**READX PROBLEM AND REQUIREMENTS SPECIFICATION TABLE**

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| **CUSTOMER** | ReadX |
| **USERS** | ReadX’s employees |
| **FUNCTIONAL REQUIREMENTS** | FR0: User registration  FR1: Book registration  FR2: Magazine registration  FR3: Product modification  FR4: Product deletion  FR5: Buying a product  FR6: Showing the library  FR7: Reading simulation  FR8: Generate reports |
| **CONTEXT OF THE PROBLEM** | ReaderX is an Egyptian conglomerate that is starting a worldwide publishing business and is in need for a software prototype that helps them manage their business. |
| **NON-FUNCTIONAL REQUIREMENTS** | NFR0: The system must be simple and easy to use.  NFR1: The system must be quick at showing results.  NFR2: The system must be able to adapt to further updates |

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| Name or identifier | *[FR0: User registration.]* | | | |
| Summary | *The prototype must have, for now, two types of user: regular and premium. The Regular user will be able to buy 5 books, subscribe to up to 2 magazines and during their use of the platform, they will be presented with advertisements. For their part, the Premium user will be able to purchase books and subscribe to as many magazines as they wish and can pay for. To register users on the platform, the following information is needed: name, ID and date of connection.* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| user type | String | | Premium or Regular |
| user name | String | | Valid user name |
| user ID | String | | Valid ID |
| Result or postcondition | The given information is verified and if its valid, the user is registered in the system’s database and automatically, the date of connection to the platform is saved | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Register confirmation | | String | Message |

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| Name or identifier | *[FR1: Book registrarion.]* | | | |
| Summary | *The company's business model is based, for now, on the sale of two types of bibliographic products: books and magazines.*  *Each book has a unique identifier (3 hexadecimal characters), a name, a number of pages, a short review, a publication date, a genre, a URL leading to a repository with the book's cover, the retail value ( in dollars), the number of copies sold and the accumulated number of pages read. The possible genres existing in the prototype are: Science Fiction, Fantasy and Historical Novel.*  *.* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| Book ID | String | | Must be hexadecimal and contain 3 characters |
| Book name | String | | Valid book name |
| Number of pages | int | | Valid number of pages |
| review | String | | Must describe shortly the contents of the book |
| Publication date | Date | | dd/mm/yyyy |
| Genre | String | | Must be either Science fiction, Fantasy of Historical Novel |
| URL | String | | Must be a url that contains the book’s cover |
| retailValue | Double | | Must be a value in dolars |
| Result or postcondition | The given information is verified and if its valid, the book is registered in the system’s database | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Register confirmation | | String | Message |

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| Name or identifier | *[FR2: Magazine registration.]* | | | |
| Summary | *The company's business model is based, for now, on the sale of two types of bibliographic products: books and magazines.*  *Each magazine has a unique identifier (3 alphanumeric characters), a name, a number of pages, a date of publication, a category, a URL that leads to a repository with the magazine's cover, the value of the subscription (in dollars ), the frequency of emission, the number of active subscriptions and the accumulated number of pages read. The possible existing categories in the prototype are: Varieties, Design and Scientific* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| Magazine ID | String | | Must be alphanumeric |
| Magazine name | String | | Valid magazine name |
| Number of pages | int | | Valid number of pages |
| Publication Date | Date | | dd/mm/yyyy |
| Category | String | | Must be either Varieties, Design or Scientific |
| URL | String | | Must be a url that contains the magazine’s cover |
| Suscription value | Double | | Must be given in dolars |
| Frecuency of emission | String | | Valid frecuency |
| Result or postcondition | The given information is verified and if its valid, the magazine is registered in the system’s database | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Register confirmation | | String | Message |

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| Name or identifier | *[FR3: Product modification]* | | | |
| Summary | *The system must allow employees to change or edit the information of a certain product by selecting a product by their unique ID and by selecting which attribute they want to change and the new version of that attribute* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| Product ID | String | | Must be a product registered in the system’s database |
| Atribute to change | String | | Must be a magazine’s attribute |
| New atributte | String | | Valid change |
| Result or postcondition | The given information is verified and if its valid, the information of the chosen attribute is modified | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Modification confirmation | | String | Message |

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| Name or identifier | *[FR4:Product* deletion*.]* | | | |
| Summary | *The system must allow the employee to delete the information of a registered product by selecting said product by its ID and entering a confirmation* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| Product ID | String | | Must be a registered product |
| confirmation | Boolean | | YES or NO |
| Result or postcondition | If the product is found and the confirmation is given, the system deletes the information of the selected product | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Deletion confirmation | | String | Message |

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| Name or identifier | *[FR5: Buying a product]* | | | |
| Summary | *Users must select one of the existing products by entering said product’s Id. When users purchase a book or subscribe to a journal, the date of the transaction and the amount paid must be stored in an invoice, as well as the number of copies sold or active subscriptions updated, as appropriate to the type of bibliographic product . Additionally, the user must be allowed to unsubscribe from a magazine at any time..* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| User ID | String | | Must |
| Product ID | String | | Must be a registrated product |
| Result or postcondition | If the selected product is a registered product and the selected User is registered in the system, the transaction takes effect, and the bought product is added to the user’s library. The date of the transaction and the amount paid is stored as well as the number of copies sold or active subscriptions is updated | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Transaction confirmation | | String | Message |

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| Name or identifier | *[FR6: Showing the library]* | | | |
| Summary | *ReadX requires that its prototype have a menu that allows the user to quickly view its collection of bibliographic products, similar to a library. The Library must be represented through 5x5 matrices that graphically present the code of the bibliographic products associated with the user's account. The products must be ordered by publication date, from the oldest to the newest. As the user expands his collection, the user should be allowed to navigate in it (previous or next page). The user should be able to select a bibliographic product either by its x,y coordinate in the presented matrix or the 3-character identifier of the product in order to initiate a reading session. Below is an example of the Library's graphical interface.* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| User ID | String | | Must |
| Result or postcondition | If the user is a registered user, the user’s library will be shown, even if the user hasn’t bought any products yet | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Library | | String | Matrix |

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| Name or identifier | *[FR7: Reading simulation]* | | | |
| Summary | *The simulation of the reading session is presenting 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 for the corresponding bibliographic product on the platform. Finally, it must be taken into account that during the reading session, in the case of regular users, advertisements must be presented at two moments: at the beginning of the reading session and after every 20 pages of a book or 5 pages read. read from a magazine* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| Product ID | String | | Must be a registered product |
| options | int | | 1. Previous page 2. Next page 3. Return to library |
| Result or postcondition | If the product is registered in the system, the user is able to read that products content and is able to choose between the given options | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Current page | | int | “Current page:” |
| Menu of options | | String | 1. Previous page 2. Next page 3. Return to library |

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| Name or identifier | *[FR8: Generate reports]* | | | |
| Summary | *In order to generate targeted content, ReadX requests that the prototype be able to generate the following reports in real time:*  *For each type of bibliographic product, book and magazine, report the accumulated total number of pages read on the entire platform (type of product and number of pages read).*  *Report the most read book genre and magazine category for the entire platform (genre or category name and number of pages read).*  *Report the Top 5 books and the Top 5 most read magazines on the platform (name of the book, name of the genre or category and number of pages read).*  *For each genre, report the number of books sold and the total value of sales ($).*  *For each category, report the number of active subscriptions and the total value paid for subscriptions* | | | |
| Inputs | **Nombre entrada** | **Tipo de dato** | | **Condición valores válidos** |
| option | int | | 1. Accumulated number of pages 2. Most read book genre and magazine category 3. Top 5 book and magazines 4. Number of books sold 5. Number of active subscriptions |
| Result or postcondition | If the option is valid, the needed calculations will be done and the chosen report will be shown by console | | | |
| Outputs | **Nombre salida** | | **Tipo de dato** | **Formato** |
| Report | | String | Message |