

Department of Computer Science and Engineering



**POLITECNICO  
MILANO 1863**

## **Design Document (DD)**

### **Shelf Awareness e-Bookstore**

**-v1.0-**

*Ana Pesko*

*ana.pesko@mail.polimi.it*

*Laura Schiatti*

*laura.schiatti@mail.polimi.it*

*Jefimija Zivkovic,*

*jefimija.zivkovic@mail.polimi.it*

June 20th, 2019

## **Abstract**

The purpose of this document is to discuss aspects regarding the design and modelling decisions made to develop Shelf Awareness. It is focused specially on giving details about the Interactive Dialogue Model followed. Shelf Awareness is an online BOOK STORE containing paper-based and digital books, their authors and book signing events.

## Graphical representations: C-IDM and L-IDM schemes

### ***Textual Descriptions***

- **Single Topic (or Topics)**
  1. Ordering and Shipping: *general info about how to place orders, delivery process, etc*
  2. Contact Us: *relevant contacts for this website*
- **Multiple Topics (Kinds of Topic)**
  1. Book: *the description of an available book*
  2. Author: *the description of an author, writer of one or more books*
  3. Event: *the description of the presentation event of a book*
- **Relevant Relationships**
  1. Written-by?: Book-->Author [1-1]; *if a book is the subject, you can switch to the corresponding author*
  2. Writes?: Author-->Book Key [1-N]; *if an author is the subject, you can switch to the books written by him*
  3. Other similar books?: Book-->Book [1-N]; *if a book is the subject, you can switch to the books that are similar to it*
  4. Where is it presented?: Book-->Event [1-N]; *if a book is the subject, you can switch to the events in which it will be presented*
  5. Details on book presented here: Event--> Book [1-1]; *if an event is the subject, you can switch to the book being presented on it*
- **Multiple Groups**
  1. Books by theme: *the set of books of the same theme T*
  2. Books by literary genre: *the set of books of the same genre G*
- **Groups of Topics**
  1. Best sellers this month: *those books that were sold the most in the current month*
  2. Our favorite readings: *those books that the bookstore considers the most interesting ones for the readers*

3. All events this month: *the complete set of events taking place in the current month*
4. All themes (grouping all groups\*): *the complete set of themes of books are available in the bookstore*
5. All literary genres (grouping all groups\*): *the complete set of literary genres of books are available in the bookstore*
6. All authors: *the complete set of authors whose books are available in the bookstore*

### C-IDM schema

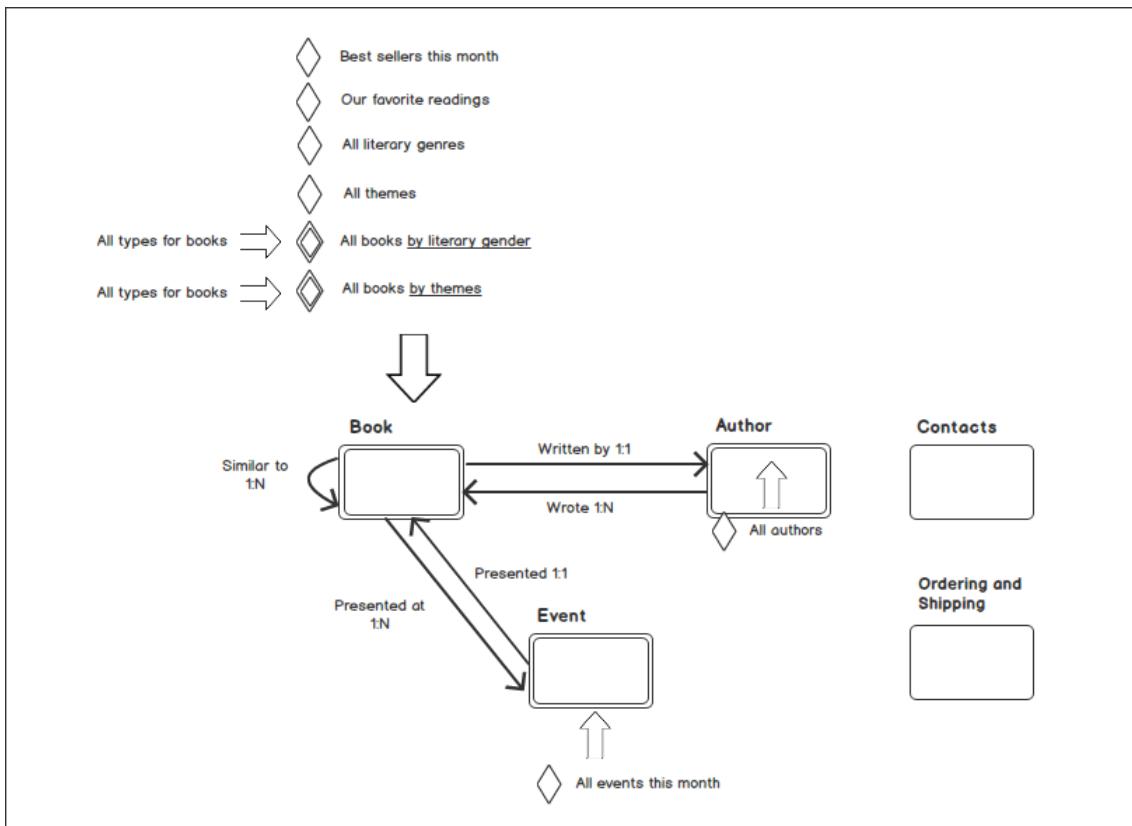


Figure 1. C-IDM schema for shelf awareness

## L-IDM schema

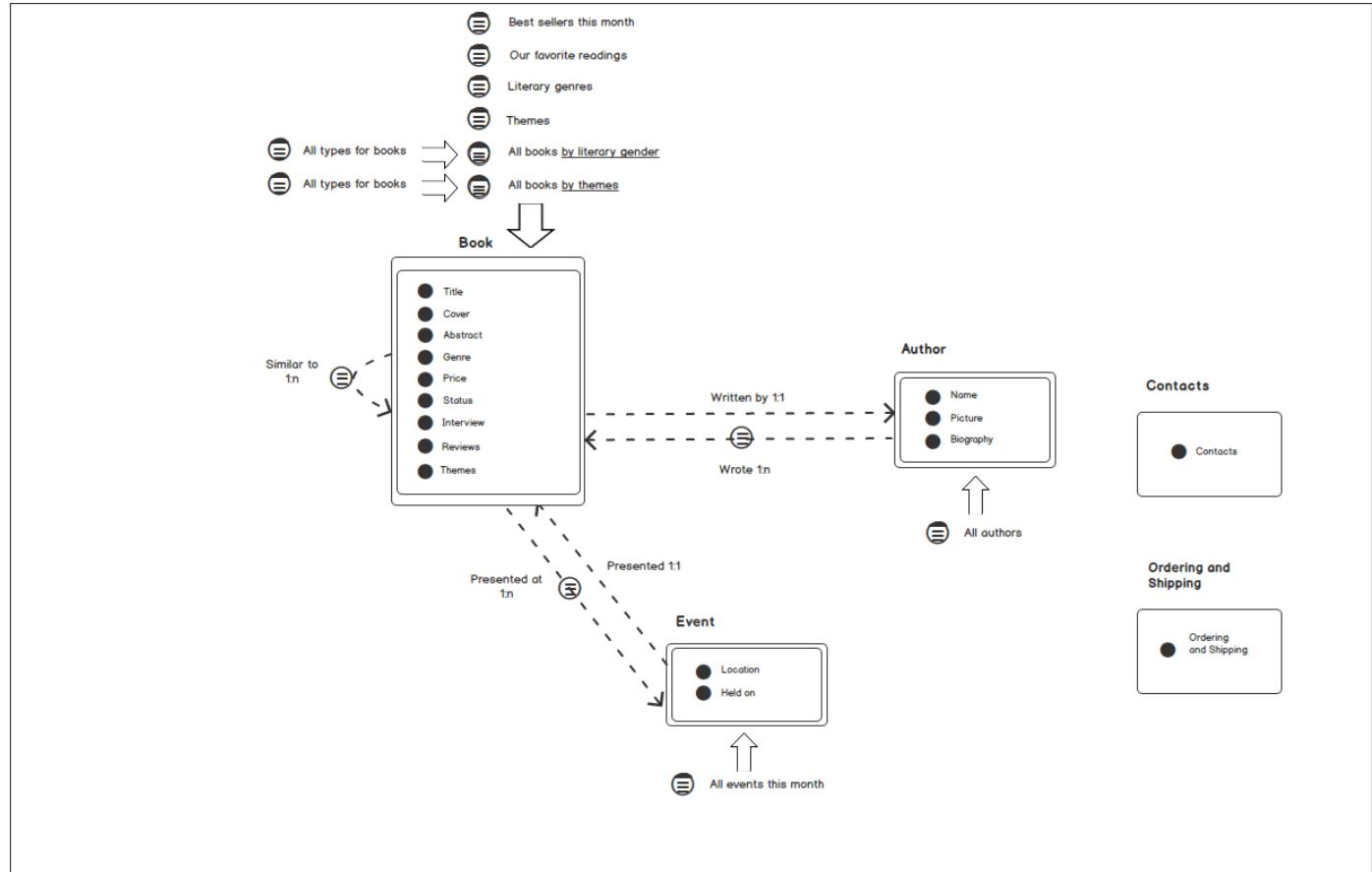


Figure 2. L-IDM schema for shelf awareness

## Scenarios

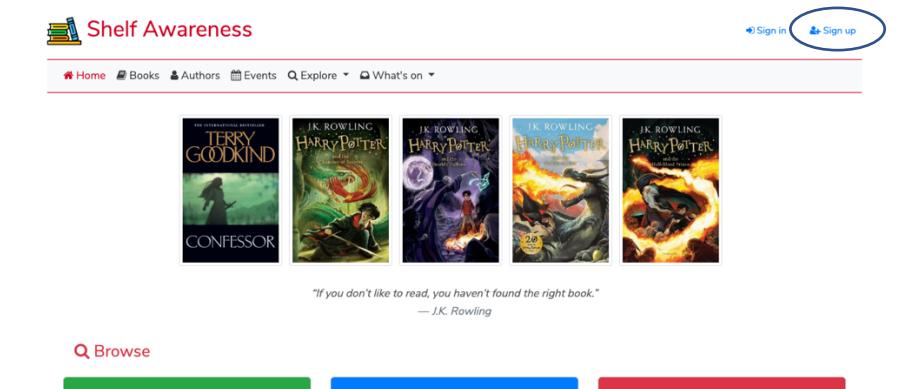
### Scenario 1: Book Reservation

**Description:** Andrea already registered on the website and wants to get a fantasy book among those available in the system.

#### **Execution steps:**

To do so, Andrea must

1. Login into the system, access the form and fill it up



2. Search book by literary genre (by means of "explore" landmark)

The screenshot shows the Shelf Awareness website. At the top, there's a navigation bar with links for Home, Books, Authors, Events, Explore (which is highlighted with a red oval), and What's on. Below the navigation is a grid of book covers. One book cover for 'Confessor' by Terry Goodkind is circled in red. A quote by J.K. Rowling is displayed at the bottom: "If you don't like to read, you haven't found the right book." — J.K. Rowling. Below the main content area are three buttons: Events (green), Books (blue), and Authors (red). At the bottom, there's a footer with sections for About Us, Help, More Info, and Additional Info, each with its own set of links.

### 3. Select the book he prefers

The screenshot shows the Shelf Awareness website with the search results for the 'Fantasy' genre. The results page includes a header with the genre name and a back arrow. Below the header is a grid of book covers. The first book in the grid, 'Confessor' by Terry Goodkind, has a green 'Fantasy' tag above it and is circled in red. The other books shown are 'Harry Potter and the Chamber of Secrets' and 'Harry Potter and the Deathly Hallows', both by J.K. Rowling, with their respective genre tags.

### 4. Add it to his cart

The screenshot shows a product page for the book "Confessor" by Terry Goodkind. At the top, there's a navigation bar with links for Home, Books, Authors, Events, Explore, and What's on. A user profile for Ana Pesko is shown with options to sign out and view the cart. The main content area displays the book cover, title, author, price (\$10.60 eur), and availability status (AVAILABLE). Below the book details is a section titled "Abstract" containing a short summary of the plot. Underneath the abstract are sections for "Genre" (Fantasy) and "Interview". A quantity selector shows "1" and a red "Add to cart" button, which is circled in blue. Below the cart button is a link to "Review this product". At the bottom of the page, there are sections for "Related info" (Similar books to Confessor, Book signing events) and "See also" (All books by genre Fantasy). The footer contains links for About Us, Help, More Info, and Additional Info, along with copyright information.

## 5. Check his cart and purchase (functionality not implemented)

The screenshot shows the "Book Reservation" section of the website. It features a "Shopping cart" header with a number "4" indicating four items. Below this is a table showing the cart contents: a copy of "Confessor" by Terry Goodkind at a price of 10.60€, with a quantity of 1. To the right of the cart table is an "Overview" section showing the "Cart subtotal: 10.60€" and a red "Purchase" button, which is circled in blue. The footer is identical to the one in the previous screenshot, containing links for About Us, Help, More Info, and Additional Info, along with copyright information.

## Scenario 2: User Registration

- **Description:** Carlo wants to register into the system to have access to books available in the system.
- **Execution steps:**

To do so, Carlo must

## 1. Access the website

The screenshot shows the homepage of Shelf Awareness. At the top, there's a navigation bar with links for Home, Books, Authors, Events, Explore, and What's on. On the far right of the bar are 'Sign in' and 'Sign up' buttons, with 'Sign up' highlighted by a blue oval. Below the bar, there's a row of five book covers: 'The International Bestseller CONFESSOR' by Terry Goodkind, 'HARRY POTTER AND THE CHAMBER OF SECRETS' by J.K. Rowling, 'HARRY POTTER AND THE PRISONER OF AZKABAN' by J.K. Rowling, 'HARRY POTTER AND THE GOBLET OF FIRE' by J.K. Rowling, and 'HARRY POTTER AND THE DEATHLY HALLOWS' by J.K. Rowling. A quote from J.K. Rowling is displayed: "If you don't like to read, you haven't found the right book." Below the quote, there's a 'Browse' section with three buttons: 'Events' (green), 'Books' (blue), and 'Authors' (red). At the bottom of the page, there are four columns of links: 'About Us', 'Help', 'More Info', and 'Additional Info'. The 'About Us' column includes a welcome message about the bookstore's mission. The 'Help' column includes links for Ordering & Shipping, Contact Us, and FAQ. The 'More Info' column includes links for Payment Options, Terms of use, and Privacy. The 'Additional Info' column includes links for Latest products and Gift cards. The footer contains a copyright notice: © 2019 Shelf Awareness, Inc.

## 2. Submit the registration form

The screenshot shows the sign-up form for Shelf Awareness. It features a red header with the 'Shelf Awareness' logo. Below the header are five input fields: 'Name', 'Email', 'Password', 'Address', and 'Credit card'. A large red 'Sign up' button is centered at the bottom of the form. The entire form area is enclosed in a blue oval. At the very bottom of the page, there's a small copyright notice: © 2019.

## Design-in-the-Small

The complete list of all the pages in the P-IDM are listed next.

### **Page structure (in the small) for a Topic Page (*Single Topics*)**

In this category there are pages for ordering and shipping and contact us.

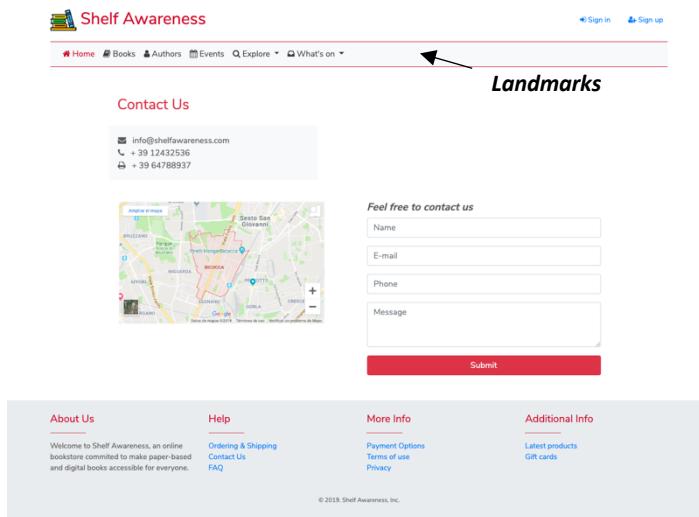


Figure 3. *contact\_us.html* commented screenshot

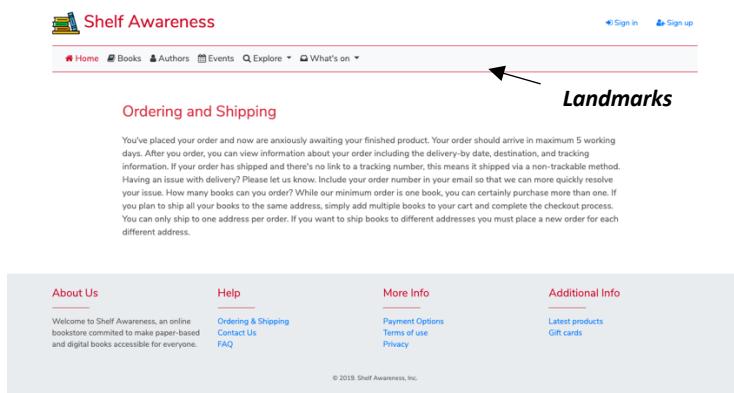


Figure 4. *ordering\_and\_shipping.html* commented screenshot

### **Page structure for a Kind of Topic Page (*Multiple Topics*)**

In this category there are pages for a given author, book and event.

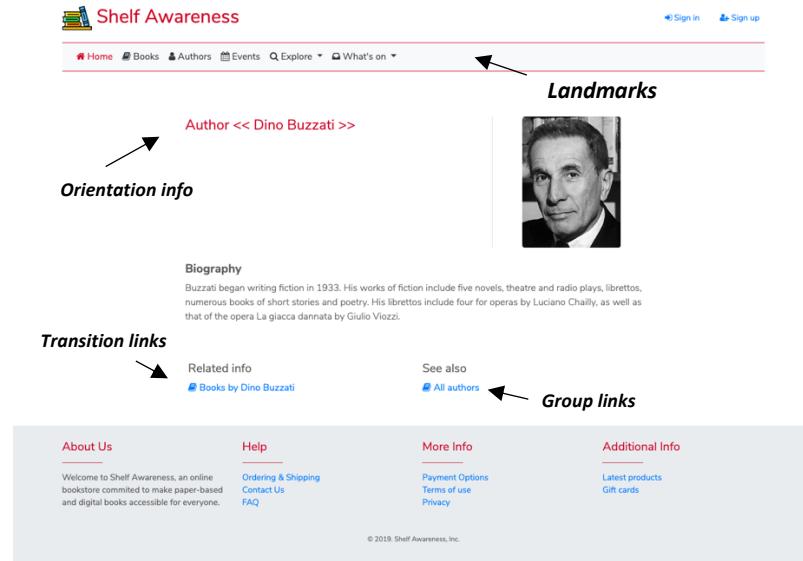


Figure 5. *author.html* commented screenshot

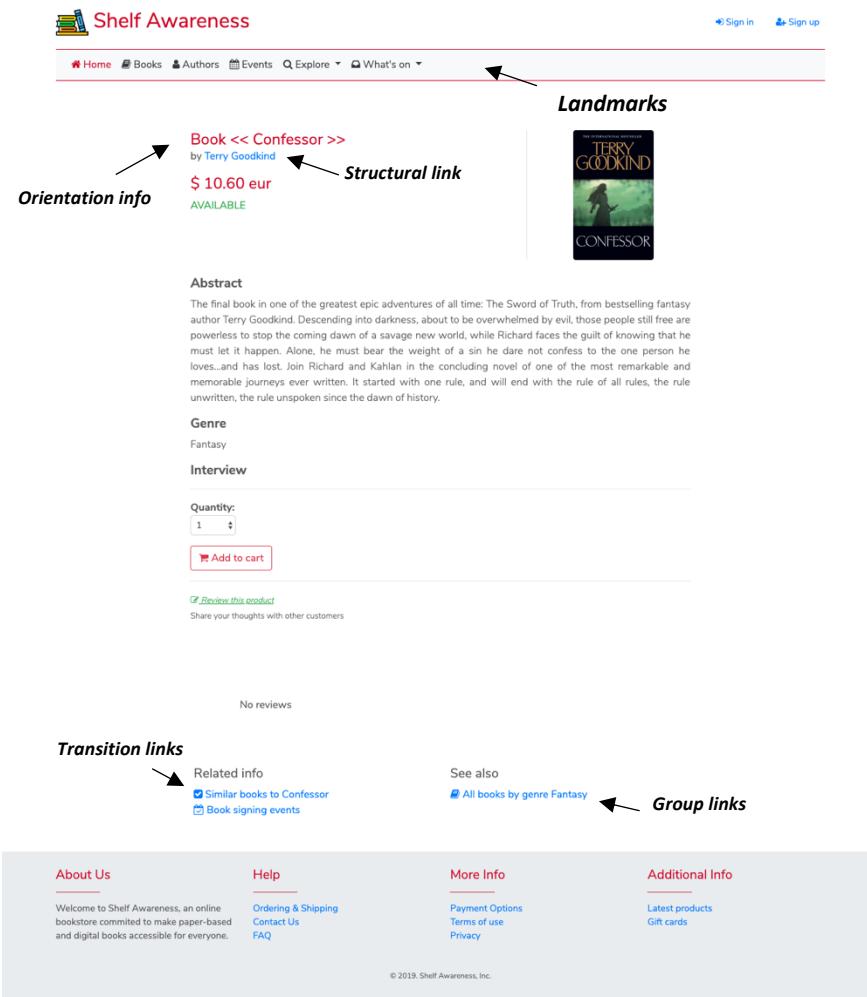


Figure 6. *book.html* commented screenshot

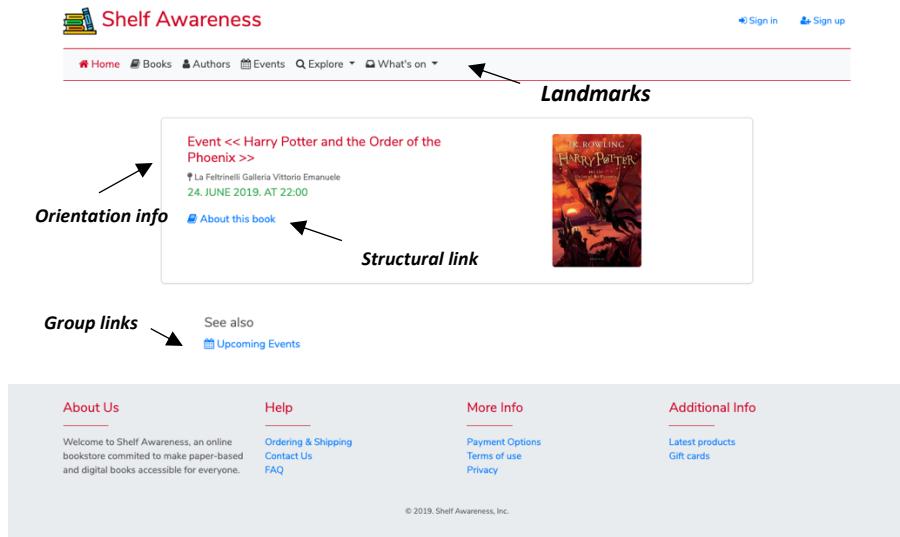


Figure 7.event.html commented screenshot

### Page structure for a Transition Page (1:N Relevant Relationships)

In this category there are pages for each 1-N relevant relationship, this means, for books of a given author, and similar books and events associated to a book

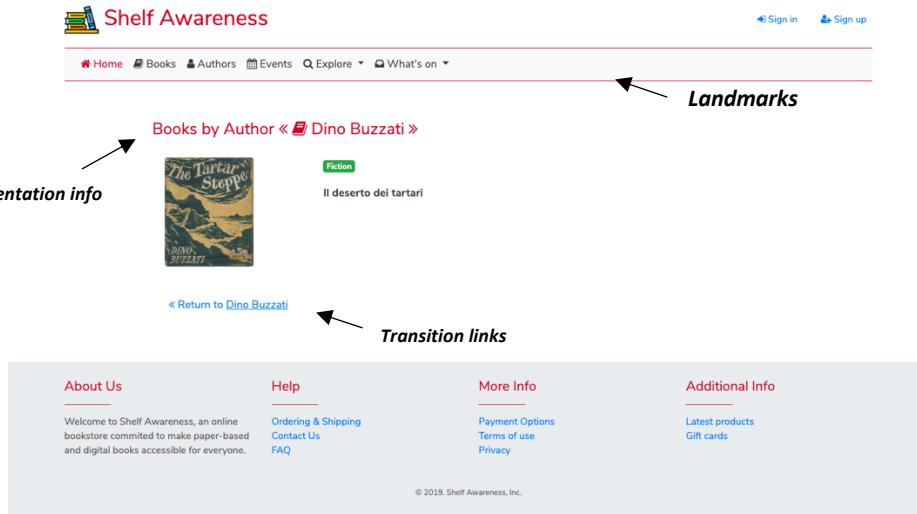


Figure 8.books\_by\_author.html commented screenshot

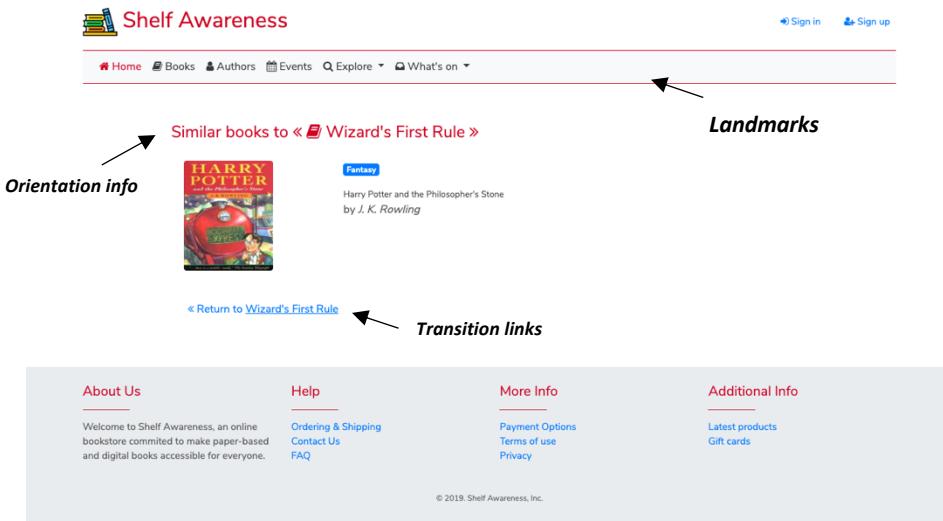


Figure 9.*similar\_books.html* commented screenshot

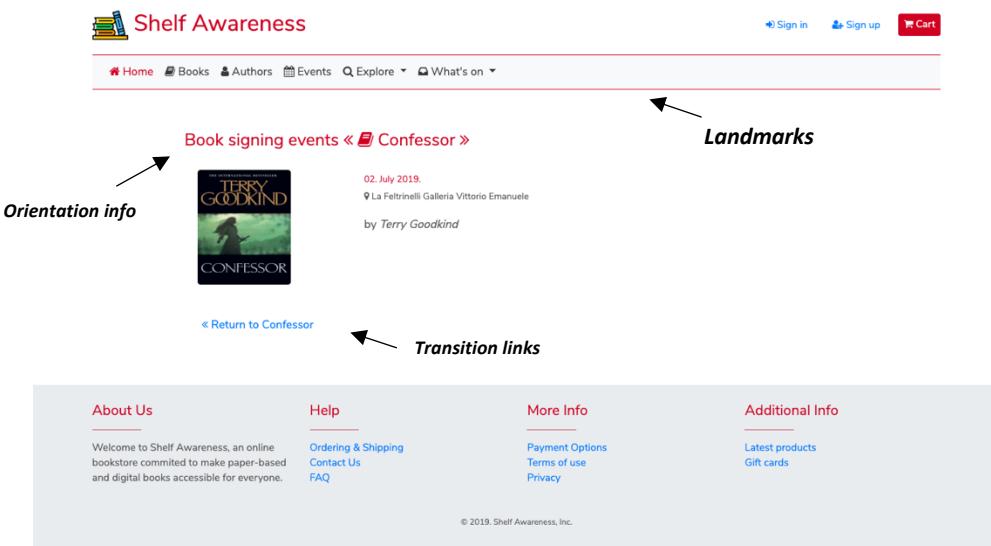


Figure 10.*events\_by\_book.html* commented screenshot

## Page structure for a the Introductory Page (*Groups of Topics* )

In this category there are pages regarding groups of topics, as best sellers, or all themes.

The screenshot shows the 'Best sellers this month' section. At the top, there's a navigation bar with links for Home, Books, Authors, Events, Explore, and What's on. A red arrow points from the word 'Landmarks' in the navigation bar down to a group of three book entries. Each entry includes a small image of the book cover, the title, the author, a genre tag (e.g., Horror, Fiction), and a 'Read more' link. A curly brace on the right side of the three entries is labeled 'Group links'. Below this section is a footer with links for About Us, Help, More Info, and Additional Info, along with copyright information.

★ Best sellers this month

**Stephen King**  
*Misery*  
by Stephen King  
Horror  
Read more

**Dino Buzzati**  
*Il deserto dei tartari*  
by Dino Buzzati  
Fiction  
Read more

**About Us**  
Welcome to Shelf Awareness, an online bookstore committed to make paper-based and digital books accessible for everyone.

**Help**  
Ordering & Shipping  
Contact Us  
FAQ

**More Info**  
Payment Options  
Terms of use  
Privacy

**Additional Info**  
Latest products  
Gift cards

Figure 11.*best\_sellers.html* commented screenshot

The screenshot shows the 'Our favorite readings' section. The layout is identical to Figure 11, featuring a navigation bar with a 'Landmarks' link pointing to a group of three book entries. The entries are for 'Confessor' by Terry Goodkind (Fantasy), 'Misery' by Stephen King (Horror), and 'Phantom' by Terry Goodkind (Fantasy). Each entry includes a book cover image, title, author, genre, and a 'Read more' link. A curly brace on the right side of the three entries is labeled 'Group links'. The footer contains standard links for About Us, Help, More Info, and Additional Info.

Bookmarks

**Terry Goodkind**  
*CONFESSOR*  
by Terry Goodkind  
Fantasy  
Read more

**Stephen King**  
*Misery*  
by Stephen King  
Horror  
Read more

**Terry Goodkind**  
*PHANTOM*  
by Terry Goodkind  
Fantasy  
Read more

**About Us**  
Welcome to Shelf Awareness, an online bookstore committed to make paper-based and digital books accessible for everyone.

**Help**  
Ordering & Shipping  
Contact Us  
FAQ

**More Info**  
Payment Options  
Terms of use  
Privacy

**Additional Info**  
Latest products  
Gift cards

Figure 12.*favorite\_readings.html* commented screenshot

**Shelf Awareness**

Home Books Authors Events Explore What's on

Landmarks

Events this month

24.June 2019  
La Feltrinelli Galleria Vittorio Emanuele  
by J. K. Rowling  
[Read more](#)

29.June 2019  
La Feltrinelli Galleria Vittorio Emanuele  
by Terry Goodkind  
[Read more](#)

About Us Help More Info Additional Info

Welcome to Shelf Awareness, an online bookstore committed to make paper-based and digital books accessible for everyone.

Ordering & Shipping Contact Us FAQ Payment Options Terms of use Privacy Latest products Gift cards

© 2019 Shelf Awareness, Inc.

Figure 13.events\_this\_month.html commented screenshot

**Shelf Awareness**

Home Books Authors Events Explore What's on

Landmarks

Themes

Love See books War See books Revenge See books Betrayal See books

Survival See books Grace See books Isolation See books Childhood See books

Forgiveness See books Treachery See books Peace See books Magic See books

Mythology See books Sacrifice See books

About Us Help More Info Additional Info

Welcome to Shelf Awareness, an online bookstore committed to make paper-based and digital books accessible for everyone.

Ordering & Shipping Contact Us FAQ Payment Options Terms of use Privacy Latest products Gift cards

© 2019 Shelf Awareness, Inc.

Figure 14.all\_themes.html commented screenshot

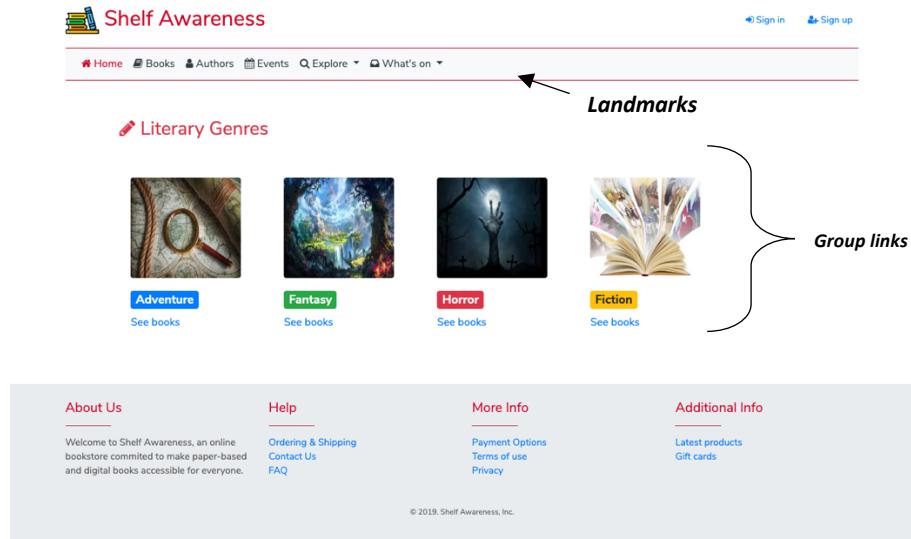


Figure 13.all\_literary\_genres.html commented screenshot

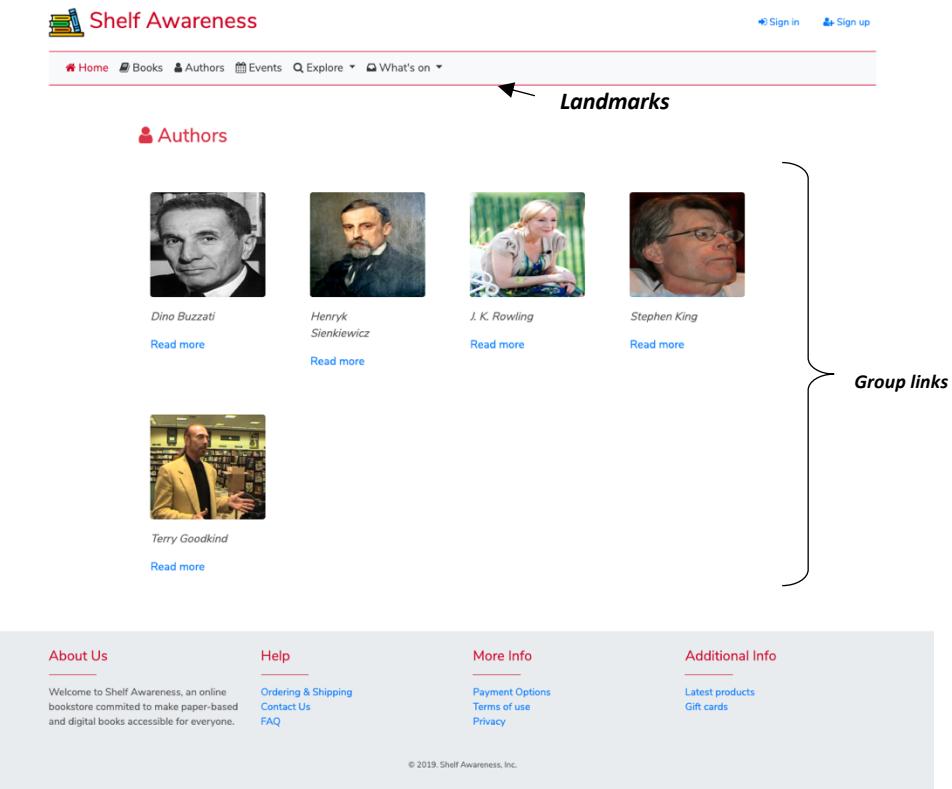


Figure 14.all\_authors.html commented screenshot

### Page structure for a the Introductory Page (*Multiple Groups of Topics*)

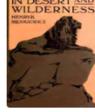
In this category there are pages regarding groups of topics, as best sellers, or all themes.

**Shelf Awareness**

Home Books Authors Events Explore What's on Landmarks

**Orientation info**

Genre « Adventure »



**Group links**

About Us Help More Info Additional Info

Ordering & Shipping Contact Us Payment Options Terms of use Privacy Latest products Gift cards

© 2019, Shelf Awareness, Inc.

Figure 16. *all\_books\_by\_genre.html* commented screenshot

**Shelf Awareness**

Home Books Authors Events Explore What's on Landmarks

**Orientation info**

Theme « Love »



**Group links**

About Us Help More Info Additional Info

Ordering & Shipping Contact Us Payment Options Terms of use Privacy Latest products Gift cards

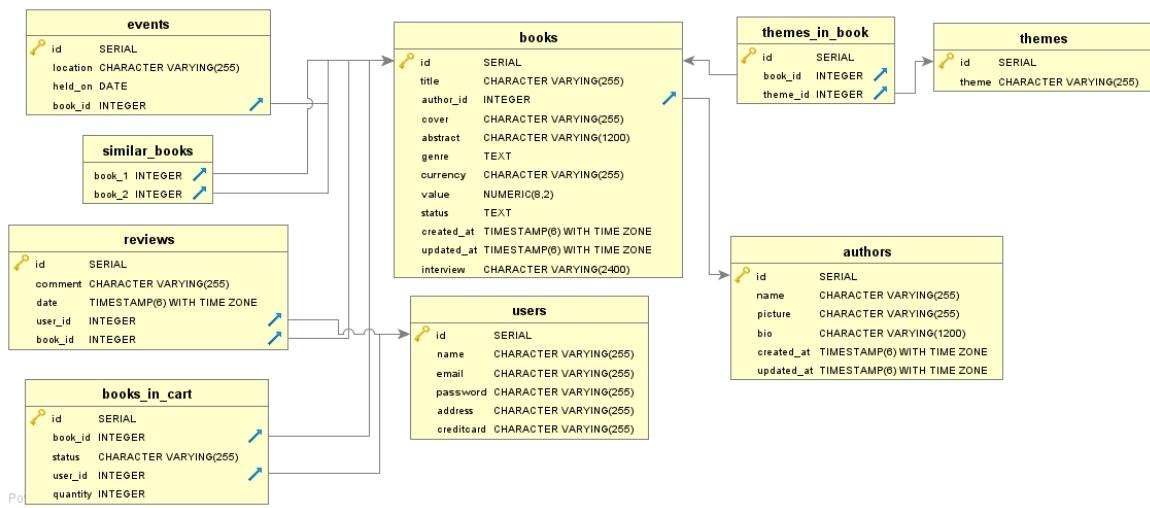
© 2019, Shelf Awareness, Inc.

Figure 17. *all\_books\_by\_theme.html* commented screenshot

## DB Design

### Highlights

- The E-R diagram contains the main entities considered in the app, these are books which are related to authors, events, reviews and similar books.
- There are also users that can access to reservation and reviews functionalities.
- The books a user adds to his cart are stored on an associated a table.
- Books can have several themes but only one genre, this is the reason why the genre is an attribute in the books table.



### Relational Tables for the main pages

<u>Page</u>	<u>Relational Tables</u>
Book - <i>book.html</i>	Authors - Books
Author - <i>author.html</i>	Authors
Event	Authors – Books - Events

Writes	Authors – Books
Similar Books	Similar Books
Where it is presented?	Authors – Books - Events

Best sellers this month	Authors – Books – Books_in_cart
-------------------------	---------------------------------

Our favorite readings	Authors – Books
All Events this month	Authors – Books - Events
All Themes	Themes
All Literary Genre	Authors – Books
All Authors	Authors

All Books by Literary Genre X	Authors – Books
All Books by Theme X	Authors – Books – Themes_in_book