

TQS: Product specification report

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1	Introduction	1
1.1	Overview of the project	1
1.2	Limitations	1
2	Product concept	2
2.1	Vision statement	2
2.2	Personas	2
2.3	Main scenarios	2
2.4	Project epics and priorities	2
3	Domain model	2
4	Architecture notebook	3
4.1	Key requirements and constrains	3
4.2	Architeturual view	3
4.3	Arquitetura de instalação	3
4.4	System architecture	4
4.5	API for developers	4
5	API de integração	4
6	References and resources	4

1 Introduction

1.1 Overview of the project

Our project consists of a web app designed to work as a marketplace for books. Our system will allow for consumer to business interactions as well as business to business ones. This means that consumers will be able to buy the books displayed in our application, while other businesses, namely book publishers, will be able to add their own books for sale in our platform. The promoter will make money from all the transactions that are being conducted on its platform, in the form of commissions from the book sales.

Since this project is being developed for the TQS course, our solution and its development are expected to be well documented and tested, in order to ensure a quality product. This means that, through the development of this project, we will be able to use and learn in a more practical

environment the different practices related to software quality we have been acquiring throughout this course.

1.2 Limitations

Some of the features that we would implement if we had more time to develop the project would be:

- Book reviews;
- More elaborate search filtering;
- More realistic payments;
- Better user interface.

2 Product concept

2.1 Vision statement

Our web app will work as a MarketPlace where users will be able to buy books and companies/publishers will be able to put up their books for sale. This way users will have a centralized way to buy books from various publishers and publishers will be able to market their books to an online audience and expand their reach.

With this in mind we created the following use cases to aid us in the development of this project:

U.C.1:

Title: User sees list with available books

As a user/client

I want to see the available books in the web application

So that I can find books that interest me

U.C.2:

Title: User buys displayed book

As a normal user/client

I want to buy a book available on the web application

So that I can own a copy of said book

U.C.3:

Title: Publisher proposes book for sale

As a publisher representative

I want to propose a book to be on sale on the web application

So that the proposed book gets more exposure and sells more copies

U.C.4:

Title: User checks book details

As a normal user/client or a publisher representative

I want to check the details of a book

So that I can decide whether or not I want to buy it

U.C.5

Title: User searches book by title

As a normal user/client

I want to find a book by its title

So that I can check its details

U.C.6:

Title: User searches for book according to preferences/many parameters

As a normal user/client

I want to find a book that I like through a series of filters/parameters

So that I can find books that might interest me.

U.C.7:

Title: User adds books to shopping cart

As a normal user/client

I want to add books to my shopping cart

So that I can buy more than one book at a time

U.C.8:

Title: User buys many books at once

As a normal user/client

I want to buy many books at once

So that I don't have to buy them individually

U.C.9:

Title: Publisher checks books associated to it/checks all the books that were published by them and are available in the web application

As a publisher representative

I want to check the books published by my publisher

So that I can keep track of which books were proposed to the web application

U.C.10:

Title: User checks purchase history

As a normal user/client

I want to check my purchase history

So that i can know which books I already ordered

U.C.11:

Title: User checks order through order number

As a normal user/client

I want to check the details of an order

So that I can verify its details

U.C.12:

Title: System administrator checks the total value of commissions

As a system administrator of the service

I want to check the total values of the commission applied to the book sales

So that I can keep track of the total value accumulated by the applied commissions

U.C.13:

Title: System administrator checks value of commissions accumulated in a time interval

As a system administrator

I want to check the values of the commissions in a certain time interval

So that I can keep track of those values

U.C.14:

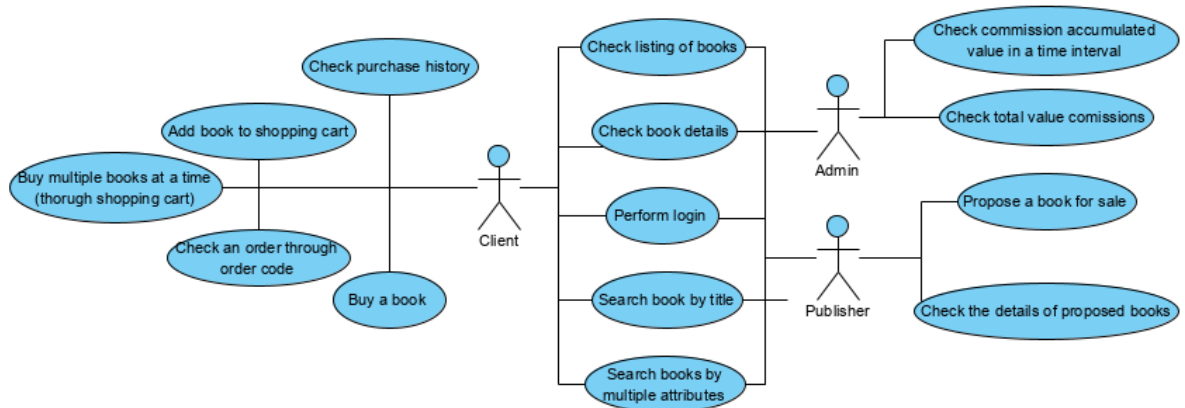
Title: User performs login

As any user (client, publisher or administrator)

I want to login to the web application

So that I can access the features of the system specific to my user permissions

Use case diagram (Subject to change)



2.2 Personas

Tiago is 20 years old and lives in a village in the countryside. He works as a farmer on his family's farm. There he works, more specifically, in the management of the farm and, as such, he works mainly indoors. He really likes reading books, but he doesn't buy them very often because the nearest bookstore is far away from his area of residence. **Motivation:** Tiago would like a way to buy/order books from a wide selection of publishers remotely, so that he doesn't have to spend time to go to the nearest book store.

Editora Campos is a publisher that has been in existence for 50 years. They already have a relatively wide audience, but they haven't yet expanded to the online market. **Motivation:** Editora Campos would like to expand their business beyond physical book stores in order to increase their sales and to access a whole new audience.

Andreia is a 37 year old financial analyst that works at BookStore. In her free time she enjoys jogging, going to the gym and watching movies. In order to do her job she has to have access to the analytics related to the sales made through the web application. For this she has to ask the development team for the analytics, this meaning that her work is dependent on the availability of the development team. **Motivation:** Andreia would like have a way to access at least some values related to the commissions generated by the sales made by the web application.

2.3 Main scenarios

The first scenario depicts the scenario where Tiago, having already created customer account, finds a book and buys it:

Tiago finds and buys a book - Tiago opens up the web application and sees a welcome message, a list of available books and a login option. He first chooses to log in to the application through the login option and the application displays the fields necessary to login on the application. Tiago inputs his account information, submits it and is redirected to the buyer's main page that, besides displaying a list of books also informs him that his login was successful. Tiago explores the list of books that is displayed and chooses to click on one of his liking. Then it is displayed a page with the book details and an option to buy. Tiago clicks the buy option and is taken to a page where he has to fill out a form with the information required to complete the transaction. After the form is filled and submitted successfully the application displays a message informing Tiago that his purchase was executed successfully.

In the second scenario a representative of the publisher Editora Campos registers said publisher in the web application and proposes a book for sale:

The representative proposes a new book for sale in the application - The representative opens up the application and sees a welcome message, a list of available books and a login option. Then chooses to login and logs in with her business account. The representative will be redirected to the publisher's main page, where all their books for sale are being displayed, along with an option to add new stock. The representative chooses the option to propose a new book for sale. This leads to a form that has to be filled with the details of the book that is going to be added for sale. After the form is completed it is displayed a message informing that the book proposal was completed/successful.

In the third scenario Andreia checks the total value of the commissions generated by the sales:

Andreia checks commission total value - Andreia opens up the application and sees a welcome message, a list of available books and a login option. She chooses to login and logs in with her administrative account. She has now access to new functionality that is exclusively shown to administrators, such as querying the commission values generated by the sales made through the application. She is presented with the total amount of commissions that the platform has collected since its inception, along with an option to choose a start date and an end date to check the commissions in more detail (all the commissions' operations can be displayed for the selected time period).

2.4 Project epics and priorities

We organized the user stories mainly in 5 epics. These are:

- Search service;
- Order service;
- Stock service;
- Commission service;
- Login service;

The Search service epic consists in the implementation of the features/stories that are related to the display of the available books. This includes the user being able to see the list of books, searching for one by name and checking its details.

The Order service is related to the implementation of mechanisms that allow the user to buy books. These include the user being able to order one or more books at a time, checking a specific order and checking a history of purchases.

The Stock service is related to mechanisms in which the publishers/companies add books for sale in the web application and check the books they already added.

The Commission service is related to features in which a system administrator checks the values of commissions generated through transactions of the platform, whether they are total values or accumulated values through a time interval.

Finally the Login service is related to the mechanism of login and registration that lead to different options depending on the user type.

3 Domain model

<which information concepts will be managed in this domain? How are they related?>
<use a logical model (UML classes) to explain the concepts of the domain and their attributes>

4 Architecture notebook

4.1 Key requirements and constraints

<Identify issues that will drive the choices for the architecture such as: Will the system be driven by complex deployment concerns, adapting to legacy systems, or performance issues? Does it need to be robust for long-term maintenance?

Identify critical issues that must be addressed by the architecture, such as: Are there hardware dependencies that should be isolated from the rest of the system? Does the system need to function efficiently under unusual conditions? Are there integrations with external systems? Is the system to be offered in different user-interfacing platforms (web, mobile devices, big screens,...)?

E.g.: (the references cited in [XX] would be hypothetical links to previous specification documents/deliverables)

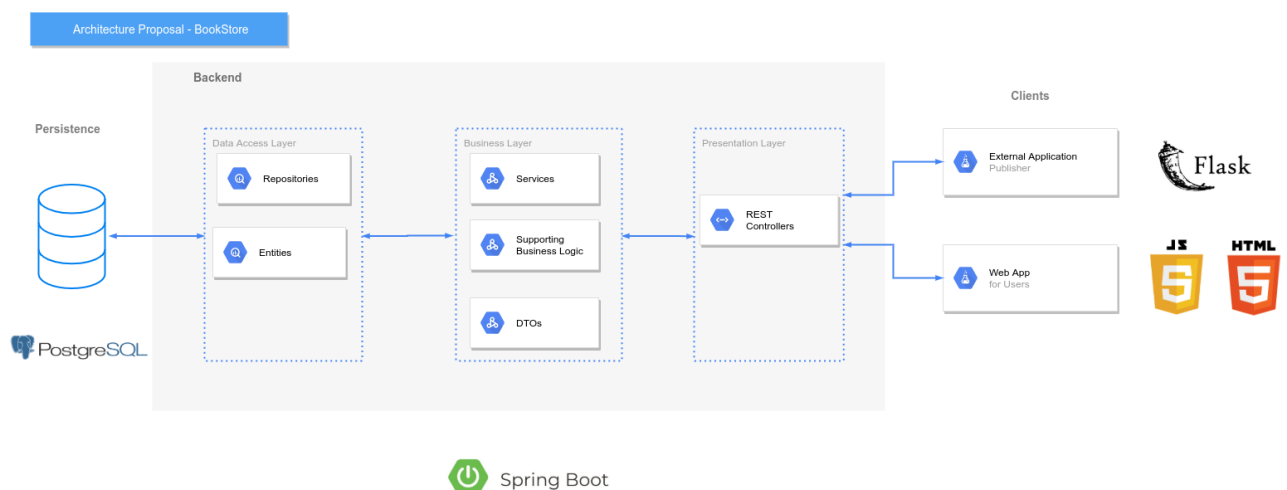
There are some key requirements and system constraints that have a significant bearing on the architecture. They are:

- è The existing legacy Course Catalog System at Wylie College must be accessed to retrieve all course information for the current semester. The C-Registration System must support the data formats and DBMS of the legacy Course Catalog System [E2].
- è The existing legacy Billing System at Wylie College must be interfaced with to support billing of students. This interface is defined in the Course Billing Interface Specification [E1].
- è All student, professor, and Registrar functionality must be available from both local campus PCs and remote PCs with internet dial up connections.
- è The C-Registration System must ensure complete protection of data from unauthorized access. All remote accesses are subject to user identification and password control.
- è The C-Registration System will be implemented as a client-server system. The client portion resides on PCs and the server portion must operate on the Wylie College UNIX Server. [E2]

è All performance and loading requirements, as stipulated in the Vision Document [E2] and the Supplementary Specification [15], must be taken into consideration as the architecture is being developed.>

4.2 Architectural view

- Discuss architecture planned for the software solution.
- include a diagram
- explain how the identified modules will interact. Use sequence diagrams to clarify the interactions along time, when needed
- discuss more advanced app design issues: integration with Internet-based external services, data synchronization strategy, distributed workflows, push notifications mechanism, distribution of updates to distributed devices, etc.>



4.3 Deployment architecture

[Explicar a organização prevista da solução em termos configuração de produção (*deployment*). Modelar num diagrama de *deployment*]

4.4 System architecture

- <briefly present the software architecture. Include diagrams.>
- <explain the supporting data models/data structures, i.e., the entities of your problem>
- <detail the specific technologies/frameworks that were used>

5 API for developers

[Explicar a organização da API. Os detalhes detalhes/documentação dos métodos devem ficar numa solução *hosted* de documentação de APIs, como o [Swagger](#), ou <https://apiary.io/>]

<what services/resources can a developer obtain from your REST-API?>

<document the support endpoints>

[Base URL: localhost:8080/weather]

client Regular user of the weather forecast API

GET /now/{latitude},{longitude} get weather forecast of the current day for the given coordinates

GET /recent/{latitude},{longitude}/{days} get weather forecast of the next days starting from today until the given number of days for the given coordinates

GET /period/{latitude},{longitude}/{start},{end} get weather forecast of the given time period for the given coordinates

GET /cached get weather forecasts previously requested and still present in cache

6 References and resources

<document the key components (e.g.: libraries, web services) or key references (e.g.: blog post) used that were really helpful and certainly would help other students pursuing a similar work>

<https://www.bookdepository.com/>