## **Use case template - BIBLIOTECA**

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| ID and name | **UC1 - Register and Authenticate Subscriber** | | |
| Primary actor | Subscriber | Secondary actors | Library System |
| Description | Allows a new user to register an account or allows a subscriber to authenticate in order to access the library system .  For each subscriber, the system stores national identification number, name, address, phone number, a unique identification code within the library and a password. | | |
| Trigger | A user attempts to use a library terminal. | | |
| Preconditions | * PRE-1. The terminal must be operational. * PRE-2. The user must have valid personal information. | | |
| Postconditions | * POST-1. If registering, the user is added to the system as a subscriber. * POST-2. The subscriber is authenticated in the system. * POST-3. The subscriber gains access to their account. | | |
| Normal flow | 1. Authenticate 2. The user selects "Login" at the terminal. 3. The subscriber enters their unique identification code within the library and password. 4. The system verifies the credentials. 5. If valid, the system grants access and confirms authentication. | | |
| Alternative flows | 1.1 Register   1. The user selects "Register" at the terminal. 2. The system prompts for name, address, phone number and a unique identification number. 3. The user provides the required details. 4. The system creates a new subscriber account and generates a unique library ID. 5. The system confirms successful registration. | | |
| Exceptions | **1.1. E1** Incomplete or invalid registration details  If the user provides incomplete or invalid registration details, the system displays an error message and prompts for correction.  **1.0.E1** Incorrect login credentials  If the subscriber enters incorrect login credentials, the system displays an error message and allows another attempt. | | |

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| ID and name | **UC2 - Select and Borrow Books** | | |
| Primary actor | Subscriber | Secondary actors | Library System |
| Description | Allows a subscriber to browse, select, add cart, delete from cart and reserve available books. | | |
| Trigger | The authenticated subscriber accesses the Library System and selects one or more books to reserve. | | |
| Preconditions | * PRE-1. The subscriber must be authenticated. * PRE-2. The system must have an updated list of available books. | | |
| Postconditions | * POST-1. The selected books are reserved under the subscriber’s account. * POST-2. The availability status of the reserved books is updated in the system. | | |
| Normal flow | 1. Borrow books   1. The subscriber accesses the book list.  2. The subscriber searches for books using filters (searching on title and author).  3. The system displays a list of books based on the search criteria.  4. The subscriber selects the books they wish to reserve and the quantity.  5. The system checks if the quantity is available and adds the books to the cart.  6. The subscriber opens the cart menu and press the borrow button.  7. The system verifies the reservation conditions (availability).  8. If all conditions are met, the system marks the books as reserved for the subscriber.  9. The system confirms the reservation. | | |
| Alternative flows | 2.1 The subscriber doesn’t borrow any book  1. The subscriber accesses the book catalog.  2. The subscriber searches for books using filters or keywords.  3. The system displays a list of available books based on the search criteria.  4. The subscriber exit the Library System without borrowing any book. | | |
| Exceptions | **1.0.E1** Theselected book is no longer available. If a selected book is no longer available, the system notifies the subscriber.  **1.0.E2** The subscriber delete the book from cart or modify the quanitity. | | |

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| ID and name | **UC3 - Return Borrowed Books** | | |
| Primary actor | Librarian | Secondary actors | Library System |
| Description | Allows the librarian to return books. | | |
| Trigger | The librarian initiates a book return. | | |
| Preconditions | * PRE-1. The system must have an interface for inventory management. * PRE-2. The librarian must be authenticated in the system and have the administrator rights. | | |
| Postconditions | * POST-1. The inventory is updated with the latest book availability. * POST-2. The changes are reflected in the book list for subscribers. * POST-3. The subscriber's borrowing record is updated. | | |
| Normal flow | 1.0 Update book copies.   1. The librarian selects the books return section. 2. The librarian fills the return form with the subscriber’s library ID, books ID and the number of copies. 3. The system applies the updates in the books list and in the subscriber’s borrowed books list. 4. The system confirms the changes. | | |
| Alternative flows | 1.1 The librarian doesn’t update anything  The librarian exits the return section without updating. | | |
| Exceptions | **1.0.E1** If the librarian tries to return a book not registered under the subscriber account, the system notifies the librarian.  **1.0.E2** If the librarian fills wrong subscriber identification data (the subscriber doesn’t exist in the system) the system notifies the librarian. | | |

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| ID and name | **UC4 - Manage Subscribers and Books List** | | |
| Primary actor | Librarian | Secondary actors | Library System |
| Description | Allows the librarian to manage the list of subscribers and books within the system. The librarian can view all subscribers, delete a subscriber, update book quantities, remove books or add new books. | | |
| Trigger | The librarian initiates the process by selecting the "Manage Library System" option after logging into the system. | | |
| Preconditions | * PRE-1. The librarian must be authenticated in the system. * PRE-2: The system must have an existing database of subscribers and books. | | |
| Postconditions | * POST-1. The system reflects the updated subscriber list if any changes were made. * POST-2. The system reflects the updated book inventory. * POST-3. The changes are reflected in the book list for subscribers. | | |
| Normal flow | 1.0 Update book copies.  1. The librarian navigates to the manage section.  2. The system displays a list of all subscribers and books.  3. The librarian selects an action:   * Manage Subscribers:   1. Selects a subscriber from the list.   2. Deletes the subscriber. * Manage Books:   1. Selects a book from the list.   2. Updates the book quantity.   3. Deletes the book from the system.   4. Adds a new book by entering details (title, author, publishing house, year, number of pages, type of book cover, number of copies and unique ID).   4. The system updates the database accordingly.  5. The system confirms the successful update. | | |
| Alternative flows | 1.1 The librarian doesn’t update anything  The librarian exits the return section without updating. | | |
| Exceptions | **1.0.E1**  If a subscriber deletion attempt fails due to dependencies (active book loans), the system notifies the librarian. | | |

Descriptions of template fields:

* **ID and name:** Title should be descriptive and should usually begin with a verb, e.g. order, calculate, input, etc. ID can have any format but must be unique among all use cases.
* **Primary actor:** Person that wishes to accomplish a goal through the use of the system. Only a single primary actor per use case.
* **Secondary actors:** Actors that have an interest in the completion of the goal but that do not directly interact with the system.
* **Description:** Concise description of the purpose of the use case.
* **Trigger:** Condition internal or external to the system that prompts the use case to start.
* **Preconditions:** Conditions that must be true before the use case starts. Each should be labeled with an ID unique to the use case.
* **Postconditions:** Conditions that must be true after the use case ends normally. Each should be labeled with an ID unique to the use case.
* **Normal flow:** Detailed step-by-step description of the logical flow of the use case. It should describe an explicit two way interaction, with the system prompting for input and the actor responding accordingly. Each step should be numbered.
* **Alternative flows:** Flows that achieve the same goal as the normal flow but are expected to be less common or lower priority.
* **Exceptions:** Conditions that result in the normal flow ending prematurely due to an unrecoverable condition in the system. The condition that causes the flow should be clearly stated, as should be any other decisions that the actor must make in this situation.