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**Requirements Analysis Table.**

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| **CLIENT** | Mercado Libre |
| **USERS** | Inventory Manager |
| **FUNCTIONAL REQUIREMENTS** | 1. Enter store Inventory (Products). 2. Enter store Orders. 3. Remove Products from Inventory. 4. Remove Orders 5. Update Product Quantity. 6. Search for Products 7. Search for Orders. 8. Choose the order of search engine results. |
| **CONTEXT OF THE PROBLEM** | The famous company Mercado Libre wants a program that allows the online sale of its virtual store. The program should allow users to enter the store's inventory, search and delete products, as well as register the orders made by store users. In addition, the program must have a product search engine and an order search engine. |
| **NON-FUNCTIONAL REQUIREMENTS** | 1. The software must be programmed on java. 2. The software must have data persistence using JSON serialization to ensure data integrity. 3. The software must manage exceptions to avoid unexpected states. 4. The software must use informative error messages to guide the user in the event of an unexpected error. 5. The system must implement a menu of options to add or delete all the products and orders that the user wants. 6. Search engines must use the binary search algorithm to find matches in product registrations and must display the results by console. |
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**Functional Requirements Analysis Tables.**

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| **Name or identifier** | **R1. Enter store Inventory.** | | |
| **Summary** | The system must allow entering information about each product (name, description, price, quantity available, category and number of times purchased). Once the product is added, the user can increase the quantity of each already registered product. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| name | String |  |
| description | String |  |
| price | Double |  |
| category | Integer | Must be one of the following options:  Books (1)  Electronics (2), Clothing and accessories (3)  Food and beverages (4)  Stationery (5)  Sports (6)  Beauty and personal care products (7)  Toys and games(8). |
| soldUnits | Integer |  |
| **General activities necessary to obtain the results** | 1. Read the name. 2. Check that the product name is not repeated. 3. read the description. 4. read the price. 5. Read the category. 6. Check category number. 7. Read the number of times purchased (soldUnits) | | |
| **Result or postcondition** | The product information has been added | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| marketplace | String |  |

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| **Name or identifier** | **R2. Enter store Orders** | | |
| **Summary** | The system must allow entering information about an order (trader’s name, product list, total price, date of purchase). Once the product is added, the user can increase the quantity of each already registered product. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| traderName | String |  |
| productList | String |  |
| totalPrice | Int |  |
| purchaseDate | Date |  |
| **General activities necessary to obtain the results** | 1. Read the trader’s name. 2. Check that the trader’s name exists. 3. read the product list. 4. Check Products. 5. read the total price. 6. Get Time of purchaseDate. 7. Check category number. 8. Decrease product units. | | |
| **Result or postcondition** | The order information has been added | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| marketplace | String |  |

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| **Name or identifier** | **R3. Remove Products from Inventory.** | | |
| **Summary** | If an order is placed for a product, the system will remove one unit of the product from inventory. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| searchProduct | String | Must be the name of an already registered product.  The search parameters of the product search engine. |
| **General activities necessary to obtain the results** | 1. Search the product name. 2. Find the product. 3. Check if product units are more than zero. 4. Subtract product | | |
| **Result or postcondition** | A unit of the product has been removed | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| None | None | none |

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| **Name or identifier** | **R4. Remove Orders** | | |
| **Summary** | The system must allow the user to delete a previously registered order, when an order is cancelled, the product(s) from which a unit was removed receive a unit back. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| searchOrder | String | The search parameters of the order search engine. |
| **General activities necessary to obtain the results** | 1. Search the trader’s name. 2. Find the trader. 3. Search Order Data. 4. Return 1 product unit. | | |
| **Result or postcondition** | Order has been removed / canceled | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| none | none | none |

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| **Name or identifier** | **R5. Update Product Quantity** | | |
| **Summary** | The system allows the user to increase (change) the number of units of an already registered product | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| productName | String |  |
| units | int |  |
| **General activities necessary to obtain the results** | 1. Read product name. 2. Check product name. 3. Read units. 4. Assign new units of the product to inventory. | | |
| **Result or postcondition** | The quantity of product has been modified | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| marketplace | String |  |

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| **Name or identifier** | **R6. Search for Products** | | |
| **Summary** | The system must allow you must allow you to search for products by name (It may vary according to the user's filter) | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| searchProduct | String |  |
| **General activities necessary to obtain the results** | 1. Read the parameter. 2. Check the matches with the given parameter of the product. 3. Organize search results. 4. Show search results. | | |
| **Result or postcondition** | A message with the results related to the search | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| marketplace | String |  |

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| **Name or identifier** | **R7. Search Order** | | |
| **Summary** | The system must allow you must allow you to search for order by name (It may vary according to the user's filter) | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| searchOrder | String |  |
| **General activities necessary to obtain the results** | 1. Read the parameter. 2. Check the order exists. 3. Organize search results. 4. Show search results. | | |
| **Result or postcondition** | A message with the results related to the search | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| marketplace | String |  |

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| **Name or identifier** | **R8. Choose the order of search engine results.** | | |
| **Summary** | The system must allow the user to choose different "filters" for the types of searches (depending on the parameters). You can also edit the search by ranges or intervals | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or repetition condition** |
| searchOptionOrder | Integer |  |
| searchOptionProduct | Integer |  |
| **General activities necessary to obtain the results** | 1. Read the parameter for order. 2. Check if option exists. 3. Read the parameter for product. 4. Check if option exists. | | |
| **Result or postcondition** | The search engines are configured to allow the user to search by a series of parameters | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| None | none |  |