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| --- | --- | --- | --- |
| ID and name | UC-1: Login | | |
| Primary actor | Client or Librarian | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | - | | |
| Postconditions | POST1: The user is logged in to the system. | | |
| Normal flow | 1. **Login** 2. The system displays the login form and prompts the user for username and password. 3. The user inserts his username and password and clicks the login button. 4. The system displays the main window for the logged in actor (UC2). | | |
| Alternative flows |  | | |
| Exceptions | **1.0.E1 Invalid credentials**   1. The system informs the user that there is no match in the database for the entered credentials. 2. The system restarts the use case. | | |

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| ID and name | UC2: View books | |
| Primary actor | Client or Librarian |
| Trigger | The user has logged in. | |
| Preconditions | PRE1: The user is logged in to the system. | |
| Postconditions | - | |
| Normal flow | **2.0 View books**   1. The system displays all available books | |
| Alternative flows | - | |
| Exceptions | - | |

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| --- | --- | --- | --- |
| ID and name | UC-3: Add book/books | | |
| Primary actor | Librarian | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1: Librarian is logged into the system | | |
| Postconditions | POST-1: Book/s is/are stored in the system.  POST-2: Inventory of available books is updated. | | |
| Normal flow | 3.0 Librarian adds a new book in the system   1. Librarian completes the text fields with the details of the new book alongside the number of copies that will be available to the clients. 2. Librarian presses the “Add” button. 3. The information is stored into the system and the inventory is updated automatically. | | |
| Alternative flows |  | | |
| Exceptions | 3.0 E1 The number of copies given is not a natural number > 0   1. Librarian will get an error message “Modify number of copies to a natural number bigger than 0.” and will be asked to modify the number of copies to a natural number >0 2. The library system restarts use case   3.0 E2 The title or/and author field are left blank   1. Librarian will get an error message and will be asked to complete the field/fields. 2. The library system restarts use case. | | |

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| ID and name | UC-4: Rent book/books | | |
| Primary actor | Client | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1: Client is logged into the system. | | |
| Postconditions | POST-1: Inventory of available books is updated.  POST-2: The client collection of rented books is updated.  POST-3: The rental status is changed to “rented” | | |
| Normal flow | 4.0 Rent book/books   1. Client selects the wanted book from the table 2. Client completes the text field under the table with the number of copies wanted. 3. Client presses the “Reserve book” button. 4. The inventory of available books and also the client collection of rented book are updated. | | |
| Alternative flows | 4.1 The client “penalty” score is higher than 50   1. The client will get an error message: “Penalty score is higher than 50!” letting him know that he can’t rent any books at the moment. | | |
| Exceptions | 4.0 E1 Client did not select any item from the table   1. Client will get an error message “You did not select any item” and will be asked to select one item from the table. 2. The library system restarts use case.   4.0 E2 The number of copies given is <=0 or > than the amount of copies available   1. Client will get an error message and will be asked to modify the number of copies to a natural number >=0 and < amount of copies available. 2. The library system restarts use case. | | |

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| --- | --- | --- | --- |
| ID and name | UC-5: Return book | | |
| Primary actor | Client | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1: Client is logged into the system. | | |
| Postconditions | POST-1: Inventory of available books is updated.  POST-2: The client collection of rented books is updated.  POST-3: The status of the rental is set to “waiting” | | |
| Normal flow | 5.0 Return book   1. Client clicks the “Rented books” button from his main view 2. The library system displays all the rented books that the client has. 3. Client selects one item from the table 4. Client clicks the “Return” button. 5. The inventory of available books and also the client collection of rented book are updated. | | |
| Alternative flows |  | | |
| Exceptions | 5.0 E1 Client did not select any item from the table   1. Client will get an error message: “You did not select any item” and will be asked to select one item from the table. 2. The library system restarts use case. | | |

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| --- | --- | --- | --- |
| ID and name | UC-6: Confirm return | | |
| Primary actor | Librarian | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1:Librarian is logged into the system | | |
| Postconditions | POST-1: Inventory of available books is updated.  POST-2: The status of the rental is set to “returned” | | |
| Normal flow | 6.0 Confirm return with no penalty   1. Librarian clicks the “Rentals” button on his main view. 2. Librarian selects one item from the table that has the status “waiting” 3. Librarian clicks the button “Confirm return” 4. The inventory and the rental status are updated. | | |
| Alternative flows | 6.1 Confirm return with penalty   1. Librarian completes the penalty text field 2. Return to step 3 of normal flow | | |
| Exceptions | 6.1 E1 Librarian gives negative penalty   1. Librarian will get an error message and will be asked to give a penalty >=0. 2. The library system restarts use case.   6.0 E1 Librarian did not select any item   1. Librarian will get an error message and will be asked to select one item from the table. 2. The library system restarts use case   6.0 E2 Librarian selected item with status different from “waiting”   1. Librarian will get an error message and will be asked to select one item from the table with status “waiting” 2. The library system restarts use case | | |

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| --- | --- | --- | --- |
| ID and name | UC-7: Filter by author | | |
| Primary actor | Client | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1:Client is logged into the system | | |
| Postconditions |  | | |
| Normal flow | 7.0 View books filtered by author   1. Client selects one of the existing authors from the combobox. 2. The system displays all available books written by that author | | |
| Alternative flows | - | | |
| Exceptions | - | | |

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| --- | --- | --- | --- |
| ID and name | UC-8: Filter by status | | |
| Primary actor | Librarian | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1: Librarian is logged into the system | | |
| Postconditions | - | | |
| Normal flow | 8.0 View rentals filtered by status   1. Librarian clicks the “Rentals” button on his main view. 2. Librarian selects one of status values available in the combobox. 3. The system displays all rentals with that status | | |
| Alternative flows | - | | |
| Exceptions | - | | |

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| --- | --- | --- | --- |
| ID and name | UC-9: View rentals | | |
| Primary actor | Client | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1:Client is logged into the system | | |
| Postconditions | - | | |
| Normal flow | 8.0 View rentals   1. The system displays all rentals of the client | | |
| Alternative flows | - | | |
| Exceptions | - | | |

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| --- | --- | --- | --- |
| ID and name | UC-10: View rentals | | |
| Primary actor | Librarian | Secondary actors |  |
| Description |  | | |
| Trigger |  | | |
| Preconditions | PRE-1: Librarian is logged into the system | | |
| Postconditions | - | | |
| Normal flow | 8.0 View rentals   1. The system displays all rentals. | | |
| Alternative flows | - | | |
| Exceptions | - | | |

A library offers its subscribers a list of books that can be borrowed. For a subscriber, information related to their CNP (personal identification number), name, email, password, and a unique identification code within the library is stored in the system. Each book can exist in one or more copies, identified by unique codes.

The library has several terminals where subscribers can borrow books. To use a terminal, a subscriber must authenticate themselves. After authentication, they can see the list of available copies at that moment and borrow one or more, with the ability to filter books by author. Subscribers can also return books to the same terminals.

The librarian has the ability to apply a penalty to subscribers who are late in returning books, and if the total penalty score exceeds 50, they will no longer be able to borrow books. The librarian can also see a filtered list of loans based on their status. The librarian can also add new books to the system.

After each loan/return, all users of the library terminals see the updated list of available books.

**Iteration plan**

Iteration 1: UC-1(Login), UC-2(View books), UC-3(Add book/s), UC-7(Filter by author)

Iteration 2: UC-4(Rent), UC-5(Return), UC-9(View rentals - client), UC-10 (View rentals - librarian),

Iteration 3: UC-6(Confirm return), UC-8( Filter by status)