## **Use case template: Library**

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| **ID and name** | UC-1: View available books | | |
| **Primary actor** | Guest | **Secondary actors** |  |
| **Description** | A guest accesses the Library Borrowing System and looks through the available books. | | |
| **Trigger** | A guest indicates that they wants to view the available books in the library. | | |
| **Preconditions** | - | | |
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| **Normal flow** | **1.0 View available books**   1. Guest selects the View Only version of LBS. 2. LBS displays all books available together with their terminal. | | |
| **Alternative flows** |  | | |
| **Exceptions** |  | | |

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| **ID and name** | UC-2: Borrow a book | | |
| **Primary actor** | Reader | **Secondary actors** |  |
| **Description** | A reader accesses the Library Borrowing System, views all the books available in their preferred terminals, selects the one(s) they want and places an order for them to be delivered to a specific location. | | |
| **Trigger** | A reader indicates that they want to borrow a book. | | |
| **Preconditions** | PRE-1. Reader is logged into LBS. | | |
| **Postconditions** | POST-1. Book order is stored in LBS with a status of “Borrowed.”  POST-2. Inventory of available books is updated.  POST-3. Reader’s list of borrowed books is updated. | | |
| **Normal flow** | 1. **Borrow book(s)** 2. LBS displays all available books in the registered terminals. (See 2.1) 3. Reader adds a book to the cart. (see 2.2) 4. Reader indicates that the list with books to borrow is complete. 5. LBS displays the list of books. 6. Reader may remove books from the list. 7. Reader confirms the order (continue normal flow; see 2.0.E1) or continues to browse through the books (return to step 1). 8. LBS informs reader about the return date of the books and displays the available options for delivery. 9. Reader selects a delivery method. 10. LBS confirms borrowing. 11. LBS updates the inventory of available books. | | |
| **Alternative flows** | **2.1 Search for a specific book**   1. Readers search for a book by its name. 2. LBS displays all available books with the given name. 3. Return to step 2 of normal flow.   **2.2 Order multiple books**   1. Reader asks to order another book. 2. Return to step 1 of normal flow. | | |
| **Exceptions** | **2.0.E1 Reader has too many borrowed books.**  1. LBS informs Reader that with this order they would exceed the number of borrowed books they can have at a time.  2a. If Reader cancels the book borrowing process, then LBS terminates use case.  2b. Else if Patron requests to modify order, return to step 5 of normal flow. | | |

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| **ID and name** | UC-3: Accept return of a book | | |
| **Primary actor** | Librarian | **Secondary actors** | Reader |
| **Description** | A librarian accesses the Library Borrowing System, searches for a reader, verifies the book they brought back and updates its return. | | |
| **Trigger** | A reader indicates that they want to return a book. | | |
| **Preconditions** | PRE-1. Librarian is logged into LBS.  PRE-2. Reader comes to terminal with the book they want to return. | | |
| **Postconditions** | POST-1. Book’s status is changed back to “Available”.  POST-2. Inventory of available books is updated.  POST-3. Reader’s list of borrowed books is updated. | | |
| **Normal flow** | 1. **Return a book** 2. Reader comes to return a book. (see 3.1) 3. Librarian checks the state of returned book; if it’s good, continues the normal flow; if not (see 3.0.E1). 4. Librarian searches for Reader in LBS. 5. LBS displays Reader’s list of borrowed books. 6. Librarian selects the book and updates book’s state. 7. LBS confirms the return. 8. LBS updates the inventory and Reader’s list of borrowed books. | | |
| **Alternative flows** | **3.1 Return multiple books**   1. Readers wants to return another book 2. Return to step 2 of normal flow. | | |
| **Exceptions** | **3.0.E1 Returned book is damaged**   1. Librarian can’t accept the damaged book and Reader has to pay a fee. 2. Reader pays the fee. | | |

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| **ID and name** | UC-4: Log in as Reader | | |
| **Primary actor** | Reader | **Secondary actors** |  |
| **Description** | A reader accesses the Library Borrowing System and logs in. | | |
| **Trigger** | A reader indicates that they want to log in. | | |
| **Preconditions** | - | | |
| **Postconditions** | POST-1. Reader is logged in. | | |
| **Normal flow** | **4.0 Log in as a Reader**   1. Reader selects the Log In in the start page of LBS. 2. LBS shows the form for log in. 3. Reader inputs their credentials and logs in. 4. LBS verifies the credentials. (see 4.0.E1, 4.0.E2) 5. LBS shows the content available to a reader. | | |
| **Alternative flows** | - | | |
| **Exceptions** | **4.0.E1 Password is incorrect**   1. LBS warns reader that the password is incorrect. 2. Return to step 3 of normal flow.   **4.0.E2 Email doesn’t exist**   1. LBS warns reader that their email doesn’t exist. 2. Return to step 3 of normal flow. | | |

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| **ID and name** | UC-5: Log in as Librarian | | |
| **Primary actor** | Librarian | **Secondary actors** |  |
| **Description** | A librarian accesses the Library Borrowing System and logs in. | | |
| **Trigger** | A librarian indicates that they want to log in. | | |
| **Preconditions** | - | | |
| **Postconditions** | POST-1. Librarian is logged in. | | |
| **Normal flow** | **5.0 Log in as a Librarian**   1. Librarian selects the Log In in the start page of LBS. 2. LBS shows the form for log in. 3. Librarian inputs their credentials, with an email having the library domain. 4. LBS verifies the credentials. (see 5.0.E1, 5.0.E2) 5. LBS shows the content available to a librarian. | | |
| **Alternative flows** | - | | |
| **Exceptions** | **5.0.E1 Password is incorrect**   1. LBS warns librarian that the password is incorrect. 2. Return to step 3 of normal flow.   **5.0.E2 Email doesn’t exist**   1. LBS warns librarian that their email doesn’t exist. 2. Return to step 3 of normal flow. | | |

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| **ID and name** | UC-6: Add a book | | |
| **Primary actor** | Librarian | **Secondary actors** |  |
| **Description** | A librarian accesses the Library Borrowing System and adds a new book. | | |
| **Trigger** | A librarian wants to add a new book to the system | | |
| **Preconditions** | PRE-1. Librarian is logged into LBS. | | |
| **Postconditions** | POST-1. Inventory of available books is updated. | | |
| **Normal flow** | 1. **Add a book** 2. Librarian wants to add a new book 3. LBS shows a form to fill with book’s details. 4. Librarian fills the forms and confirms the adding of the book 5. LBS verifies the details. (see 6.0.E1) 6. LBS confirms the acceptance of the book. | | |
| **Alternative flows** | - | | |
| **Exceptions** | **6.0.E1 Details are incorrect**   1. LBS shows an error that the details of the book are incorrect. 2. Return to step 3 of the normal flow. | | |

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| **ID and name** | UC-7: Update a book | | |
| **Primary actor** | Librarian | **Secondary actors** |  |
| **Description** | A librarian accesses the Library Borrowing System and updates an existing book. | | |
| **Trigger** | A librarian wants to update the details of a book. | | |
| **Preconditions** | PRE-1. Librarian is logged into LBS. | | |
| **Postconditions** | POST-1. Inventory of available books is updated. | | |
| **Normal flow** | 1. **Updates a book.** 2. Librarian wants to update a book. 3. LBS shows a form to fill in the ID of the book. 4. Librarian fills the ID. 5. LBS checks the ID. (see 7.0.E1) 6. LBS shows the forms to fill in the updated details of the book. 7. Librarian fills the new details and confirms the operation. 8. LBS checks the details. (see 7.0.E2) 9. LBS confirms the update. | | |
| **Alternative flows** | - | | |
| **Exceptions** | **7.0.E1 Book with given ID is non-existent**   1. LBS warns the Librarian that there aren’t any books with the given ID. 2. Return to step 2 of the normal flow.   **7.0.E2 Details are incorrect**   1. LBS shows an error that the details of the book are incorrect. 2. Return to step 5 of the normal flow. | | |

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| **ID and name** | UC-8: Delete a book | | |
| **Primary actor** | Librarian | **Secondary actors** |  |
| **Description** | A librarian accesses the Library Borrowing System and deletes an existing book. | | |
| **Trigger** | A librarian wants to delete the details of a book. | | |
| **Preconditions** | PRE-1. Librarian is logged into LBS. | | |
| **Postconditions** | POST-1. Inventory of available books is updated. | | |
| **Normal flow** | 1. **Deletes a book.** 2. Librarian wants to delete a book. 3. LBS shows a form to fill in the ID of the book. 4. Librarian fills the ID. 5. LBS checks the ID. (see 8.0.E1) 6. LBS confirms the deletion. | | |
| **Alternative flows** | - | | |
| **Exceptions** | **7.0.E1 Book with given ID is non-existent**   1. LBS warns the Librarian that there aren’t any books with the given ID. 2. Return to step 2 of the normal flow. | | |