



POLITECNICO

MILANO 1863

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<https://bookhub-ctm.herokuapp.com/>

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Abstract

The following document aims at resuming the work done during the preliminary design phase of the project of the Hypermedia Applications course.

The main goal of the project is to ease the purchase of books with the functionalities provided by the e-commerce. Another important objective that the project fulfill is to provide users a friendly interface to select new readings via the filters implemented. In addition, the possibility of reviewing books should raise the proactivity of the users towards a creation of a community.

In the following, we report the work executed in each step of the design process. In particular:

- **Graphical Representation:** For the **design in the large**, where we used the **Interactive Dialogue Model** for the planning of the content architecture of the web-site, we have included the **C-IDM** and **L-IDM** schemas along with some textual descriptions;
- For the **scenarios** ideation, the textual description of three possible use cases of our application;
- For the **design in the small**, the textual description of the requirements of the pages involved in our scenarios along with their graphical representation;
- For the **database design**, the **ER schema** and **logical model**.

Graphical Representation

C-IDM

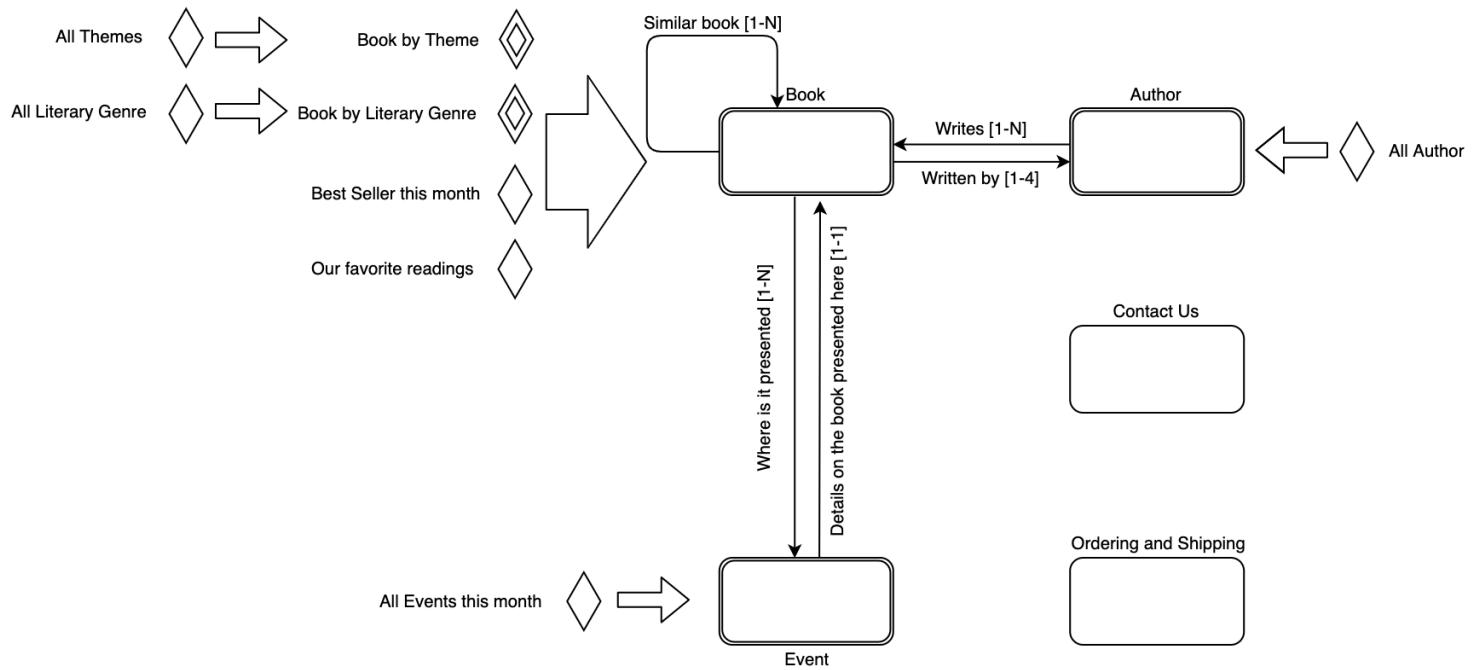


DIAGRAM 1 - C-IDM

L-IDM

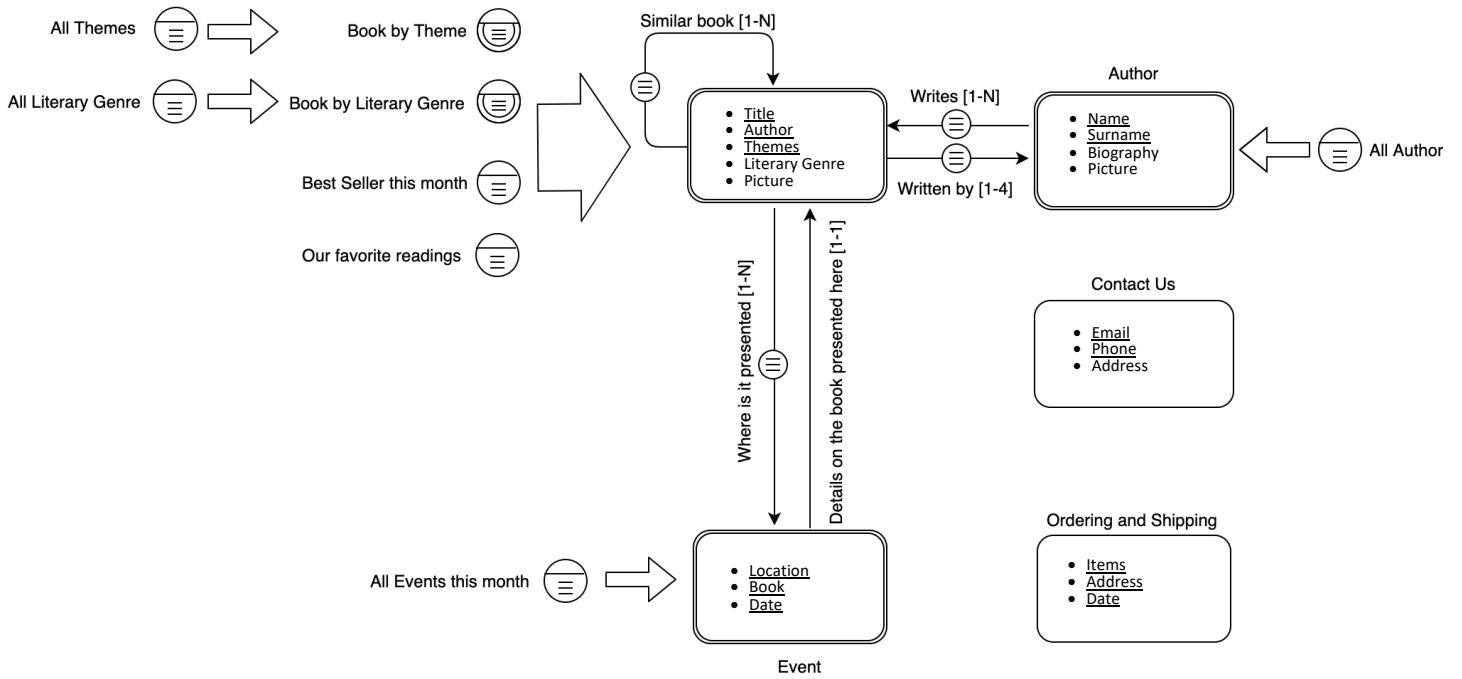


DIAGRAM 2 - L-IDM

Scenarios

Scenario 1: Alessandro is in a library and sees a book that he wants to buy. Unluckily, there are no more copies. Thus, he visits the website BookHub and searches the name of the book. When the book appears on the page, he clicks on it and then the information of the book is shown.

Now he can read the reviews and, if satisfied, add to the cart and then buy that book.

The screenshot shows the BookHub homepage. A red circle highlights the "Search bar" at the top left. Another red circle highlights the search input field on the right side of the header. A third red circle highlights the "SEARCH" button. Below the header, a search result for "Harry Potter" is displayed, with three book covers shown: "The Hunger Games" by Suzanne Collins, "Harry Potter and the Philosopher's Stone" by J.K. Rowling, and "Twilight" by Stephenie Meyer. The "Harry Potter" book cover is circled in red.

The screenshot shows the BookHub homepage after a search for "Harry Potter". A red circle highlights the "Themes" dropdown menu on the left. Another red circle highlights the "Harry Potter and the Philosopher's Stone" book cover in the search results. The "Harry Potter" book cover is circled in red. The search results also include "Harry Potter and the Prisoner of Azkaban" and "Harry Potter and the Order of the Phoenix".

To buy

Review space

Add to Cart

Product	Unit Price	Quantity	Subtotal
Harry Potter and the Philosopher's Stone Mary GrandPré, J.K. Rowling	€34	1	€34

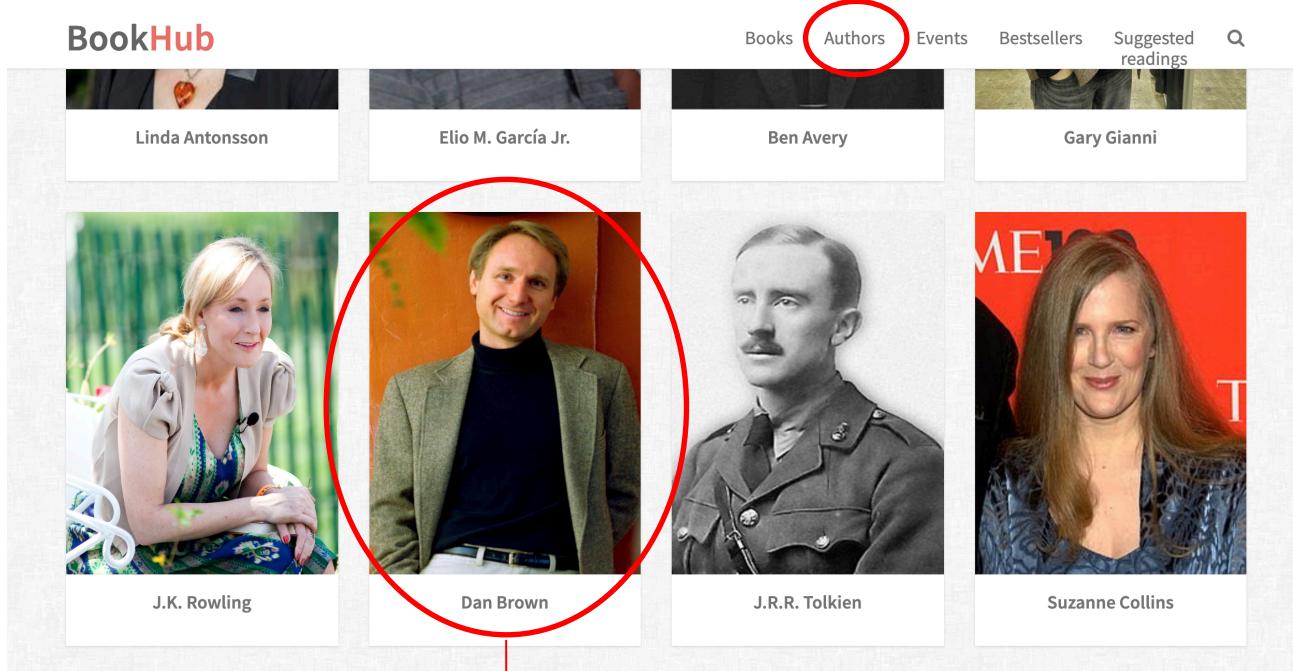
CONTINUE SHOPPING EMPTY SHOPPING CART CHECKOUT

Subtotal €34

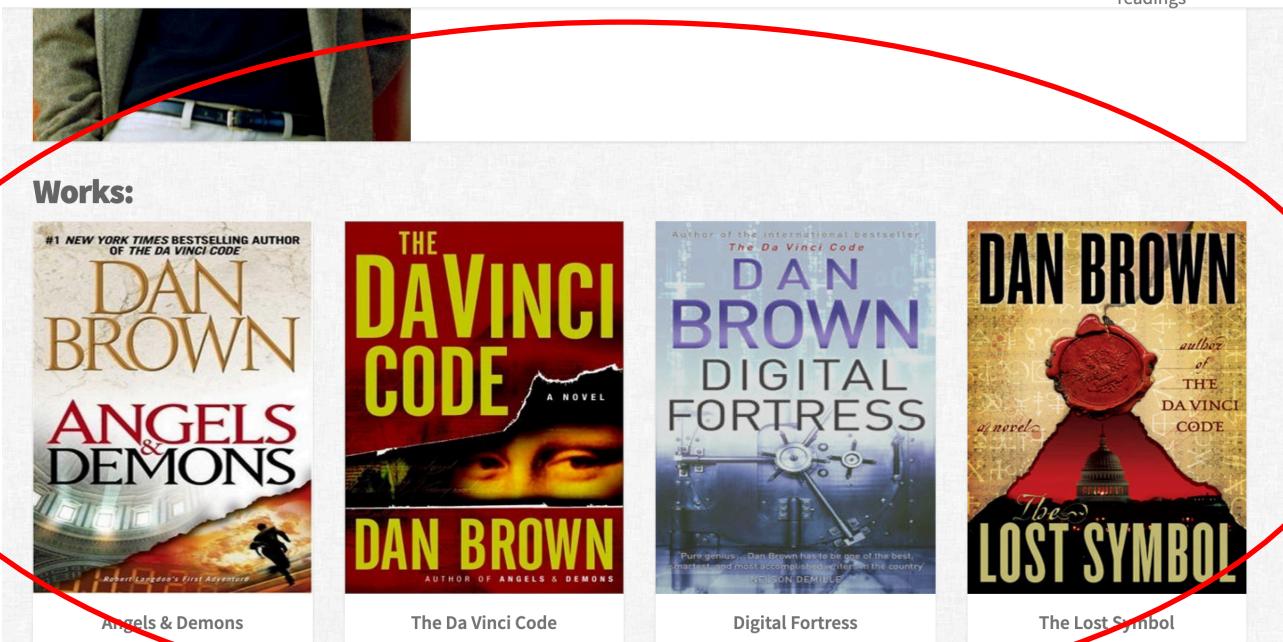
Scenario 2: Luca has a favorite author and he wants to read one of its works.

So, he decides to open the website to search his favorite author.

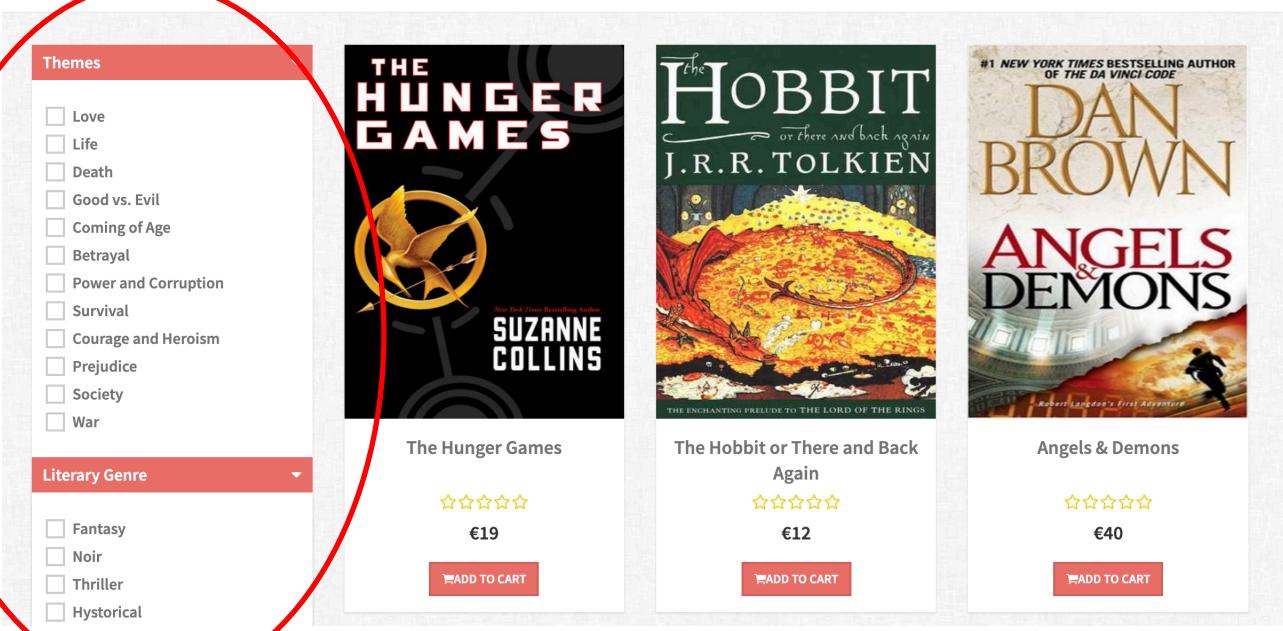
Once the search is submitted, the page of author is showed and after its biography Luca can see all the works of the author.



A screenshot of the BookHub website showing a detailed author profile for Dan Brown. At the top, there is a navigation bar with tabs: Books, Authors (which is highlighted with a red circle), Events, Bestsellers, and Suggested readings. Below the navigation bar is a search bar with a magnifying glass icon. The main content area shows a large thumbnail image of Dan Brown on the left. To the right of the image, the author's name "Dan Brown" is displayed in bold. Below the name is the title "Biography". A paragraph of text provides a brief biography of Dan Brown. At the bottom of the profile, there is a section titled "Works:" (which is circled with a red circle). Below this section, there are several small images and snippets related to Dan Brown's work, including a "NEW YORK TIMES BESTSELLING AUTHOR OF THE DA VINCI CODE" badge, a snippet of the book cover for "THE DA VINCI CODE", and a snippet of the book cover for "DAN BROWN".

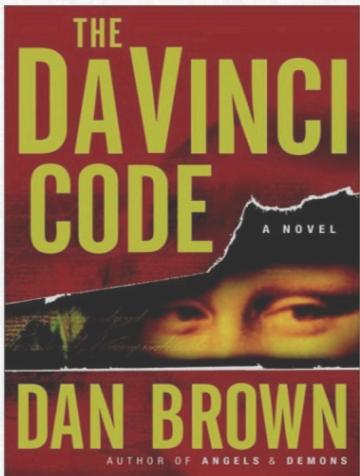


Scenario 3: Marco has just finished reading a book which he finds really interesting. He wants to find a characterised by the same genre. Thus, he decides to utilize BookHub to find similar books. He can either look on the book's page and consider its related books or see all books with the same genre on the homepage with the right filter.



The page displays the book cover of "Angels & Demons" by Dan Brown. The cover features a man running in front of a classical building. Text on the cover includes "#1 NEW YORK TIMES BESTSELLING AUTHOR OF THE DA VINCI CODE", "DAN BROWN", "ANGELS & DEMONS", and "Robert Langdon's First Adventure". Below the cover, the book's details are listed: "Angels & Demons" by Dan Brown, ISBN 1410524757, Fantasy, Historical, Legend, Power and Corruption, War themes. A red circle highlights the genre and themes section. An abstract describes the book as a 2000 bestselling mystery-thriller novel. A red "ADD TO CART" button is at the bottom right.

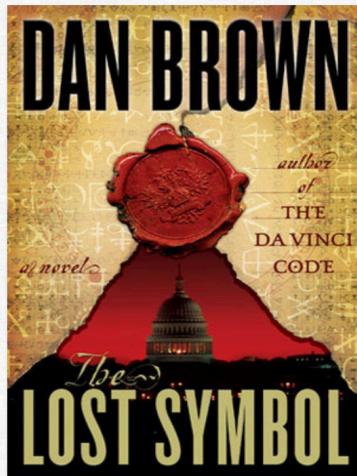
Related Products



The Da Vinci Code

★★★★★

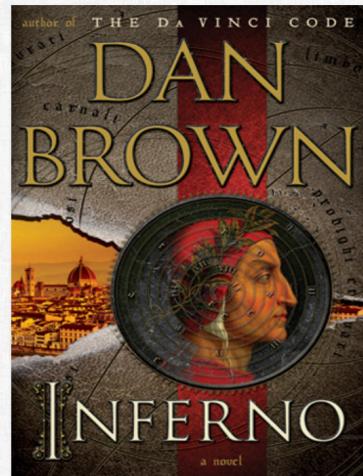
€44



The Lost Symbol

★★★★★

€22



Inferno

★★★★★

€10

Design in-the-small

In order to specify correctly the requirements of our front-end prototype, in the design in-the-small phase of the assignment we have defined the basic visual organization of contents, navigation and interaction elements of our website.

In order to do so, we have created several **medium fidelity wireframes**, one for each page involved in our scenarios.

For almost all the pages of the website, we used the same basic structure, composed by:

1. an **header**;
2. the main content **body**;
3. a **footer**.

Header and footer contain the **landmarks** links, which direct to the main topic of our website, in particular:

- the **header** contains the clickable title that redirect to the homepage, landmarks links for all the website main pages, the cart and the search bar;
- the **footer** the information for the **Contact us** and the landmark for the **FAQ** page.

The main content **body** instead, present content and transition links for the topic and multiple topic pages.

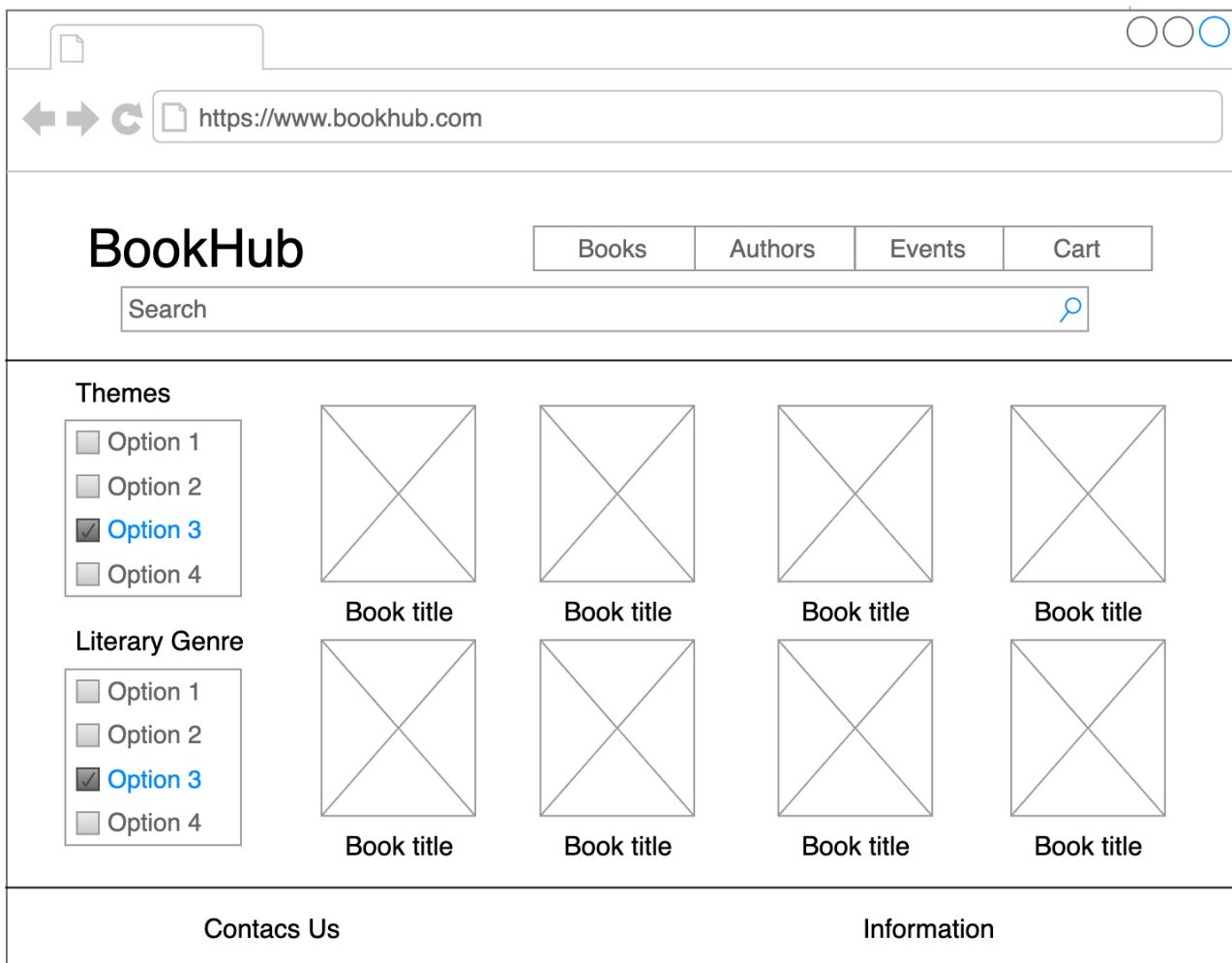


FIGURE 1 – HOME PAGE (BOOK PAGE)

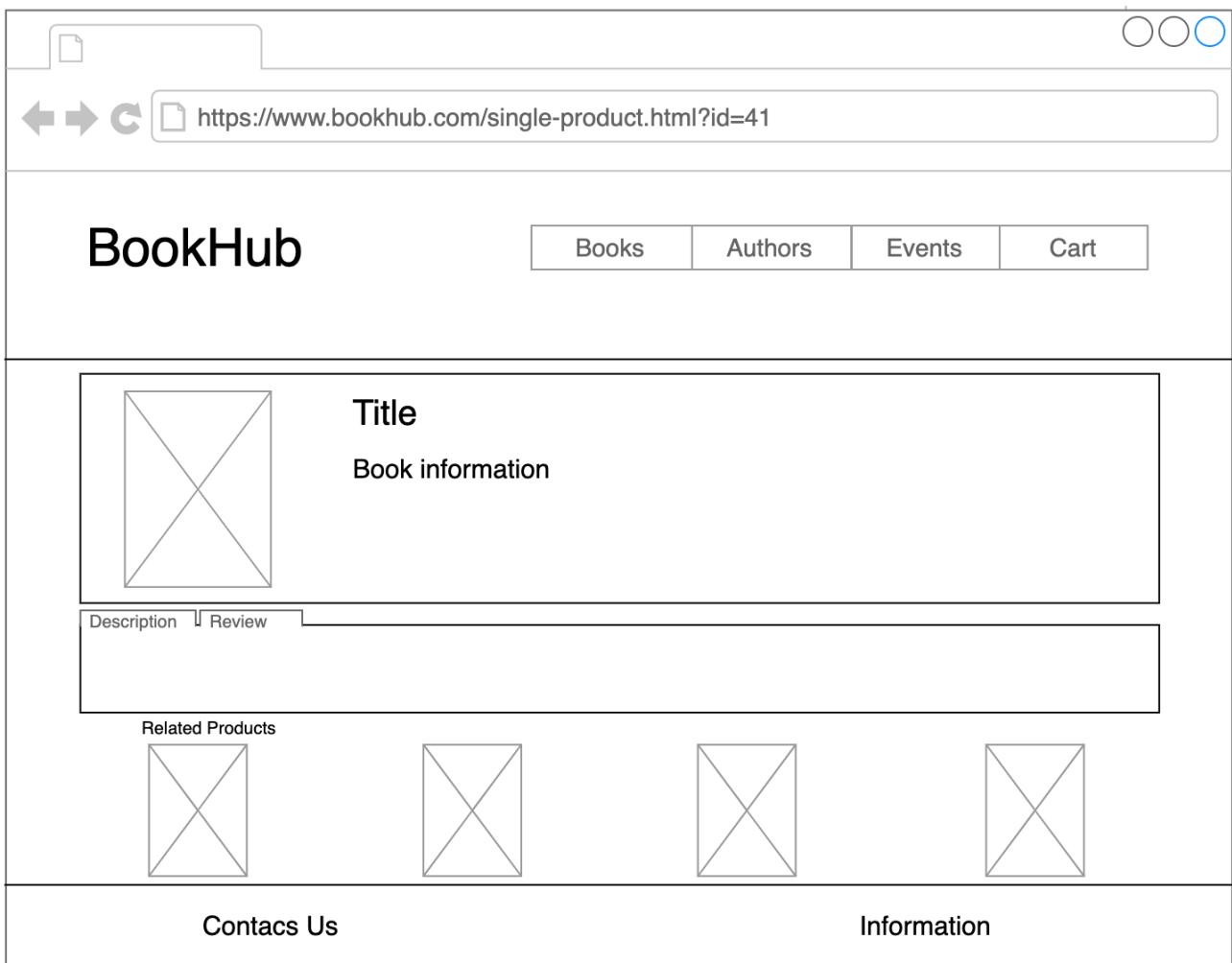


FIGURE 2 – SINGLE PRODUCT PAGE

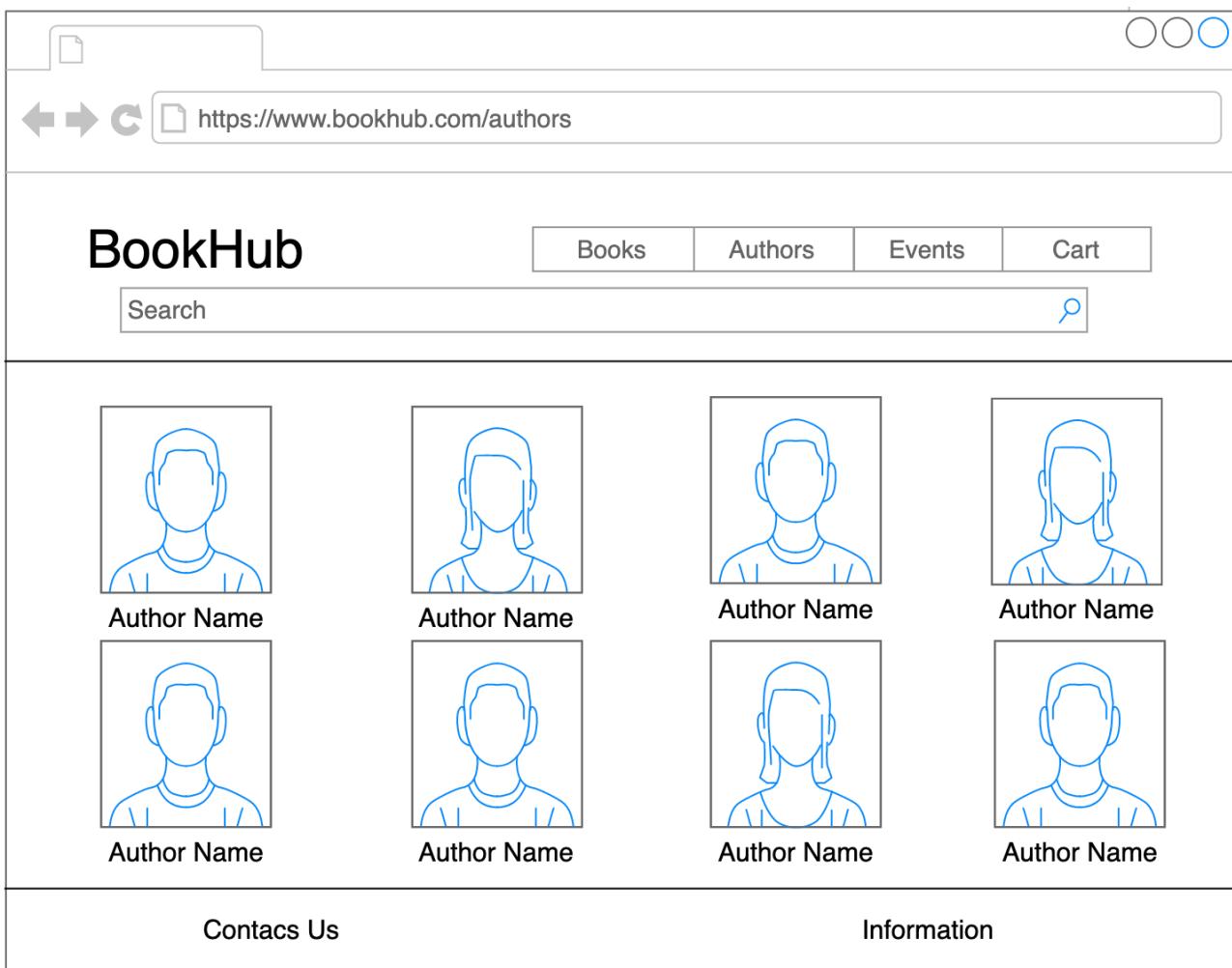


FIGURE 3 – AUTHOR PAGE

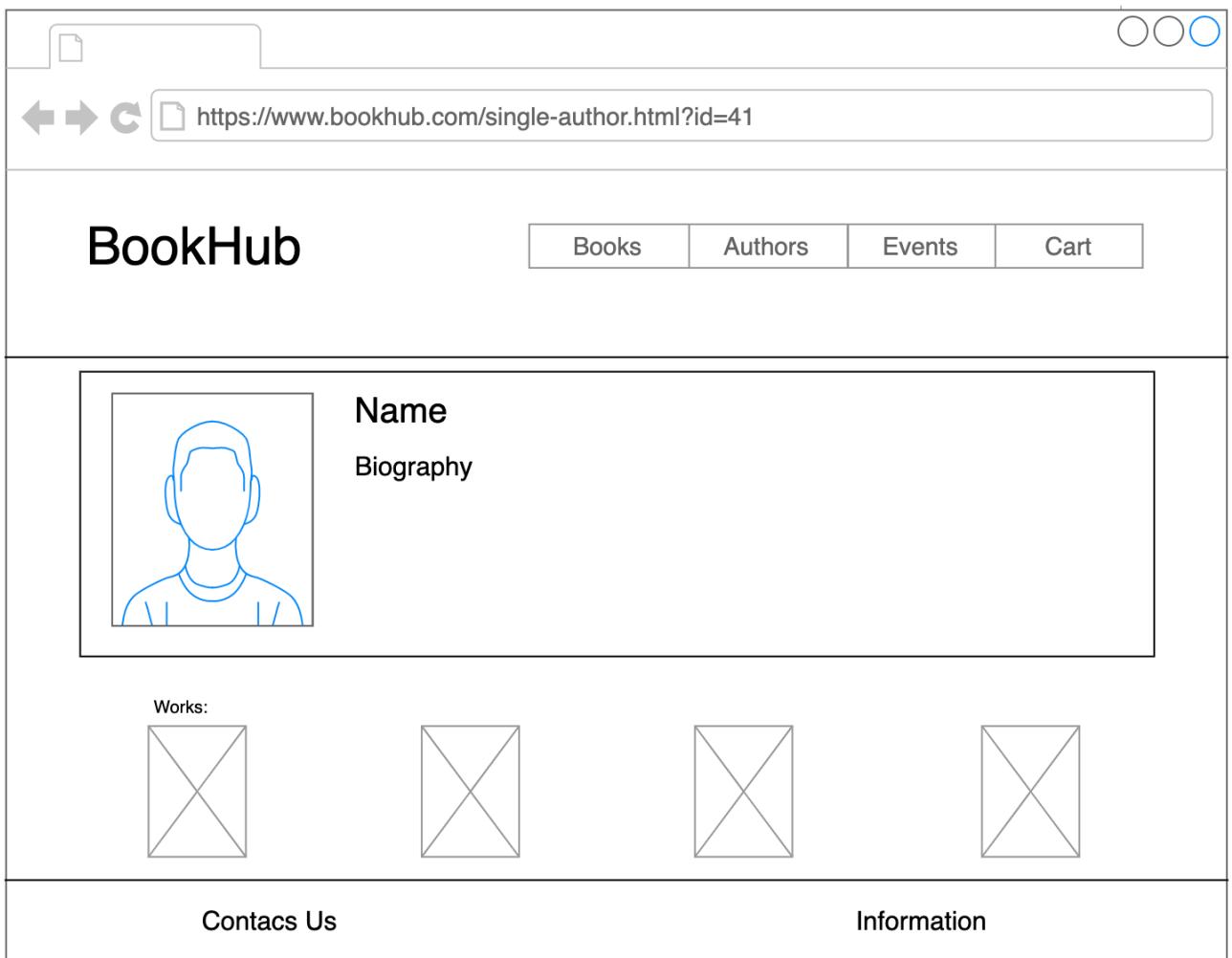


FIGURE 4 – SINGLE AUTHOR PAGE

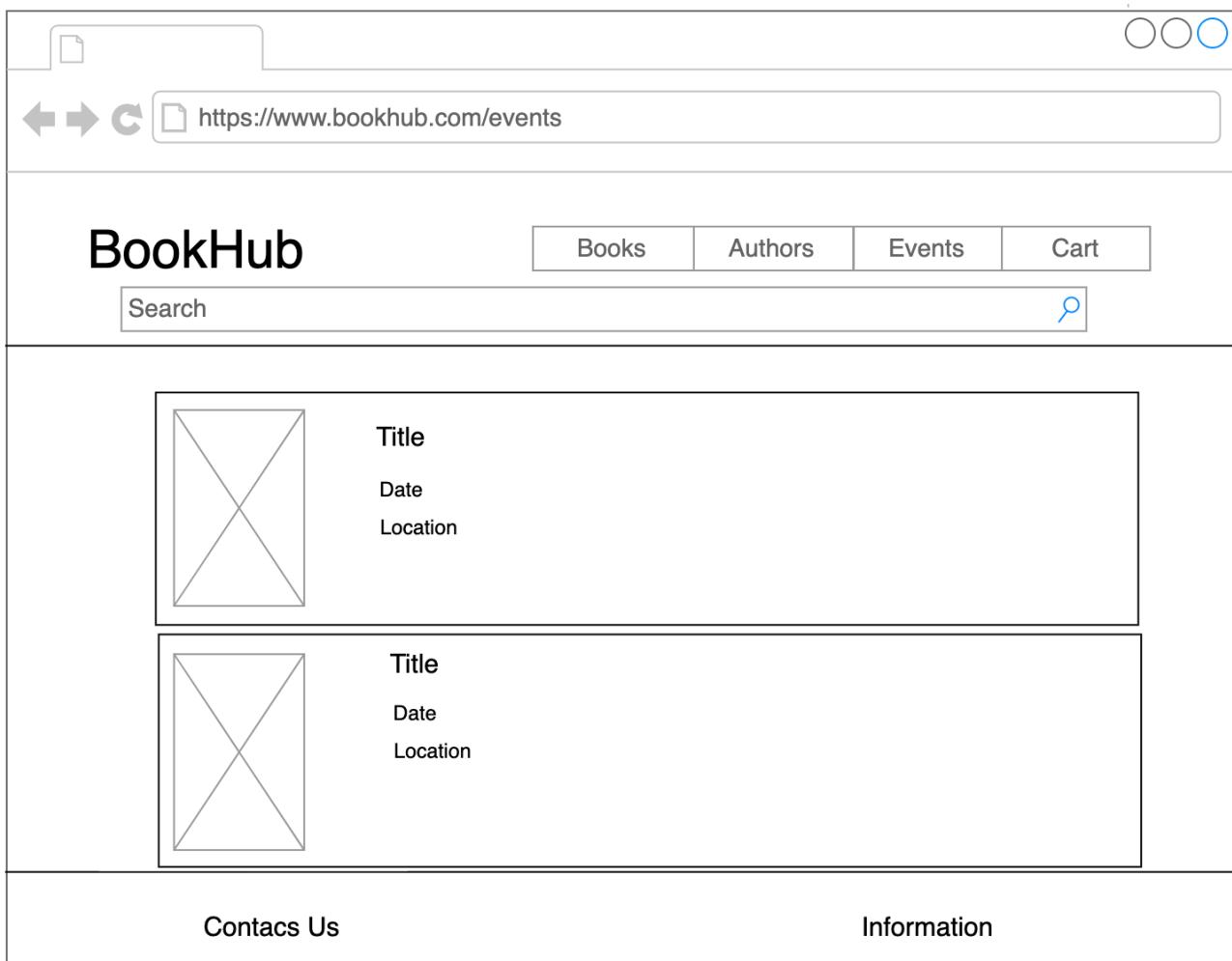


FIGURE 5 – EVENT PAGE

The screenshot shows a web browser window with the URL <https://www.bookhub.com/cart.html>. The page header includes the BookHub logo, a navigation bar with links for Books, Authors, Events, and Cart, and a search bar. The main content area displays a table of items in the cart:

Product	Price	Quantity	Subtotal
Item 1	price1	1	Subtotal1
Item 2	price2	2	Subtotal2
Item 3	price3	3	Subtotal3

Below the table, a message says "Subtotal: total price". A blue "Checkout" button is prominently displayed. At the bottom of the page are links for "Contacs Us" and "Information".

FIGURE 6 – CART PAGE

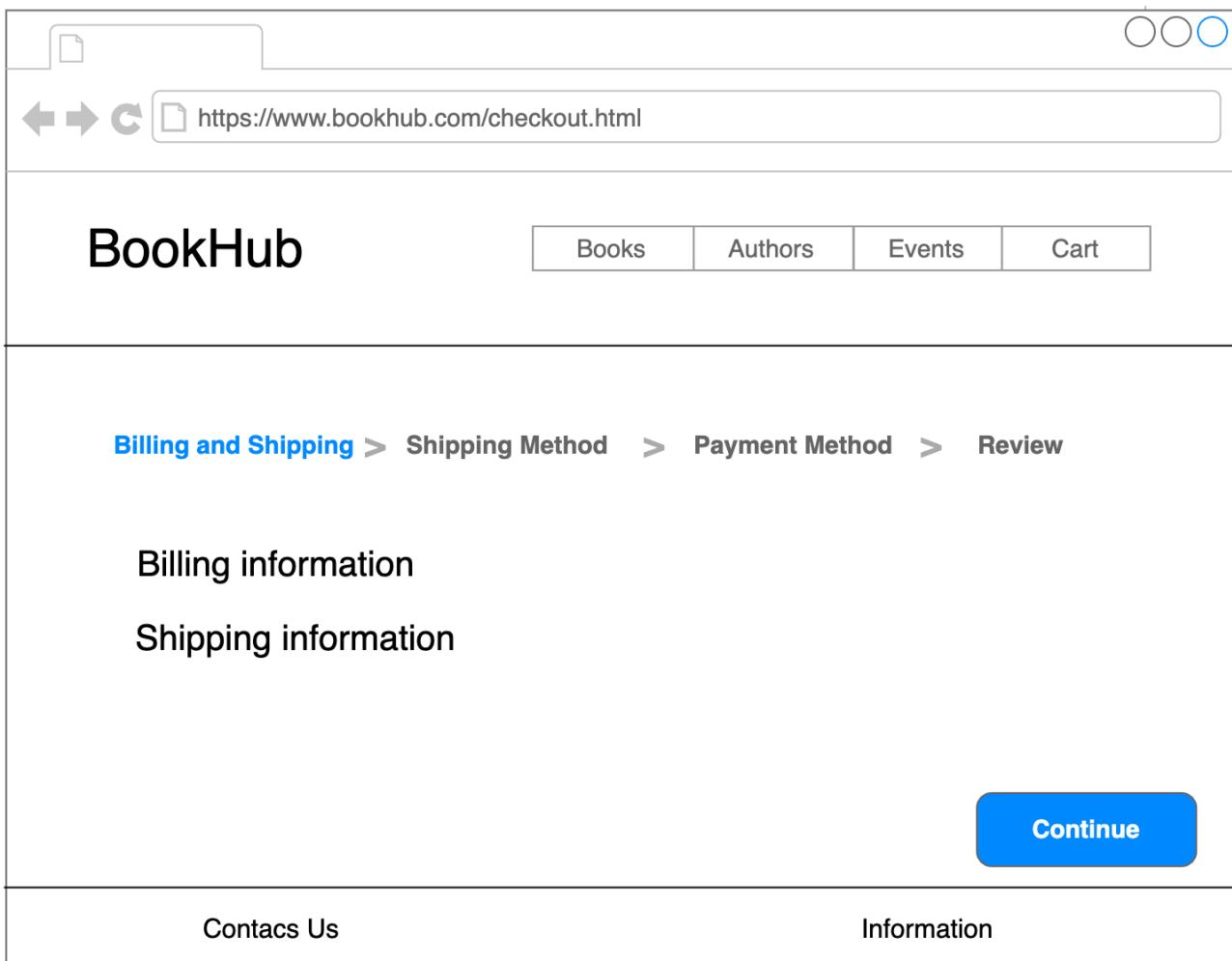


FIGURE 7 – CHECKOUT PAGE

The screenshot shows a web browser window for the BookHub website at <https://www.bookhub.com/checkout-shipping.html>. The page is titled "Shipping Method". At the top, there is a navigation bar with links for Books, Authors, Events, and Cart. Below the navigation bar, the breadcrumb trail shows the current step: Billing and Shipping > Shipping Method > Payment Method > Review. The main content area is titled "Shipping Method" and contains three options: Option 1, Option 2, and Option 3. Option 3 is selected, indicated by a checked checkbox. A blue "Continue" button is located to the right of the options. At the bottom of the page, there are links for "Contacs Us" and "Information".

Billing and Shipping > **Shipping Method** > Payment Method > Review

Shipping Method

Option 1
 Option 2
 Option 3

Continue

Contacs Us Information

FIGURE 8 – CHECKOUT SHIPPING METHOD PAGE

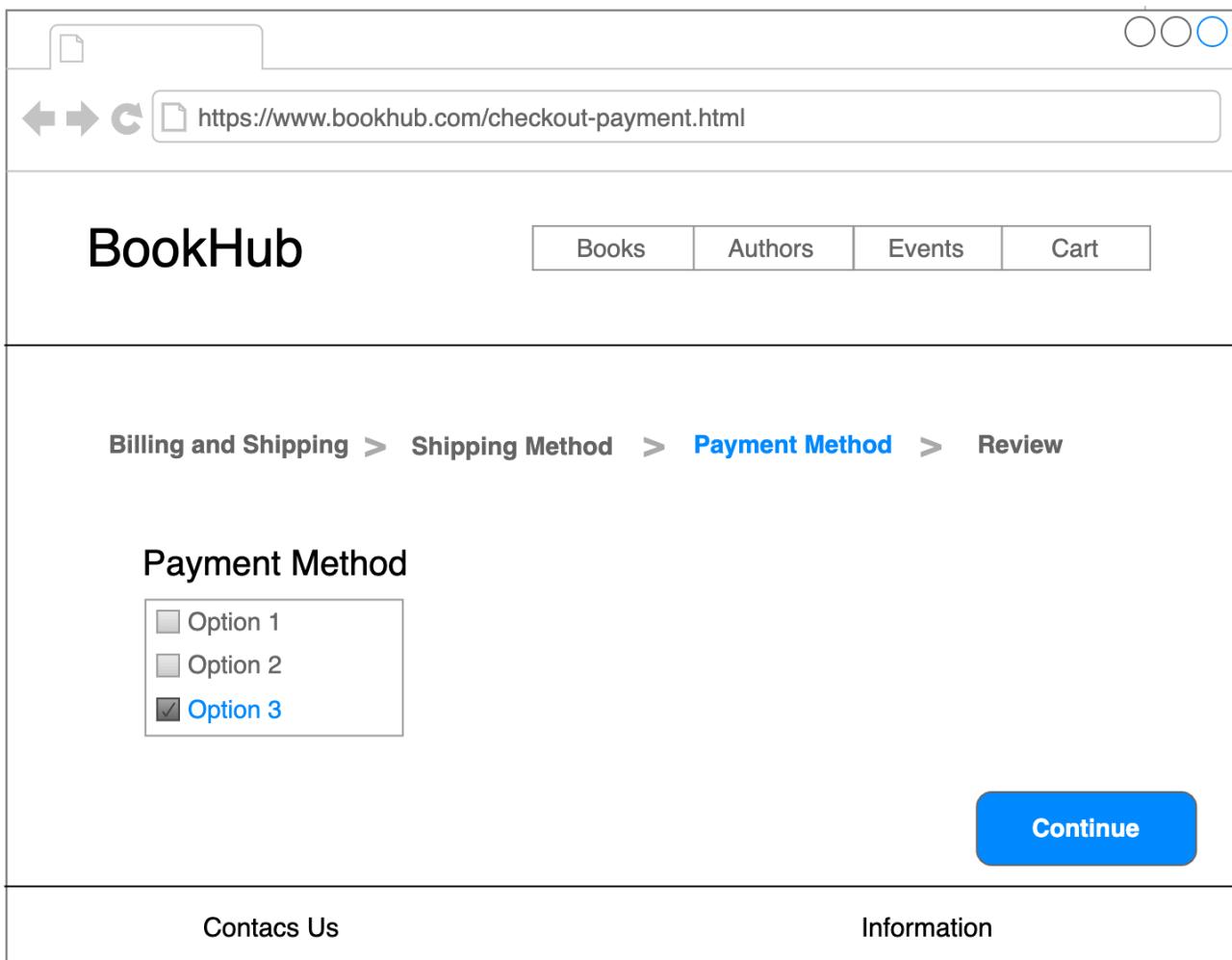


FIGURE 9 – CHECKOUT PAYMENT METHOD PAGE

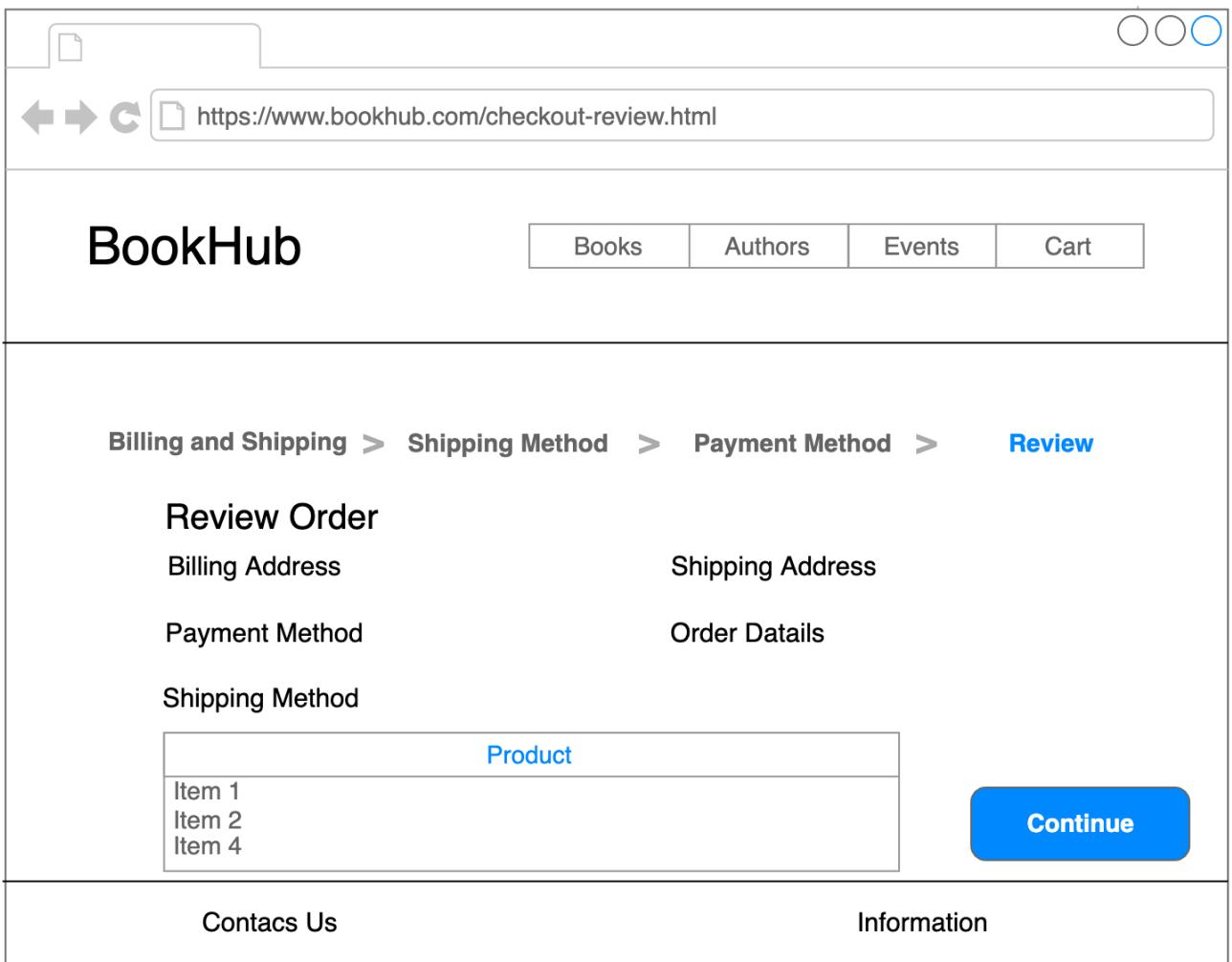


FIGURE 10 – CHECKOUT REVIEW PAGE

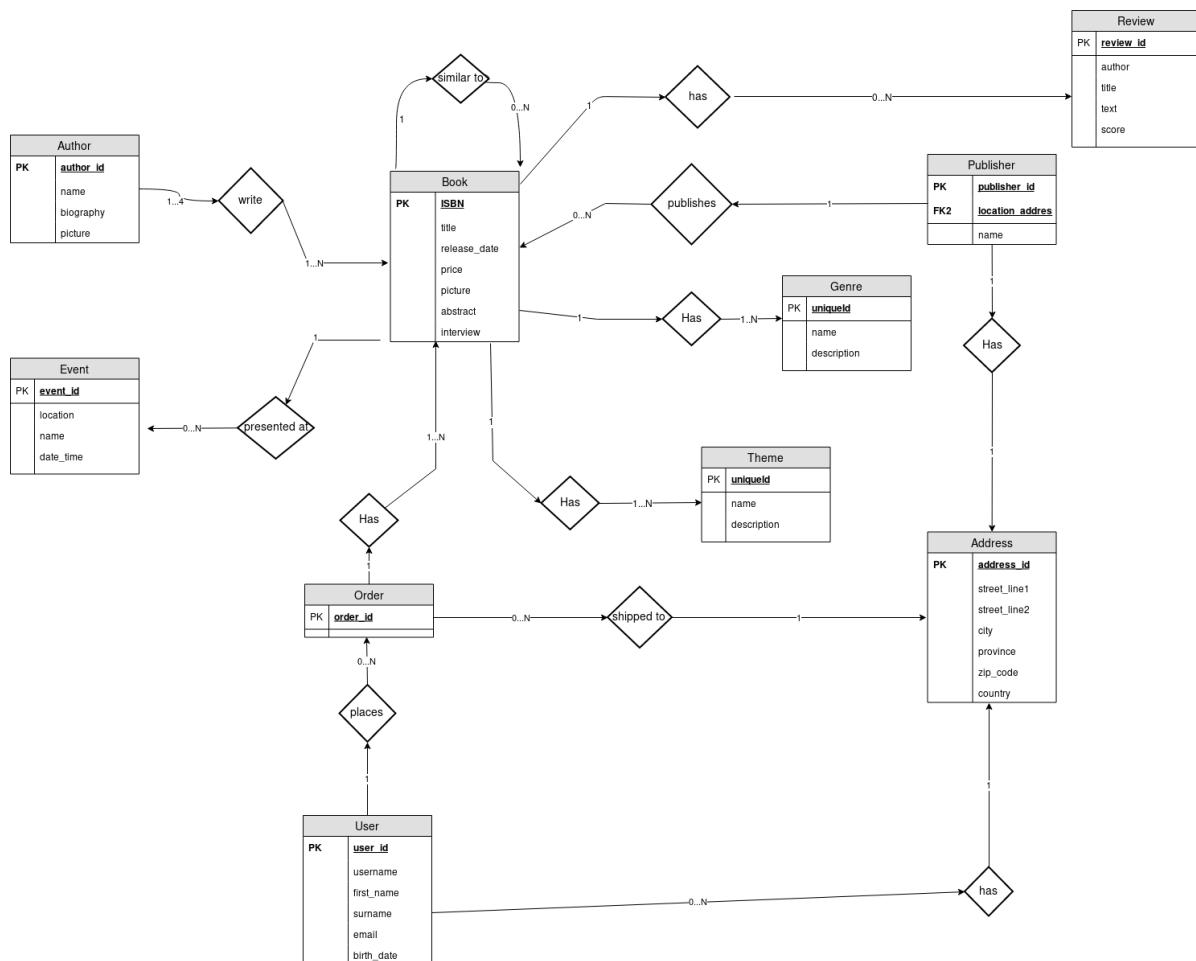
Database Design

In the **ER diagram** we have represented the main **entities**, along with their **attributes**, that we thought may be useful in the implementation of our application, and the **relations** between them.

The entities we have found are:

- **Author:** The author of a book
- **Event:** An event in which a book is presented
- **Book:** a book that a user can order through the website
- **Order:** an order executed by a user, contains various books
- **User:** a user registered to the web application
- **Address:** contains all the data of a specific address, used in many contexts of the website
- **Publisher:** the editor of a book
- **Review:** a review of a book that can be written by a user
- **Genre:** the genre of a book
- **Theme:** the theme of a book
- **Cart:** a temporary list of books that a User wishes to order

Here is the ER diagram, that highlights all the Entities, and the type and cardinality of relations existing among them:



To represent the multiple relations shown above, we created in the database the following relations, with a little explanation on why we decided to do so:

- **Author_book**: many authors can write the same book
- **Book_genre**: a book may belong to more than one genre
- **Theme_genre**: a book may belong to more than one theme
- **Cart_book**: each cart has a list of more books, each one with a quantity
- **Similar_book**: a book may be similar to more than one book