# Use cases

## Use case diagram

Diagram

Description automatically generated

## Use case descriptions

### 2.1 Manage multimedia item

Includes two scenarios: manage book and manage magazines

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| **Use case** | Manage multimedia item |
| **Summary** | | A librarian has a multimedia item that needs to be added or removed from the system. The librarian sees a list of the multimedia items that are currently stored in the system. In case they want to add it, they will use the system to record all the information about it. The system validates and records the data. On the other hand, if they want to delete it, they will have to select the item and use the system to delete it. The multimedia item will either appear or disappear from the list. |
| **Actor** | Librarian |
| **Precondition** | The librarian is logged in the system and has chosen to manage multimedia items.  In case of removing a multimedia item, said item must be stored in the system. |
| **Postcondition** | The item and all its information will be successfully added/removed from the system. |
| **Base sequence** | 1. System asks to choose the type of item 2. Choose type  * If chosen type is ‘book’ go to manage books scenario * If chosen type is ‘magazine’ go to manage magazines scenario |
| **Notes** | | This use case fulfills the requirements 1, 6. |

Includes two scenarios: add and remove books

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| **Scenario** | Manage books |
| **Base sequence** | CASE ADD:  1. System shows a list of the stored books and a list of genres to select from and ask for the following information:  Isbn, title, publisher, author, edition, year of publication and genres (the mandatory information is isbn, title, publisher, year).  2. Librarian inserts all the information.  3. About genres (OPTIONAL):     CASE Add genre:  3.1 The librarian selects a genre from the list of genres and chose to    add. (ES 2)  3.2 The system updates the list of added genres.  CASE Remove genre:  3.1 The librarian selects a genre from the list of added genres and   chooses to remove.  3.2 The system updated the list of added genres.  4. Librarian chooses to add the book. (ES 1)  5. System shows the updated list.    CASE REMOVE:  1. System displays a list of the stored books.  2. OPTIONAL:     2.1. Filter to find the desired book.     2.2. System displays a list of the books that fulfill the filters.     2.3. Possibility to change the filters, go to case delete step 2.1  3. Select the book from the list and delete it.  4. The system displays the list with the remaining books. |
| **Exception sequence** | ES 1: the information is incomplete or against the system restrictions:       4a. System displays an error.            Go back to main flow, case add step 1.    ES 2: the genre is already on the list of genres added.  3.3a System displays an error.  Go back to main flow, case add genre step 3 |
| Notes | Regarding ES 1, the error that the system might display are the following:   * Title/Publisher/Isbn cannot be empty. * Invalid date: future date (year of publication cannot be a future date). * There is already a book with that isbn in the system (isbn must be unique) * Duplicate genre (book cannot have the same genre twice). * Edition must be a natural number.     Optional step 3 can be done multiple times. |

Includes two scenarios: add and remove magazines

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| **Scenario** | Manage magazines |
| **Base sequence** | CASE ADD:  1. System displays a list of the stored magazines and asks for the following information:  Title, publisher, volume, genre, date (day, month and year) (the mandatory information is title, publisher and date)  2. Librarian inserts all the information and adds the item. (ES 1)  3. System records the information and shows the updated list.    CASE REMOVE:  1. System displays a list of the stored magazines  2. OPTIONAL:     2.1. Filter to find the desired item     2.2. System displays a list of the items that fulfill the filters.     2.3. Possibility to change the filters, go to case delete step 2.1  3. Select the item from the list and delete it.  4. The system displays the list with the remaining items. |
| **Exception sequence** | ES 1: the information is incomplete or against the system restrictions:  2a. System displays an error.           Go back to main flow, case add step 1. |
| **Notes** | Regarding ES 1, the errors that the system might display are the following:  Invalid date: future date (date cannot be a future date).  Title/Publisher/Day/Month/Year cannot be empty.  Invalid date (day, month and year create a date that does not exist. Ex. 2022-02-31, 2000-13-3).  Volume must be a natural number. |

### 2.2 Manage librarians

Includes two scenarios: add and remove librarians

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| **Use case** | **Manage librarians** |
| **Summary** | The library manager hires or fires a librarian, and therefore they need to be added or removed from the system. A list of the current librarians is shown. In case they want to add a new librarian, they will use the system to record all the information about it: social security number (ssn), first and last name, date of employment and their password (see non-functional requirement d.). The system validates and records the data.  On the other hand, if they want to delete it, they will have to select the librarian and use the system to delete it.  The librarian will either appear or disappear from the list. |
| **Actor** | Library manager |
| **Precondition** | The library manager is logged into the system.  In case of removing a librarian, it must be stored in the system. |
| **Postcondition** | The librarian is added/removed from the system. |
| **Base sequence** | 1. System displays a list of all the librarians stored in the system.  CASE ADD:   1. The system asks for the following information:     social security number (ssn), first and last name, and their   password   1. Insert librarian information and add it. (ES 1) 2. System shows the updated list.   CASE REMOVE:          2. Select the librarian from the list and delete it.          3. The system displays the list with the              remaining librarians. |
| **Exception sequence** | ES 1: the information is incomplete or against the system restrictions:       3a. System will display an error.            Go back to main flow, case add step 2. |
| **Note** | This use case fulfills the requirements 2, 5  Regarding ES 1, the error that the system might display are the following:   * First name/ Last name/ ssn/ password cannot be empty. * First name/ last name must have less than 50 characters * The ssn must be 13 digits * The is already a librarian with that ssn in the system (ssn must be unique) |

### 2.3 Manage loans

Includes two scenarios: create ad end loan

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| **Use case** | **Manage loan** |
| **Summary** | A library user comes physically into the library and asks the librarian if they can borrow a specific multimedia item. The librarian uses the system and marks the multimedia item as borrowed from the available multimedia items by said user. The library user takes the item and has a period of 14 days to return it. After that, the library user comes physically into the library with the multimedia item they wish to return and gives it to the librarian. The librarian uses the system and introduces the ssn of the library user to be able to see a list of the items that they have currently borrowed. The librarian then selects the item between the ones on the list and marks it as returned, which will automatically make it available for other users to borrow. |
| **Actor** | Librarian |
| **Precondition** | The librarian is logged in to the system, the library user has been already registered. |
| **Notes** | This use case fulfills the requirements 4 and 21 |

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| **Scenario** | **Create loan** |
| **Precondition** | The item has not been lent to any other library user. |
| **Postcondition** | The item is registered in the system as being borrowed from a specific library user along with its transaction date. |
| **Base sequence** | 1. System asks for the ssn of a user. 2. The librarian introduces the ssn of the user (ES 1) 3. System shows the first name and last name of the user. 4. Librarian chose either book or magazine. 5. System displays a list of available items of the selected type. 6. The librarian selects the item requested by the library user 7. The multimedia item is highlighted 8. The librarian selects to create the loan 9. The system registers the item as being borrowed by the specific library user along with the transaction date and updates the list of available items. |
| **Exception sequence** | ES 1: The ssn does not correspond to any registered library user.       2a. System will display an error.            Go back to main flow, case add step 1. |

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| **Scenario** | **End loan** |
| **Precondition** | The library user has borrowed the multimedia item. |
| **Postcondition** | The item is registered in the system as available again and the specific loan will be deleted. |
| **Base sequence** | 1. System asks for the ssn of a user. 2. The librarian writes the ssn of the user (ES 1) 3. System shows first name and last name of the user. 4. Librarian chose either book or magazine. 5. System displays a list of borrowed items of the selected type. 6. The librarian selects the item returned by the library user. 7. The item is highlighted from the list. 8. The librarian selects to return the item. 9. The system registers the item as being available and updates the list of borrowed items. |
| **Exception sequence** | ES 1: The ssn does not correspond to any registered library user.       2a. System will display an error indicating that there is not any library user with the indicated ssn.            Go back to main flow, case add step 1. |

### 2.4 Manage library user

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| **Use case** | **Manage library User** |
| **Summary** | A library user comes into the library and ask the librarian to be register in the library. In this case the librarian will add a new library user, they will record all the information about it: social security number (ssn), first and last name, and their password (see non-functional requirement e.). The system validates and records the data.  On the opposite, a library user comes and asks to be no longer a user in the library. The librarian will select the library-user and use the system to delete it.  The library user will either appear or disappear from the list that it is always shown. |
| **Actor** | Librarian |
| **Precondition** | The librarian is logged in to the system and has chosen to manage library users.  In case of removing a library-user, it must be stored in the system. |
| **Postcondition** | The library user is added/removed from the system. |
| **Base sequence** | 1. System displays a list of all the library users stored in the system  CASE ADD:  2. The system asks for the following information:  social security number (ssn), first and last name and their  password  3. Insert library-user information and add it. (ES 1)  4. System shows the updated list.  CASE REMOVE:  3. Select the librarian from the list and delete it.  4. The system displays the list with the  remaining librarians. |
| **Exception sequence** | ES 1: the information is incomplete or against the system restrictions:  3a. System will display an error.  Go back to main flow, case add step 2. |
| **Note** | This use case fulfills the requirements 3,20  Regarding ES 1, the error that the system might display are the following:   * First name/ Last name/ Ssn/ password cannot be empty. * The ssn must be 13 digits * There is already a library user with that ssn in the system (ssn must be unique). |

## Scenario: log in

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| **Scenario** | **Log in** |
| **Postcondition** | The actor is logged in the system in the successful scenario and not logged in in the failed scenario. |
| **Base sequence** | 1. System asks for ssn and password.  2. Actor writes its ssn and password and logs in. (ES1)  3. System let the actor know that it has been properly logged in. |
| **Exception sequence** | ES 1: The ssn and the password does not correspond to any Librarian or the Manager.       2a. System displays an error.            Go back to main flow, scenario Log in step 1. |
| **Notes** | This scenario is a precondition for Uses Cases: Manage Librarians, Manage Magazines, Manage Library Users, Manage Books, Create Loan and End Loan. |