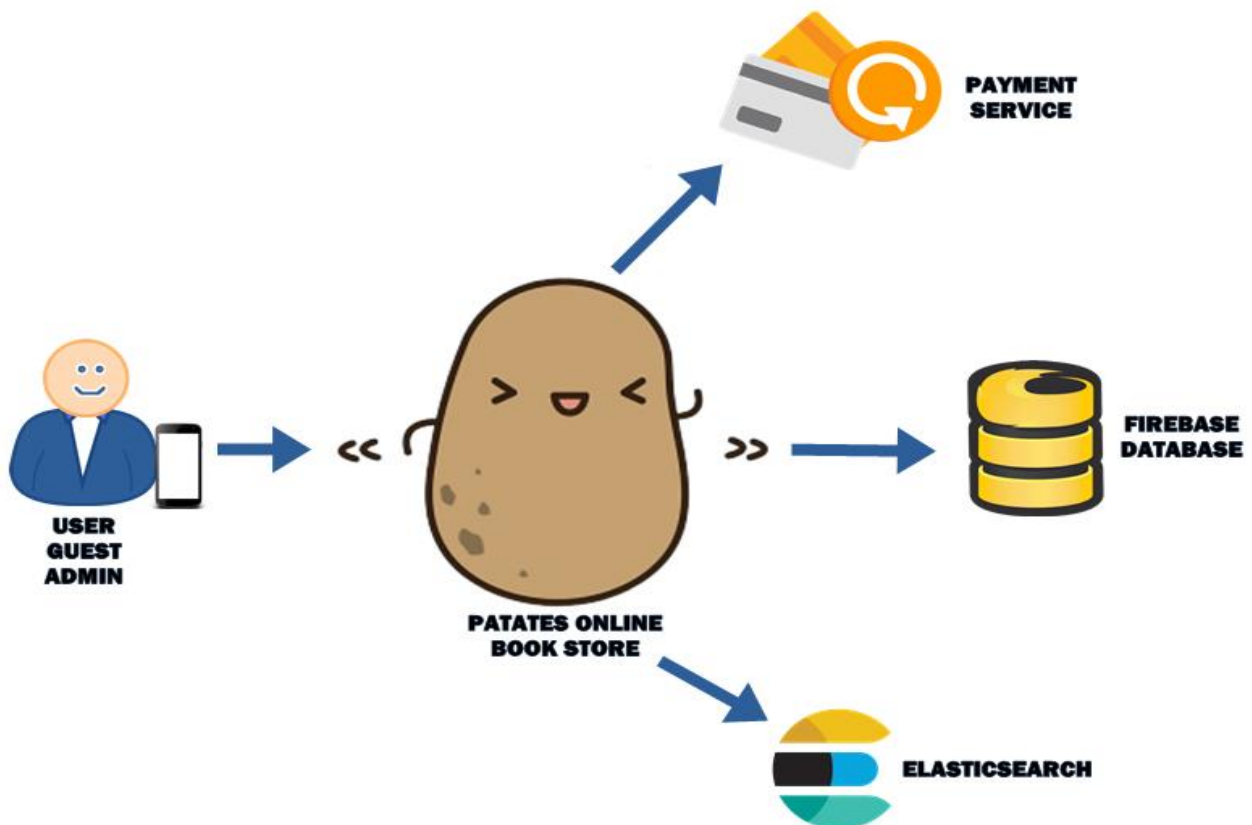
2.3 System Overview



Patates OBS developed to provide online book shopping with good and fluent user experience. Also some other purposes of the application are provide high level security.

This system will be developed with MVC architecture. There will 5 component of the system. They are models, controllers, services, repositories and views.

Actors (users, guests, admins) will use the application to make processes. System will handle the operations and will be connected with some services like payment service, Firebase, Elasticsearch etc.



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2.4 Definitions, Acronyms, and Abbreviations

<i>Term/Acronym</i>	<i>Definition</i>
OBS	Online Book Store
SDD	Software Design Description
MVC	Model-View-Controller
GUI	Graphical User Interface

2.5 References

There is no reference.

3. Design Constraints and Decisions

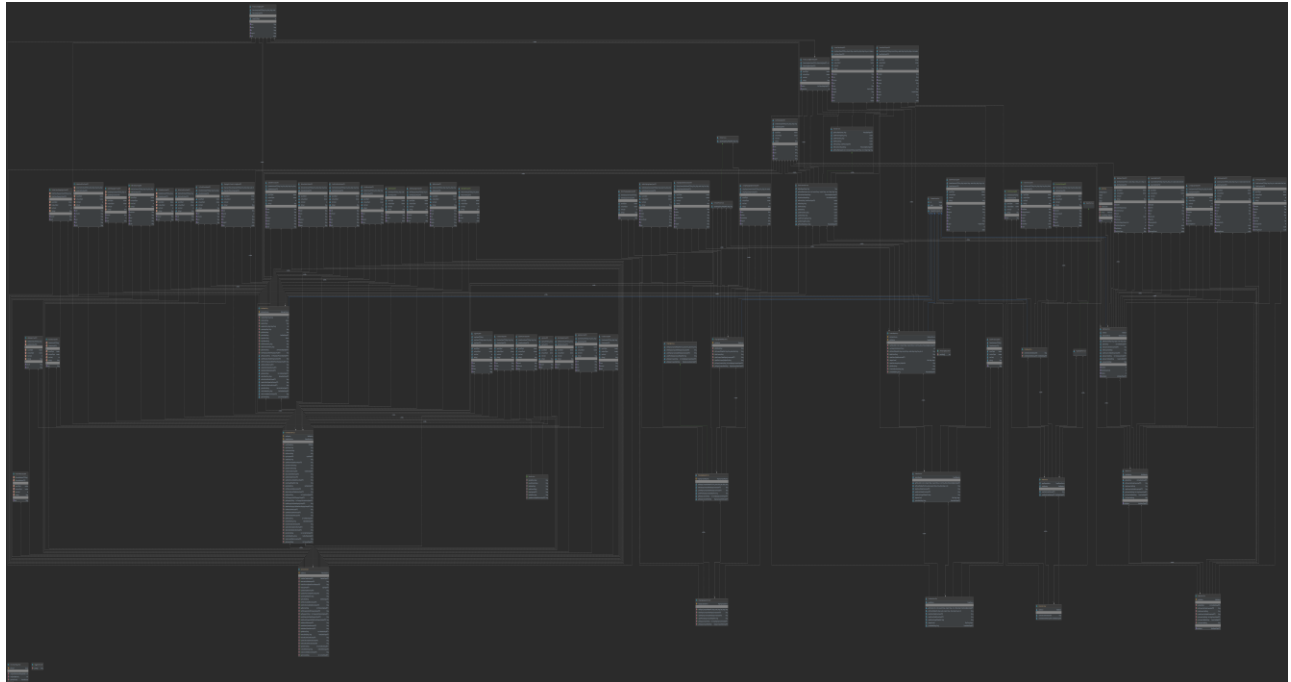
- MVC architectural design will be used to develop the system.
- There are different 5 component. These are models, controllers, view, services and repositories.
- Application will be developed for both iOS and Android operating systems. Flutter will handle that.
- GUI will be designed with Figma and developed with Flutter.
- Backend will be developed with Java Spring.
- Firebase will be used for many purposes. Firebase provides performance improvement, sending notifications, verificating the mails. Also Firebase used as database system.
- System doesn't store user informations. Firebase Authentication handles that.
- All security issues about data storage belongs to Google. (Because we use Firebase)
- Elasticsearch will be used as search service.
- Crashlytics will be used to get detailed report the crashes and errors which user may be faced.
- Github will be used to store files, document and codes. Also tracking the versions.
- Actors (users, guests, admins) needs available internet connection to use the application.
- Only admins can manipulate the products etc.
- Error handling will be done to avoid the crashes and vulnerabilities.
- The system will provide functionality and user friendly GUI.
- System must be working 24/7.
- When user complete the order, admins should confirm the purchase.
- To give order, guests need to be register and login.

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4. Design Details

4.1 Software Components

- Class Diagram



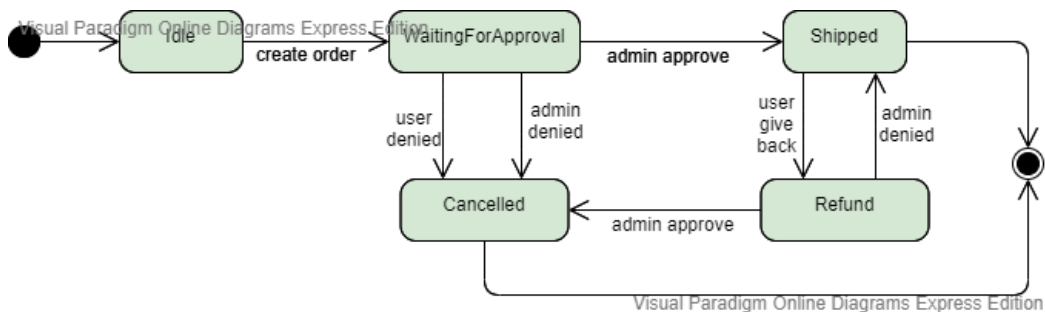
To see clearly, [click here](#).

4.2 Software Behavior

- Sequence Diagrams

Sequence diagrams are shown in *Annex A* document. Please see this.

- State Diagram of Order Class:

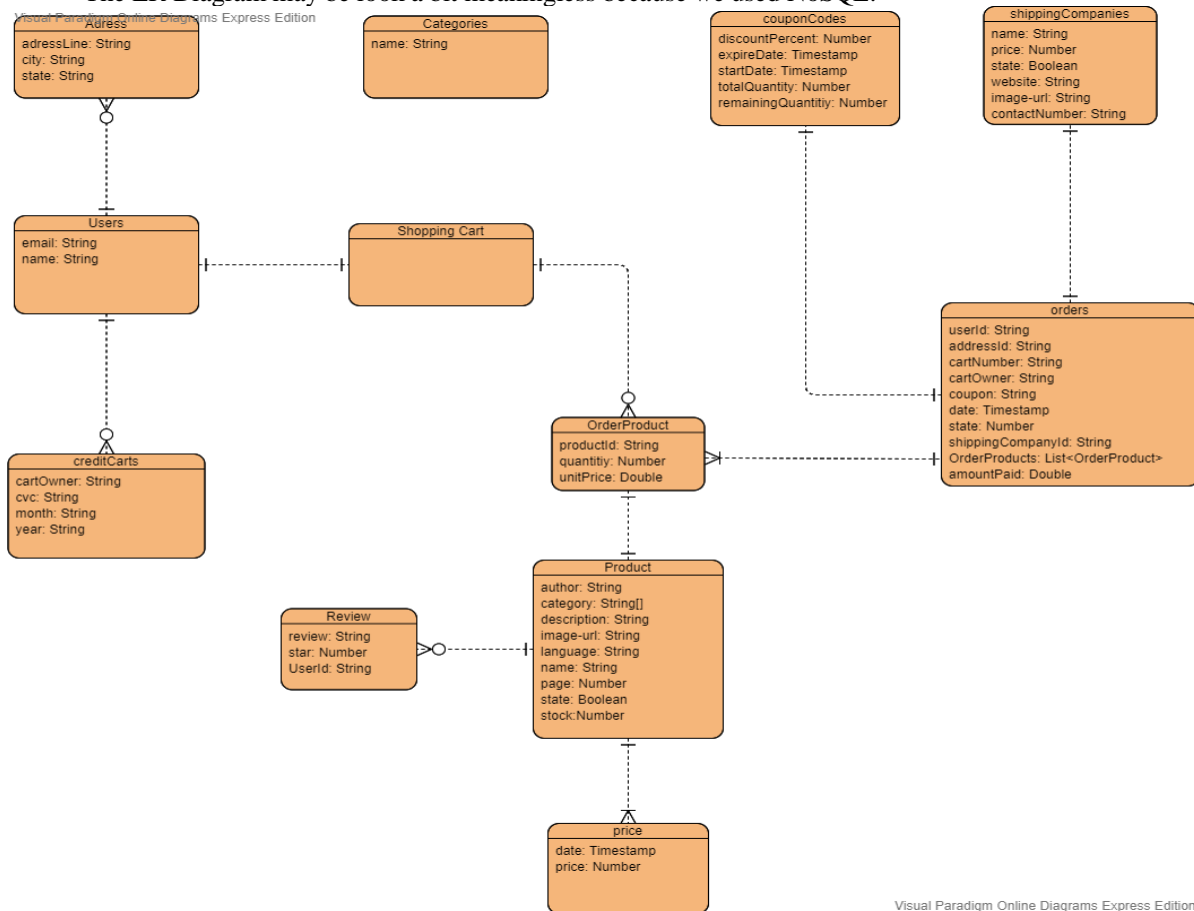


Here you can see the states and changes on states about order objects. When user create an order, this orders will be waiting for approval. If admins approve the order, it will be shipped. If shipped order is wanted to be refund and admins approve that, order will be cancelled. If admins or users denied the order which waiting for approval, order will be cancelled also.

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4.3 Data Model (E-R Diagram)

The ER Diagram may be look a bit meaningless because we used NoSQL.



4.4 User Interface Design

When the application run, guests/users will be faced with main page of the application. This pages includes different list of books (these list may be most purchased, high rated etc). Also they can perform search operation by name or author of the book by clicking the search icon. If these actors tap on any book, the book detail page will be opened.

Book detail pages includes detailed informations about related book. These informations are price, rate, name, author, image, description, comments etc. Here users can add books to their card. Guests need to register and login to system to add product to cart and give order. Also guests can see the help, about us and language options page.

Users who add book to their cart can see the cart by clicking the cart button. Cart page shows books, their prices and total price. Users can update amount of each book. After they select or add new credit card and address, they can use discount code and go to complete order. At the last page, they will see a summary of order. Users can mark books as favourite and if they purchased a book before, they can make comment about the book and rate. Also they can see their previous orders and current orders's status. They can reach their favourite books from My Library section. But they cannot update.

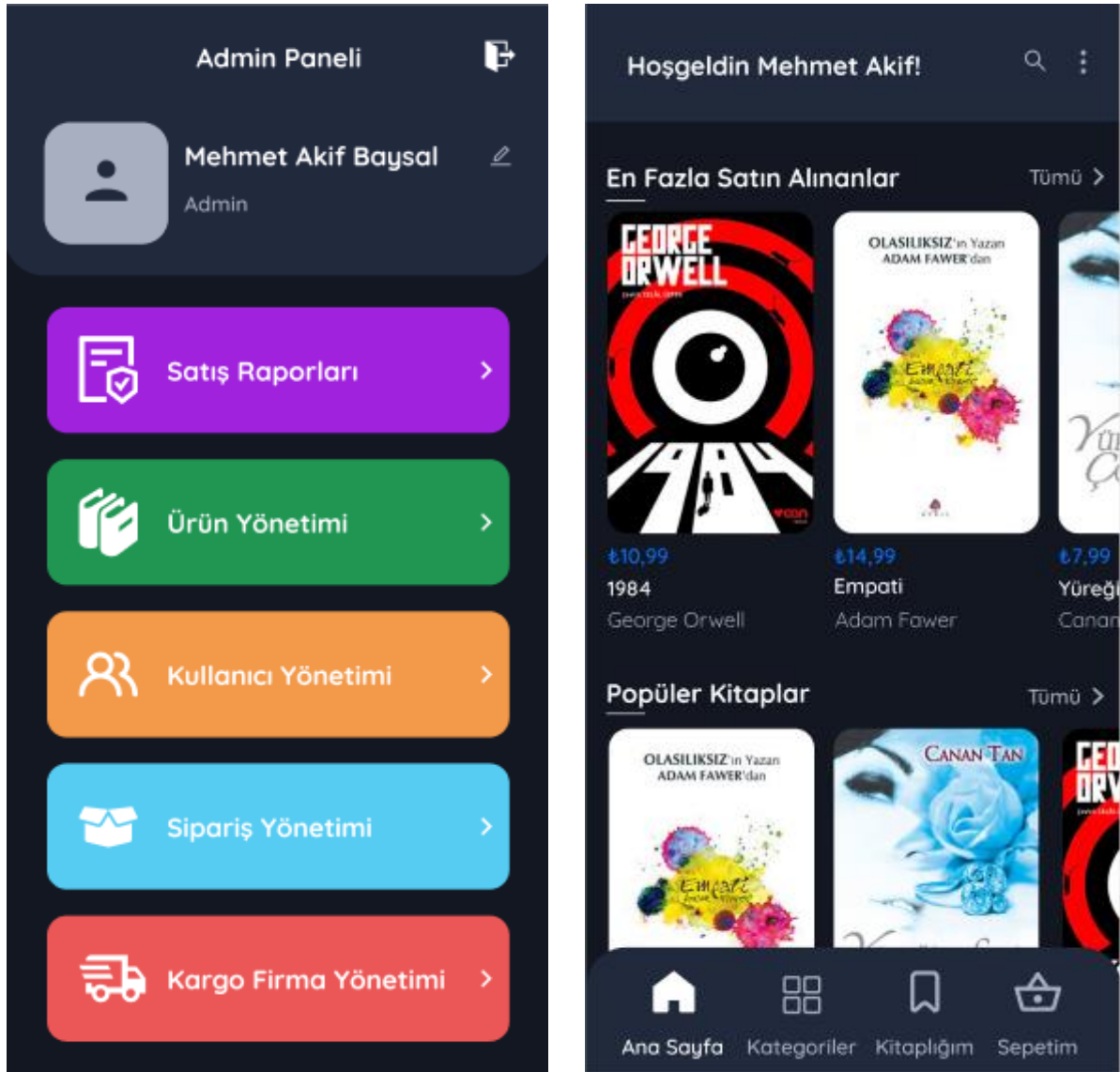
On the other hand, users can see and update their informations at my profile page. They can reach here from "More" button. Also they can change their notification settings from notification page.

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The important issue of user side, we handled some errors/crashes which user may be faced. They may be leave some required areas empty. To avoid a problem because of that, we check the required areas at frontend. So users cannot leave empty this areas. That was very important to error prevention. Users will be warned with little alerts and they cannot pass the next step. At that point, we have restricted user freedom.

To make design easthetic, minimalist, fluent and easy use, we worked on it. We used Figma to design the GUI. We chosed colors harmonious between them. That provides good looking. Also we emphasized some areas or buttons by different colors to make something comprehensive. To make fluent, we designed boxes with rounded corners and page transitions are soft-moving and sliping.

The other side of application is admin side. While designing admin side, we focused on simplicity and accessibility. Admins should do something easily and quickly. Easthetic was not the concern of us for admin side. Main concern was creating simple design.



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5. Requirements Traceability

[illegible]

6. Annexes

Annex A (SDD_Annex_A_SequenceDiagrams.pdf)