

HYPERMEDIA WEBSITE PROJECT

Design Document



**POLITECNICO
MILANO 1863**

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A.Y. 2018/2019

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1 Abstract

The scope of this document is to show the development of the project assigned during the Hypermedia Applications in the academic year 2018/2019. The project consists in the development of a website which purpose is to let the user to be able to purchase either books or eBooks, retrieve information about authors and events. In particular it will be shown the design model associated to the development of the Front End of the website and how the User interacts with it.

For this purpose we have used the schemes C, L - IDM which show respectively:

- The conceptual model and the decisions related to it.
- The logical scheme in detail.

The document will be organized as follows:

- **Abstract**

In this chapter we provide a brief introduction to the document.

- **Design-in-the-large**

In this chapter we provide detailed information about the Design-in-the-large, in addition with the C-IDM and L-IDM diagrams.

- **Scenarios**

In this chapter we presented some scenarios with some commented miniaturized screenshots that the user would use to traverse to execute a specific scenario.

- **Design-in-the-small**

In this chapter we provide detailed information about the Design-in-the-small, in addition with some commented screenshots of the main pages.

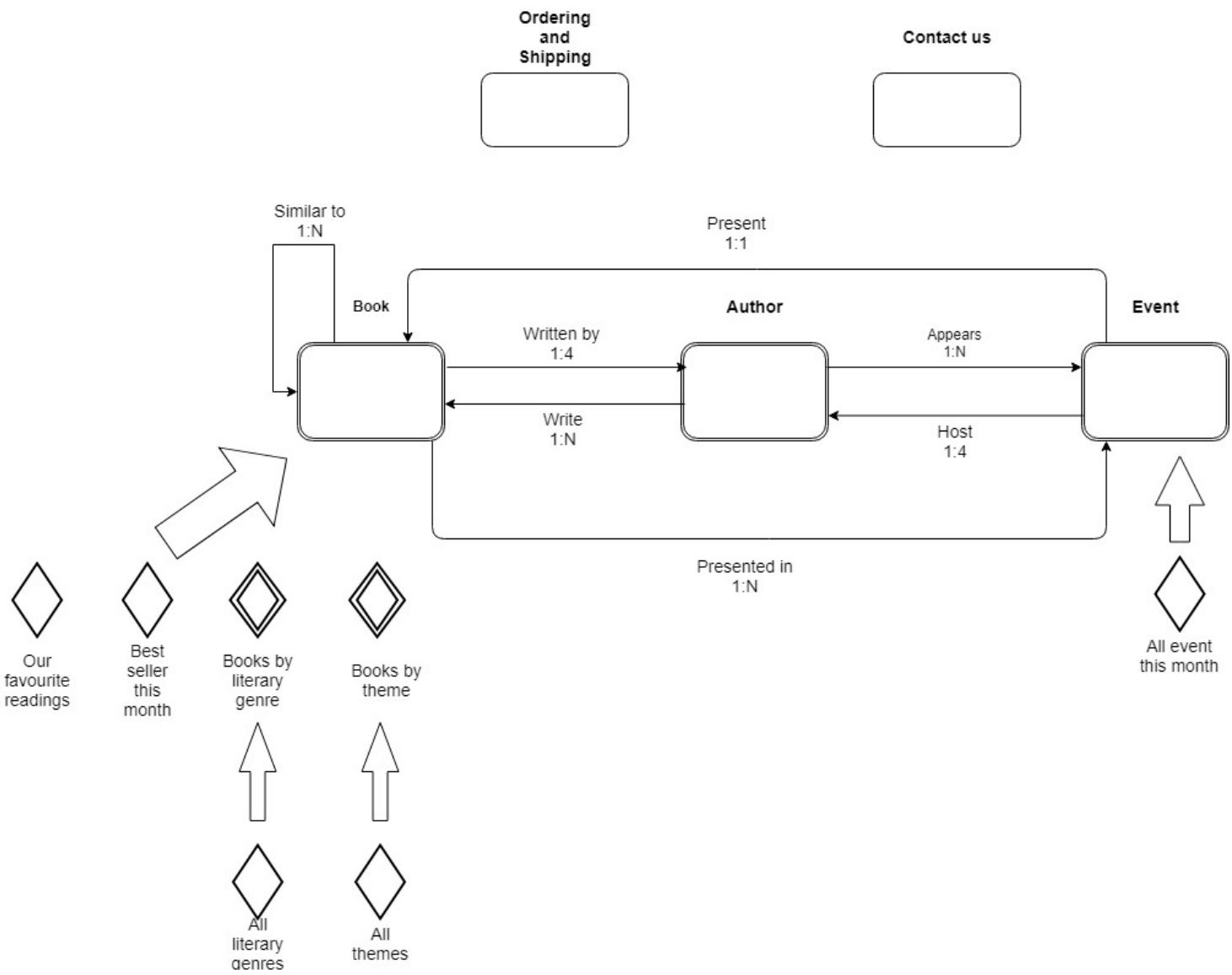
- **DB Design**

In this chapter we present the Database, along with the E-R diagram and the Relational Tables from the main pages.

2 Design-in-the-large

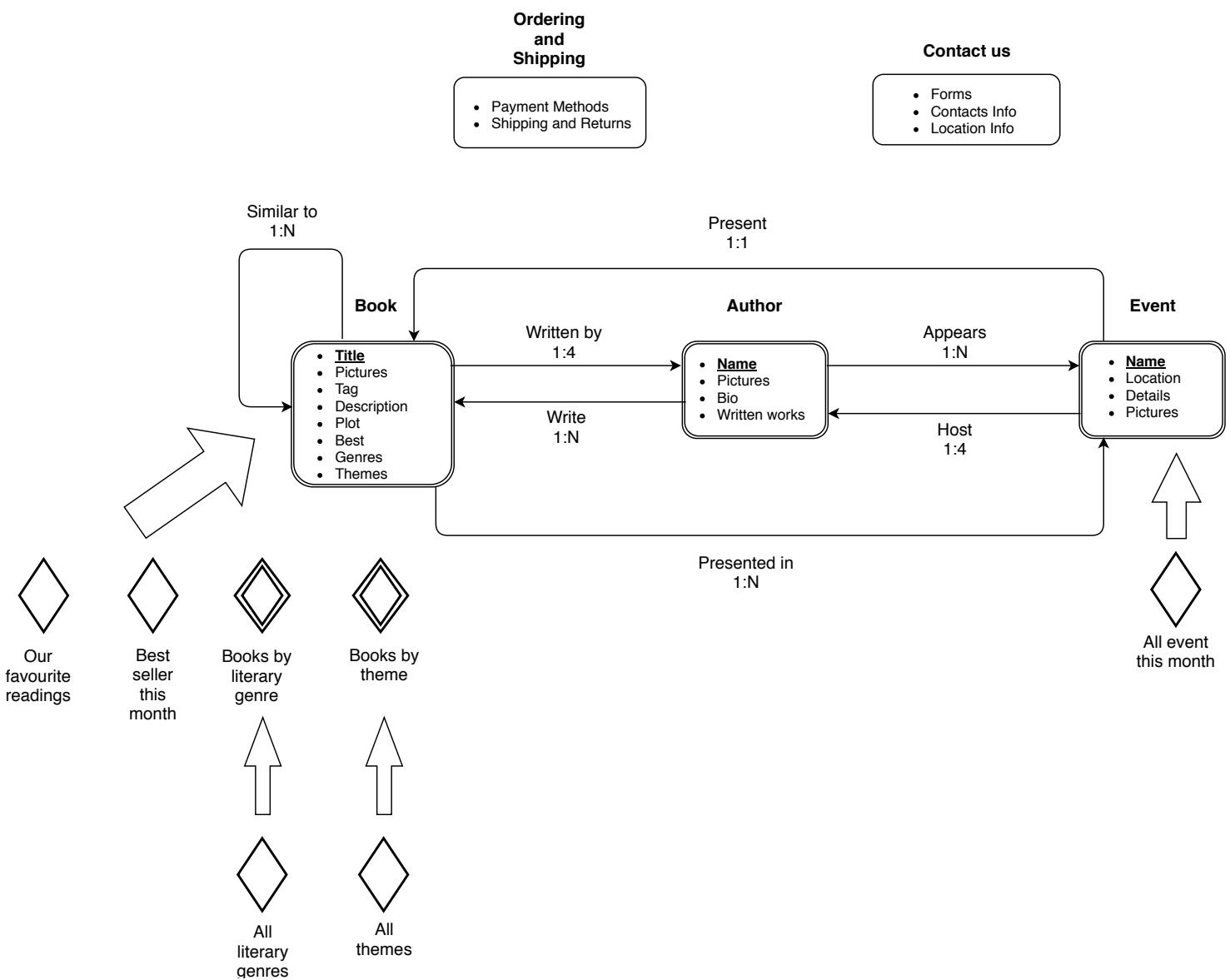
2.1 C-IDM

In this scheme we reported all the Topic, Kind of Topic, Group of Topic and Multiple Groups of Topic regarding the specifications, including the Relevant Relations and the requested cardinalities.



2.2 L-IDM

In the transaction from the conceptual scheme to the logical schema, we added the Dialogue Acts concerning the Topics and Kind of Topics and the Introductory Dialogue Acts corresponding to the Group of Topic and the Multiple Groups of Topic, previously presented in the C-IDM.

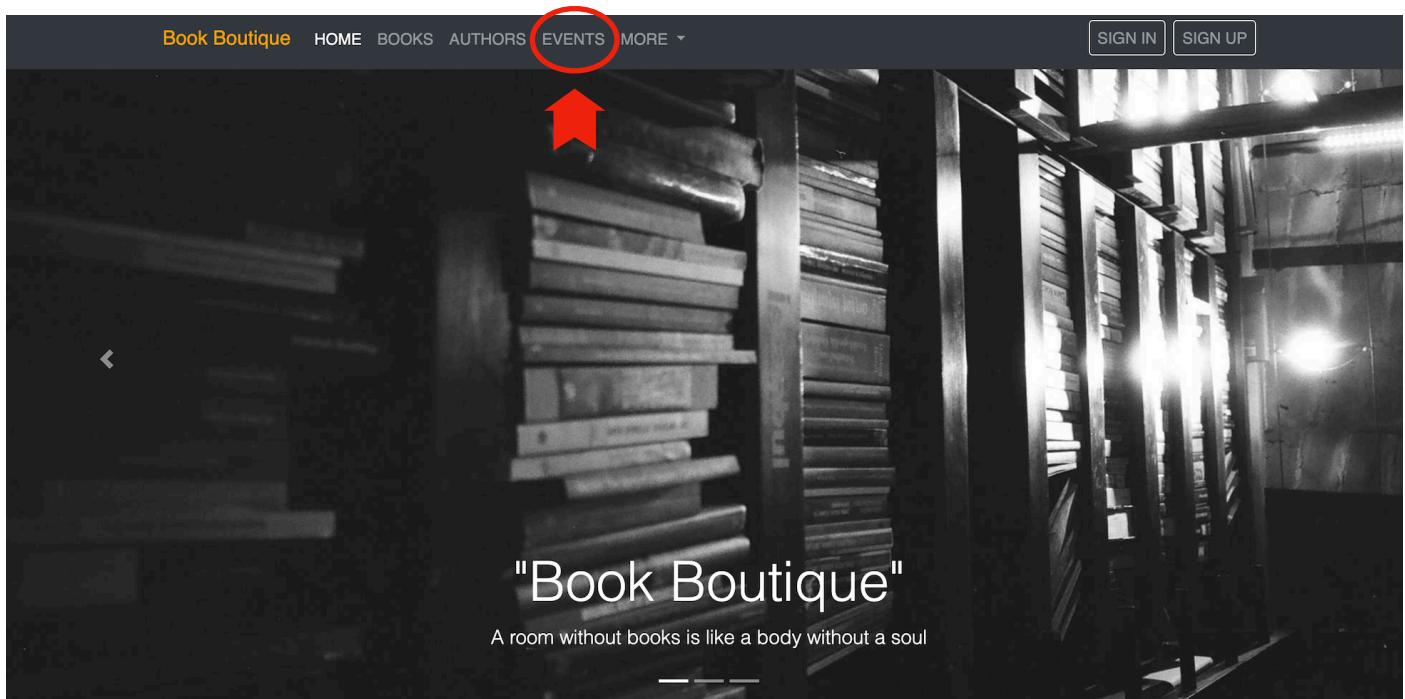


3 Scenarios

In this section we can find three scenarios with a little description of them and some commented miniaturized screenshots that the user would traverse to execute the scenario.

3.1 First Scenario

Elisabetta, is a big fan of the Harry Potter series. She would like to get in contact directly with the author of her favorite books, J. K. Rowling and so she decided to browse our website to find some events that may suite her desire. She visits the *HomePage* and from there, she clicks on the *Event* link in the navbar, and is redirected to a page where she can find a list of events. She finally finds an event that fulfills her needs and retrieves information about the date and place. By clicking on the *Show map* button she can also have an accurate information about where the event is held.



Books

Explore our website where we selected for you a great variety of books and eBooks. You will find Science fiction, Drama, Fantasy, Biography, Thriller, Romance and Narrative books and eBooks, oriented to different users' tastes and ages. What are you waiting for? Check us out!





AMERICAN BOOK FEST

Date: 2019-03-15
 Time: 16:30:00
 Location: New York

[SHOW MAP](#)[SHOW BOOK](#)

HP FEST

Date: 2019-08-22
 Time: 18:00:00
 Location: London

[SHOW MAP](#)[SHOW BOOK](#)

SMELLO LIBRI

Date: 2019-02-28
 Time: 22:00:00
 Location: Magaluf

[SHOW MAP](#)[SHOW BOOK](#)

HARRY POTTER MEETING

Date: 2019-02-01
 Time: 15:00:00
 Location: New York

[SHOW MAP](#)[SHOW BOOK](#)

ETNA COMICS

Date: 2019-09-28
 Time: 21:00:00
 Location: Catania

[SHOW MAP](#)[SHOW BOOK](#)

[1](#) [2](#)

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 bookboutique@info.it
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 + 02 224 567 89



AMERICAN BOOK FEST

Date: 2019-03-15
Time: 16:30:00
Location: New York

[SHOW MAP](#)[SHOW BOOK](#)

HP FEST

Date: 2019-08-22
Time: 18:00:00
Location: London

[SHOW MAP](#)[SHOW BOOK](#)

SMELLO LIBRI

Date: 2019-02-28
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[SHOW MAP](#)[SHOW BOOK](#)

HARRY POTTER MEETING

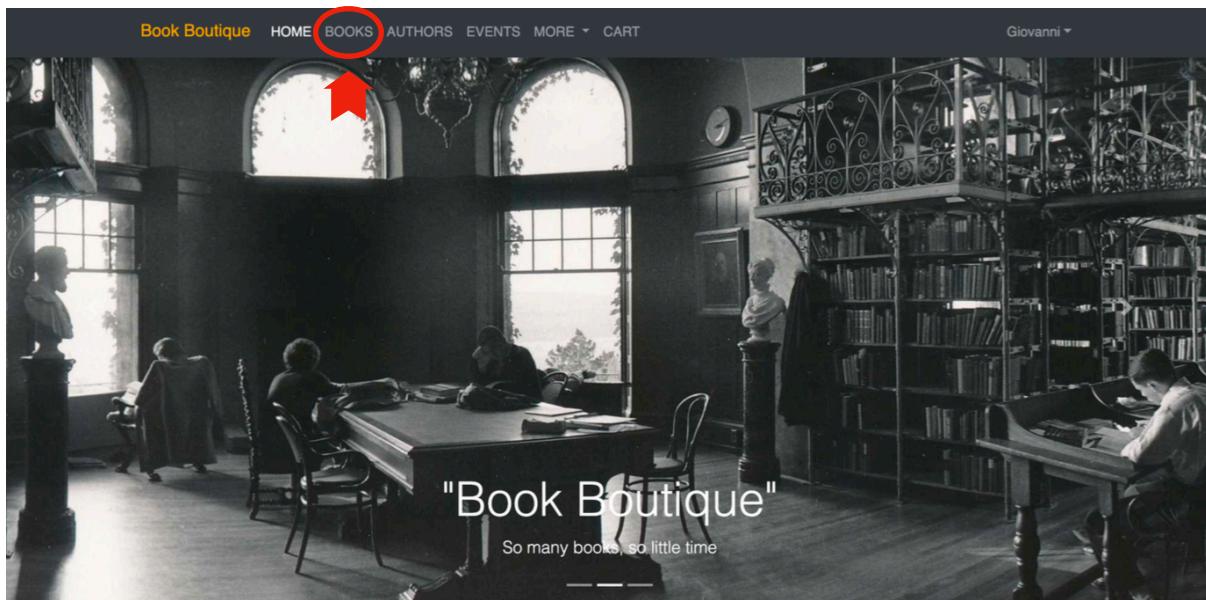
Date: 2019-02-01
Time: 15:00:00
Location: New York

[SHOW MAP](#)[SHOW BOOK](#)

Map pops out

3.2 Second Scenario

Giovanni and Gianluca are two friends that share together the passion of reading and both are registered to our website. Since Gianluca's birthday is in a couple of day, Giovanni decides to gift him a book. From the *HomePage* he clicks on the *Book* link in the navbar and is suddenly redirected to a page where he can find several books. He chooses one of them by clicking on it and the by clicking on the *Add to cart* button he adds it to the shopping cart. He then visits the *Shop* page where he complete the payment by clicking on the *Process payment* button.



Books

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Authors

Find curiosities and informations about many authors from all over the World! Read about great authors such as Paolo Giordano and Joanne Rowling.

• Science fiction

- Drama
- Fantasy
- Biography
- Thriller
- Romance
- Narrative

Themes

- Drug
- Youth
- Social status
- Politic
- Solitude
- Love
- Happiness



recognized and profitable companies. Bill Gates named Shoe Dog one of his five favorite boo...

[ADD TO CART](#)

[MORE DETAILS](#)

[AUTHOR](#)



WHITE AS MILK, RED AS BLOOD

Alessandro D'Avenia

18.9€

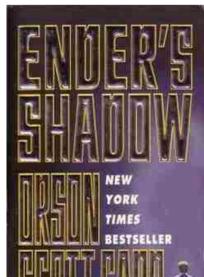
Tag: love, narrative

Description: This is the story of a schoolboy that is in love with redhaired school beauty but too shy to tell her. When he finds out she is very sick, he looks her up in the hospital. His best friend is not amused....

[ADD TO CART](#)

[MORE DETAILS](#)

[AUTHOR](#)



ENDER'S SHADOW

Orson Scott Card

11€

Tag: happiness, romance

Description: Ender's Shadow (1999) is a parallel romance novel by the American author Orson Scott Card, taking place at the same time as the novel Ender's Game and depicting some of the same events from the point of view of Bean, a supporting character in the ori...

[ADD TO CART](#)

[MORE DETAILS](#)

[AUTHOR](#)

Shopping Cart



[+](#) 1 [-](#)

18.90€

18.9€/unit

[PAPER](#)

[PAYMENT](#)



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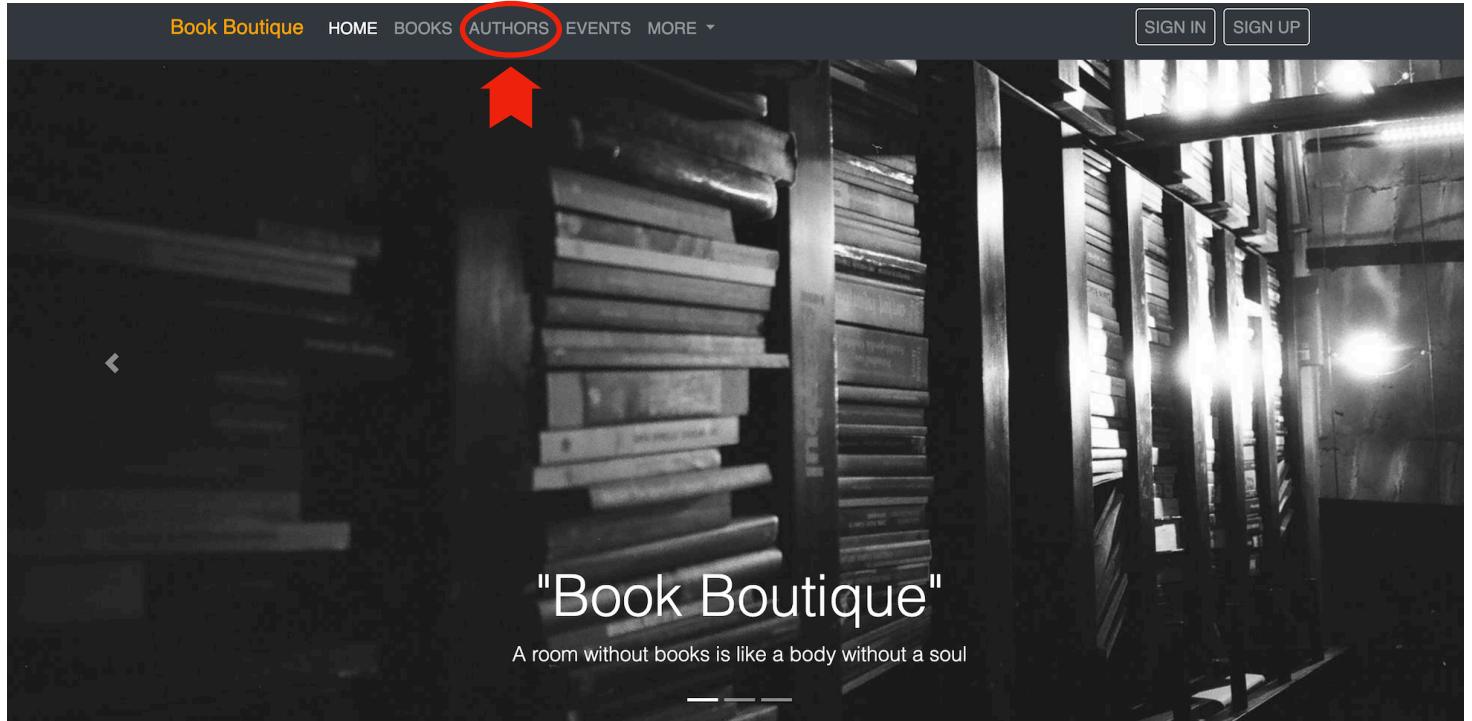
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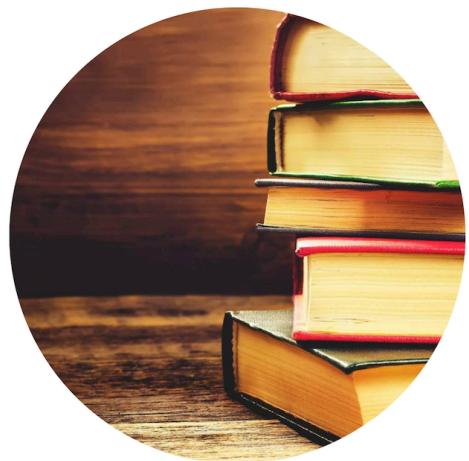
3.3 Third Scenario

Federico is a high school student and needs to do some homework research about an author of the Italian literature, Paolo Giordano. He visits our *HomePage*, and by clicking on the *Authors* link in the navbar he is redirected to the authors page. He looks for Paolo Giordano, and by clicking on his image he can retrieve all the information he needed.



Books

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GIORDANO PAOLO

Bio: Paolo Giordano (Turin, 19 December 1982) is an Italian writer and physicist. In 2008 he won the Strega Prize with his first novel: *The Solitude of Prime Numbers*. Paolo Giordano lives in Turin. His father Bruno is a gynecologist, his mother Isis is an English teacher; has an older sister, Cecilia, three years older.

[MORE DETAILS](#)


DISTEFANO ANTONIO

Bio: Antonio Dikele Distefano (Busto Arsizio, 25 May 1992) is an Italian writer. Born in Busto Arsizio to Angolan parents, he spent his childhood and adolescence in Ravenna, became fond of hip-hop music by composing some songs under the pseudonym "Nashy". In 2013 he was part of the Arab Spring duo.

[MORE DETAILS](#)


HAWKINS PAULA

Bio: Paula Hawkins, also known by the pseudonym Amy Silver (Harare, 26 August 1972), is a British writer and journalist. Born in Harare, Zimbabwe, daughter of a professor of economics and a financial journalist. He moved to London when he was 17 years old. He studied philosophy, politics and economics at the University of Oxford, then worked as a journalist for the Times. He has also worked for a number of freelance publications and has written a financial advisory book for women, entitled *The Money Goddess*.

[MORE DETAILS](#)


D'AVENIA ALESSANDRO

Bio: Alessandro D'Avenia (Palermo, 2 May 1977) is an Italian writer, teacher and screenwriter. D'Avenia was born on 2 May 1977, in Palermo, by Rita and Giuseppe, 3rd of 6 children. In 1990 he attended the Vittorio Emanuele II high school in Palermo, where he met father Pino Puglisi (he taught religion in the same institute) from whose figure he was strongly influenced.

[MORE DETAILS](#)


KNIGHT PHIL

Bio: Philip Hampson Knight is an American entrepreneur, business manager and film producer, co-founder and emeritus president of Nike after having been the CEO and president for over 50 years, he is the owner of Laika Entertainment.

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[FIND AUTHOR'S BOOKS](#)**NAME**

Paolo

SURNAME

Giordano

In 2008 he won the
lives in Turin. His
sister, Cecilia, three

in Busto Arsizio to
end of hip-hop music
the Arab Spring duo.

**Information about the searched author**

4 Design-in-the-small

4.1 Introduction

In this chapter we will present the prototype of our Web Application, aiming to highlight the design choices for the single page.

Our prototype has been developed using three different languages: HTML, CSS and JavaScript, relying on the Bootstrap 4.0 framework.

We will outline with some brief comments the main elements that characterize each single page, avoiding repetitions from other pages.

Furthermore, there will be no reference to the pages that weren't mandatory in the specifications document.

The main pages of our website are the following:

- **Homepage**
- **Books**
- **Authors**
- **Events**
- **Ordering and Shipping**
- **Contact us**

4.2 Homepage

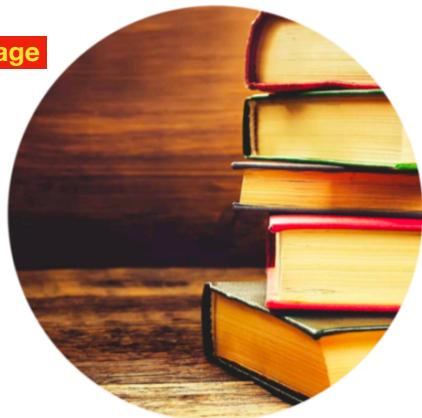
The homepage features a banner at the top with a dark background showing a stack of books. The books visible include "Swallows and Amazons" by Arthur Ransome, "The New Forest" by J.G. MacGregor, "Through the Looking-Glass" by Lewis Carroll, and "The Fellowship of the Ring" by J.R.R. Tolkien. Below the banner, the text "Book Boutique" is prominently displayed in a large, white, serif font. A smaller line of text below it reads "Never trust anyone who has not brought a book with them". At the very top, there is a navigation bar with links for "Book Boutique", "HOME", "BOOKS", "AUTHORS", "EVENTS", "MORE", "SIGN IN", and "SIGN UP".

Homepage Landmark **Landmarks** **Sign in - Sign up buttons**

Books

Transition link to Books page

Explore our website where we selected for you a great variety of books and eBooks. You will find Science fiction, Drama, Fantasy, Biography, Thriller, Romance and Narrative books and eBooks, oriented to different users' tastes and ages. What are you waiting for? Check us out!



Authors

Transition link to Authors page

Find curiosities and informations about many authors from all over the World! Read about great authors such as Paolo Giordano and Joanne Rowling.

Events

[Transition link to Events page](#)

Events are always a good moment where you can share your passion for books with other people. You will also have the opportunity to get in contacts with your favourite authors. We collected for you the best and latest events!



About Us

Book Boutique is the project of 3 friends who share together the passion of reading and came up with this idea in 2016. Our intent was to spread this passion, trying to impassionate other people, selling interesting and books rich of constructive knowledge.



[Transition link to Home page](#)

Book Boutique

Sometimes, you read a book and it fills you with this weird evangelical zeal, and you become convinced that the shattered world will never be put back together unless and until all living humans read the book.

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Footer Landmarks

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4.3 Books

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Transition links to best books



Best

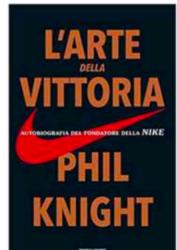
- Best Sellers
- BB favourites

Genres

- Science fiction
- Drama
- Fantasy
- Biography
- Thriller
- Romance
- Narrative

Themes

- Drug
- Youth
- Social status
- Politic
- Solitude
- Love
- Happiness



SHOE DOG

Phil Knight

12.5€

Tag: social status, biography

Description: is a memoir by Nike co-founder Phil Knight.[3] The memoir chronicles the history of Nike from its early struggles to its evolution into one of the world's most recognized and profitable companies. Bill Gates named Shoe Dog one of his five favorite boo...

MORE DETAILS

AUTHOR

Transition link to author page

Transition link to single book page

WHITE AS MILK, RED AS BLOOD

Alessandro D'Avenia

18.9€

Tag: love, narrative

Description: This is the story of a schoolboy that is in love with redhaired school beauty but too shy to tell her. When he finds out she is very sick, he looks her up in the hospital. His best friend is not amused....

MORE DETAILS

AUTHOR



HARRY POTTER AND THE CHAMBER OF

SECRETS

Joanne Rowling

15.89€

Tag: social status, fantasy

Description: Harry Potter and the Chamber of Secrets is a fantasy novel written by British author J. K. Rowling and the second novel in the Harry Potter series. The plot follows Harry's second year at Hogwarts School of Witchcraft and Wizardry, during which a ser...

MORE DETAILS

AUTHOR



THE SOLITUDE OF PRIME NUMBERS

Paolo Giordano

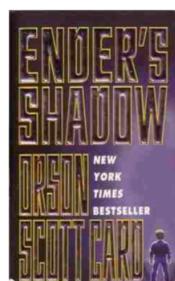
14.77€

Tag: solitude, narrative

Description: The novel narrates the childhood and early adulthood of a boy and girl who were each exposed to traumatic situations that followed them into adulthood. Both are outsiders, similar to how prime numbers are outsiders in relation to the other numbers. T...

MORE DETAILS

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Orson Scott Card

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Description: Ender's Shadow (1999) is a parallel romance novel by the American author Orson Scott Card, taking place at the same time as the novel Ender's Game and depicting some of the same events from the point of view of Bean, a supporting character in the ori...

MORE DETAILS

AUTHOR

Transition links to other Books pages



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[MORE DETAILS](#)



[Transition link to single author page](#)



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[MORE DETAILS](#)



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1 2



[Transition links to other Authors pages](#)

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4.5 Events

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SIGN UP



AMERICAN BOOK FEST

Date: 2019-03-15
Time: 16:30:00
Location: New York

SHOW MAP

SHOW BOOK

Transition link to the book related to the event



HP FEST

Date: 2019-08-22
Time: 18:00:00
Location: London

SHOW MAP

SHOW BOOK



SMELLO LIBRI

Date: 2019-02-28
Time: 22:00:00
Location: Magaluf

SHOW MAP

SHOW BOOK



HARRY POTTER MEETING

Date: 2019-02-01
Time: 15:00:00
Location: New York

SHOW MAP

SHOW BOOK



ETNA COMICS

Date: 2019-09-28
Time: 21:00:00
Location: Catania

SHOW MAP

SHOW BOOK



Transition links to other Events pages

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4.6 Ordering and Shipping

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Payment Methods

Buyers can pay with all major credit cards or PayPal. The credit cards we accept are:

- Visa
- MasterCard
- American Express
- JCB
- Union Pay

We do not accept:

- Bank notes
- International money orders
- Paypal account
- SKRILL account
- Bank transfers
- Payment by installments

Shipping and Returns

Delivery Mode

Book Boutique ships in Italy and in other European countries. The shipping methods you can choose are:

- Fast Delivery:
Daily shipping by express courier. Delivery within 1-2 working days from product retrieval.
- Standard Delivery:
Daily shipping by express courier Delivery within 3-5 working days from product retrieval.

Shipping Time

The time it takes to deliver your purchases to your home results from this sum: time of preparation of the order for shipping, plus, delivery time by the chosen carrier. The first depends on the availability of the product and refers to the time required to find the products from our suppliers and prepare the package, to then proceed with the shipment. The second depends on the carrier and it is the time it takes the courier to actually deliver the package to your address.

Order Cancellation

It is possible to cancel an order until it is still being prepared. You can follow and act on your order on the "My orders" page. If an order has already been prepared and sent, it cannot be canceled.

Tracking

You cannot keep track of your orders for now. The functionality is almost complete and will be available soon.

Price

Size*	Italy	Other Countries
Small	Free	1-2€
Medium	2€	3-4€
Large	3€	5€

*Size of book is indicated in its own description.

Other Information

For other frequently information you can find it in [this page](#) or you can contact us by complete the form [here](#).

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Do you have any questions? Please do not hesitate to contact us directly. Our team will come back to you within a matter of hours to help you.

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Your email

Subject

Your message

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5 DB Design

5.1 Introduction

In this chapter we will give a wide overview about the Database design we opted for.

Amazon DynamoDB is a fully managed proprietary NoSQL database service that supports key-value and document data structures. DynamoDB differs from other Amazon services by allowing developers to purchase a service based on throughput, rather than storage.

It's not a SQL database and so it has pros, such as good scaling and performance, but it does not have an important property like the ACID one (Atomicity, Consistency, Isolation, Durability).

We decided to adopt this service as our database because it suits very well with the serverless architecture we are using.

It can be able to autoscale just by enabling the option, so it is able to sustain a high amount of concurrent requests.

In the next paragraph we will give more detailed on how we adopted such Database for our model realization.

5.2 Database Model Description

Book table

A book element is identified by its ISBN value. It has a title, a description, a price, a theme, a genre and from one to four authors.

We decided to not create a table for the book-author relationship since a book can have at most 4 authors and, regarding scalability, if the maximum amount of authors should be raised, it will be not a problem from the moment it is quite good at managing non structured data.

Author table

An author element is uniquely identified by its ID. It has a name, a surname and a short bio.

Theme and Genre Table

An element of those tables is uniquely identified by its name. The other information for each genre and theme is the description.

Event table

An event is identified by its ID. As attributes, it has a name, a location, a timestamp and the book that has presented in that event.

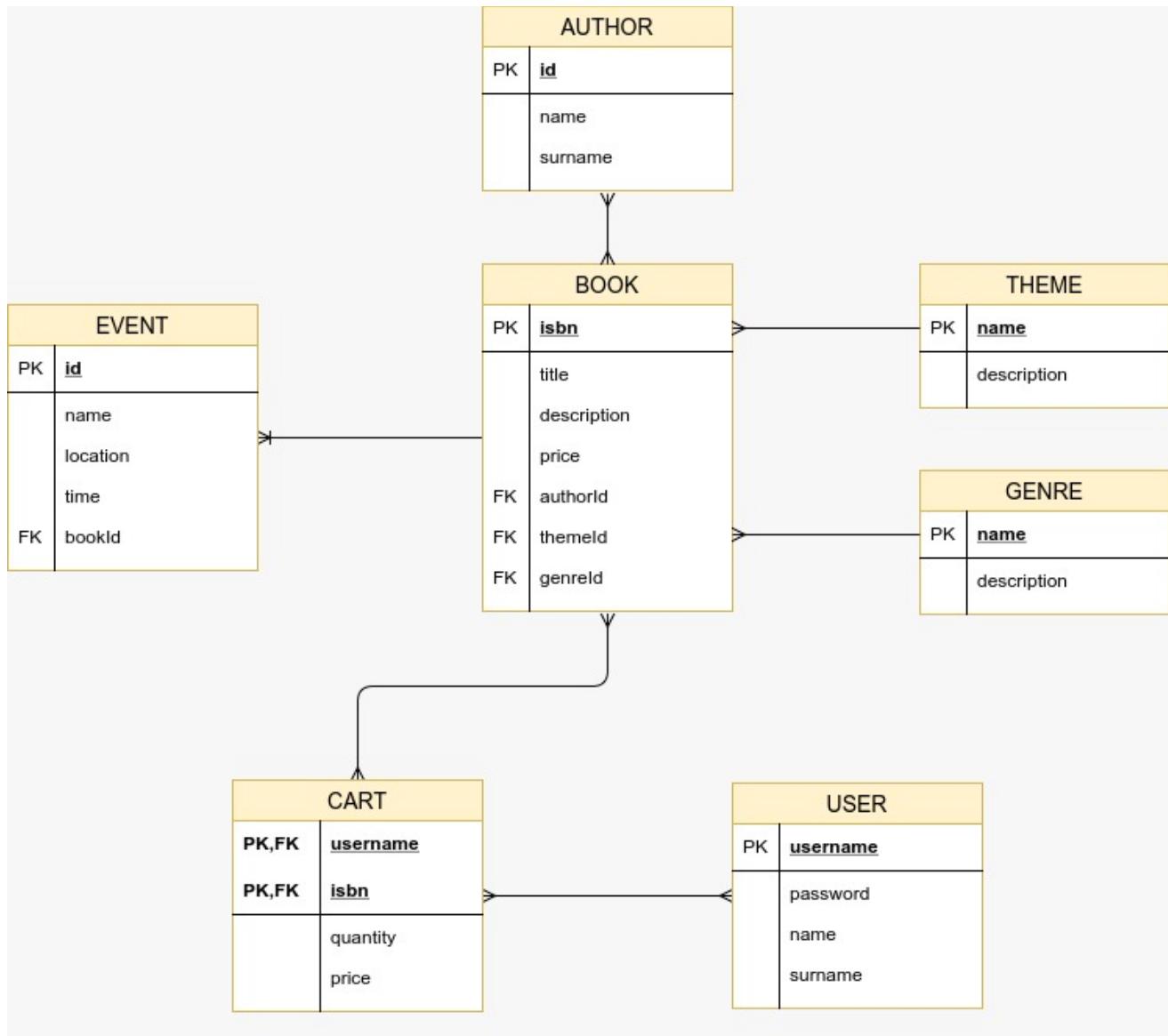
Cart table

This table stores the state of the cart of each user. Each tuple is uniquely identified by the composed key (user.username and book.isbn). Other information are quantity and price.

User table

Each user can be distinguished by its username. User tuples have a password, a name and a surname.

5.3 E-R Diagram



5.4 Relational Tables

The resources specified in the OPENAPI are the following ones:

- **User** (*username*, password, name, surname)
- **Book** (*isbn*, title, description, price, authorId, themeId, genreId, author2, author3, author4)
- **Author** (*id*, name, surname)
- **Event** (*id*, name, location, time, bookId)
- **Theme** (*name*, description)
- **Genre** (*name*, description)
- **Cart** (*username*, *isbn*, quantity, price)