**SOFTWARE ENGINEERING PROBLEM SPECIFICATION TABLE**

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| CUSTOMER | ReadX |
| USER | Clients |
| FUNCTIONAL REQUIREMENTS | FR1: User registration.  FR2: Registration of bibliographic products.  FR3: Elimination of bibliographic products.  FR4: Modification of bibliographic products.  FR5: Purchase of products.  FR6: Simulation of reading session.  FR7: Library presentation.  FR8: Generate reports.  FR9: Cancel subscription |
| CONTEXT OF THE PROBLEM | A prototype software is required for the company ReadX, which allows them to manage their publishing business worldwide. Thesoftware must be able to manage the different aspects of ReadX's publishing business in an efficient and scalable manner. The software should allow the management of bibliographic products, such as books and journals, with specific features and the possibility of incorporating new types of products in the future. In addition, it must allow the management of users with different types of permissions, assignment of ads, and the realization of purchases of products and subscriptions, with the possibility of canceling them at any time. The presentation of the library, where the bibliographic products are stored, must be graphic and allow navigation and selection of them. Finally, you must be able to simulate a reading session for users. |
| NON-FUNCTIONAL REQUIREMENTS | RNF1: The system must be scalable.  RNF2: The system must be adaptable to future updates.  RNF3: The system must be user-friendly and intuitive.  RN4: For non-premium users the system must present announcements occasionally during its execution. |

**Functional requirements analysis table**

| Name or identifier | FR1: User registration. | | |
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| Summary | The system must allow the registration of the users contemplated by the company, which in this case are premium and standard. To register users on the platform, the following information is needed: name, ID and date of linking. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| name | String | Valid characters, required |
| Id | String | Numbers only, required |
| userType | Int | Valid option |
| Result or postcondition | The system validates the information, updates the database and assigns the new users, finally shows the user the validation of successful or failed process. | | |
| Outputs | Exit Name | Data type | Format |
| msgValidation | String | Message |

| Name or identifier | FR2: Product registration. | | |
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| Summary | The system must allow the registration of bibliographic products contained in the company, in this case, books and journals. For both products you need a name, a number of pages, a publication date, a type, a URL that leads to a repository with the cover, the sale value (in dollars), and the accumulated pages read, Also, the products need a generated ID, the case of books 3 hexadecimal characters and in magazines 3 alphanumeric characters. In particular, to register a book requires a short review and the number of copies sold. And, on the other hand, the journal also requires the period of issuance and number of active subscriptions. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| productType | String | [BOOK, MAGAZINE] |
| name | String | Required, valid characters only |
| pagesAmount | Int | Required, valid characters only |
| PublishDate | Calendar | Required, valid characters only |
| URL | String | Required, valid link |
| Price | double | Required, valid characters only |
| Review | String | Required for books only |
| issueFrequency | String | Required for journals only |
| Result or postcondition | The system validates the data and registers the new product in the database available for sale. | | |
| Outputs | Entry name | Data type | Format |
| msgValidation | String | Message |

| Name or identifier | FR3: Modification of products. | | |
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| Summary | The system must allow the modification of previously created products, for this, the user enters the product id and enters the data he wants to change, in the case that he enters blank data, it will be understood that he does not want to change that attribute. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| productId | String | Existing ID |
| name | String | Onlyvalid characteristics |
| pagesAmount | Int | Onlyvalid characteristics |
| PublishDate | Calendar | Onlyvalid characteristics |
| URL | String | Valid link |
| Price | double | Onlyvalid characteristics |
| Review | String | For books only |
| issueFrequency | String | Only for magazines |
| Result or postcondition | The system validates the data and updates the product data in the database available for sale. | | |
| Outputs | Entry name | Data type | Format |
| msgValidation | String | Message |

| Name or identifier | FR4: Product Disposal | | |
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| Summary | The system should allow the deletion of bibliographic products registered in the system and belonging to users. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| Productid | String | Existing ID |
| Result or postcondition | The system validates the data and removes the selected product from the entire system and displays an on-screen validation. | | |
| Outputs | Exit Name | Data type | Format |
| msgValidation | String | Message |

| Name or identifier | FR5: Purchase or subscription of products | | |
| --- | --- | --- | --- |
| Summary | The system must allow users to buy a book or subscribe to a journal, the date of the operation and the amount paid must be stored on an invoice, as well as the number of copies sold or active subscriptions, as appropriate to the type of bibliographic product. Additionally, the user must be allowed to unsubscribe from a journal at any time. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| Productid | String | Existing ID |
| userId | String | Existing ID |
| Result or postcondition | The system updates the data and assigns the purchased product to the user, being possible the cancellation of the subscription if it is a magazine, subsequently, the user is shown the invoice generated. | | |
| Outputs | Exit Name | Data type | Format |
| msgInvoice | String | Message |

| Name or identifier | FR6: Reading session simulation | | |
| --- | --- | --- | --- |
| Summary | The system must present for one user per console the name of the bibliographic product, the current page being read and navigation options to read the previous page, the next page and to return to the Library. Each page read in the simulation increases the number of pages read of the corresponding bibliographic product on the platform. Finally, it should be noted that, during the reading session, in the case of regular users, advertisements must be presented at two times: at the beginning of the reading session and after every 20 pages read from a book or 5 pages read from a magazine. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| Action | Char | [A,S,B] |
| Result or postcondition | The number of pages read by the user of the product is updated and ads are displayed if they are a standard user. | | |
| Outputs | Exit Name | Data type | Format |
| msgAd | String | Message |

| Name or identifier | FR7: Presentation of library library | | |
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| Summary | The system must show the user a library represented in a 5x5 matrix, of their products in possession, in turn must receive the option to advance and rewind page in the case that the library is longer. Or, if the user wants to start a reading session, he must enter the id or position (x,y) of the product. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| option | String | [A,S] |
| productId | productPos | String | Existing product |
| Result or postcondition | The system receives and validates the input and executes the option that the user has registered, subsequently, the system can show a message of successful operation. | | |
| Outputs | Exit Name | Data type | Format |
| msgValidation | String | Message |

| Name or identifier | FR8: Generate reports | | |
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| Summary | The system must generate reports based on the previously recorded data, the user must enter the type of report he wants to obtain, and the system displays the respective report. There are 5 types of reports: the first, for each type of bibliographic product, book and magazine, report the accumulated total of pages read throughout the platform.  The second, toform the genre of book and category of magazine most read on the platform.  Third, I inform the Top 5of books and the Top 5 of most read magazines on the platform.  Fourth, foreach genre, report the number of books sold and the total sales value.  And the fifth, de each category, report the number of active subscriptions and the total value paid for subscriptions. | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
| reportType | Int | [1,2,3,4,5] |
| Result or postcondition | The system validates the option, generates and displays the respective report | | |
| Outputs | Exit Name | Data type | Format |
| msgReport | String | Message |

| Name or identifier |  | | |
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| Summary |  | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
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| Result or postcondition |  | | |
| Outputs | Exit Name | Data type | Format |
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| Name or identifier |  | | |
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| Summary |  | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
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| Result or postcondition |  | | |
| Outputs | Exit Name | Data type | Format |
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| Name or identifier |  | | |
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| Summary |  | | |
| Tickets | Entry name | Data type | Selection or repetition condition |
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| Result or postcondition |  | | |
| Outputs | Exit Name | Data type | Format |
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