## **Nombre (código)**

**Requerimientos**

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| Cliente | Mercado libre |
| Usuario | Sellers and buyers users in the Mercado Libre application |
| Requerimientos funcionales | R1: The application allows you to enter the inventory of the virtual store.  R2: Allows the user to search and delete products  R3: It allows the user to register the orders of the buyers of the application.  R4: Allows the user to search for products and look up orders.  R5: The algorithm uses the binary search algorithm to find matches in the product records.  R6: the program must have data persistence through JSON serialization.  R7: Allows range searches for numeric attributes, such as price, quantity available, or the number of times purchased.  R8: the program must handle exceptions to avoid unexpected states during product entry and search.  R9: Allows the user to specify a minimum and maximum value to search for products within a range.  R10: The search engine must allow the user to choose the order (ascending or descending) of the data displayed and the ordering variable.  R11: Develop the project using TDD. |
| Contexto del problema | development of an application for MercadoLibre that allows the online sale of its virtual store. The task is to create a program that allows to enter the inventory of the virtual store and allows the search and deletion of products. In addition, the program must allow registering the orders made by the users of the store.  The application must allow the user to enter information about each product, including its name, description, price, quantity available, category, and number of times purchased. It must also allow the user to enter information such as the buyer's name, product list, total price, and date of purchase.  The application must have a product search engine and an order search engine that allows searching by name, price, category, number of times purchased, buyer's name, total price, and date of purchase. In addition, you must allow range searches for numeric attributes and range searches for string type attributes.  Data persistence must be through JSON serialization to ensure data integrity and the application must handle exceptions to avoid unexpected states during check-in and product lookup. |

Especificar cada requerimiento en el siguiente formato

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| Nombre o identificador | **R1:addProductoInTheStore** | | |
| Resumen | Sellers upload their products to the platform with their specifications such as name, description, price, quantity available, category and number of times purchased; the seller customer data such as name, list of products, total price and date of purchase | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| name | String | diferent null |
| description | String | diferent null |
| price | double | greather thann 0 |
| quantity | int | greather than 0 |
| category | int | among the options available |
| Actividades generales necesarias para obtener los resultados | The product type object is created with the parameters it is added to the products arrayList. | | |
| Resultado o Postcondición | rewritten the product in the Json file | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| message | String | Any condition |

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| Nombre o identificador | **R2:** Allows the user to search and delete products | | |
| Resumen | Allow the user to enter and delete orders from the virtual store | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| ProductName  Product list  TotalPrice | String  Array | different null |
| Actividades generales necesarias para obtener los resultados | 1. The user enters the search term  2. The system uses search algorithm to find the products that match the search criteria.  3. The system shows the list of products found to the user, with the option to delete them.  4. If the user decides to delete a product, the system displays a confirmation message before deleting it. | | |
| Resultado o Postcondición | The products selected by the user have been removed from the inventory of the virtual store. | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| ConfirmationMessage | String |  |

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| Nombre o identificador | **R3:** It allows the user to register the orders of the buyers of the application. | | |
| Resumen | Allow the user to register the orders made by the users of the virtual store | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| buyer Name | String | different null |
|  | productsList | Array | different null |
|  | purchase Date | date | different null |
| Actividades generales necesarias para obtener los resultados | The product type object is created with the parameters it is added to the products arrayList. | | |
| Resultado o Postcondición | rewritten the product in the Json file | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| msj | String | Any condition |

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| Nombre o identificador | **R4:SearchProductByName** | | |
| Resumen | allows you to search for the product in the entire store | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| Name | String | diferente de null |
| Actividades generales necesarias para obtener los resultados | search for products from the entire store and return the product if not say that this product does not exist | | |
| Resultado o Postcondición | product | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| Product | Product | Depend want to see the user in the order from price or alphabetic |

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| Nombre o identificador | **R4:SearchProductByPrice** | | |
| Resumen | allows you to search for the product in the entire store | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| Min  Max | Double  double | The max is more big that the min |
| Actividades generales necesarias para obtener los resultados | search for products from the entire store and return the product if not say that this product does not exist | | |
| Resultado o Postcondición | product | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| Product | String | Depend want to see the user in the order from price or alphabetic |

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| --- | --- | --- | --- |
| Nombre o identificador | **R5:SearchProductByCategory** | | |
| Resumen | allows you to search for the product in the entire store | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| category | int | The number is in a renge for total category |
| Actividades generales necesarias para obtener los resultados | search for products from the entire store and return the product if not say that this product does not exist | | |
| Resultado o Postcondición | product | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| Product | String | Depend want to see the user in the order from price or alphabetic |

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| --- | --- | --- | --- |
| Nombre o identificador | **R6:SearchProductByQuantity** | | |
| Resumen | allows you to search for the product in the entire store | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| Min  Max | Int  int | The max is more big that the min |
| Actividades generales necesarias para obtener los resultados | search for products from the entire store and return the product if not say that this product does not exist | | |
| Resultado o Postcondición | product | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| Product | String | Depend want to see the user in the order from price or alphabetic |

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| Nombre o identificador | **R7:DeleteProduct** | | |
| Resumen | allows you to search for the product in the entire store from delete the Arraylist | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| Name | String | Different null |
| Actividades generales necesarias para obtener los resultados | search for products from the entire store and exist the product, delete from store if not say the product doesn’t exist | | |
| Resultado o Postcondición | Msj whit masagge | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| msj | String |  |
| Nombre o identificador | **R8:DeleteOrder** | | |
| Resumen | allows you to search for the order in the entire store from delete the Arraylist | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| id | int | Different null |
| Actividades generales necesarias para obtener los resultados | search for Orders from the entire store and exist the Order, delete from store if not say the order doesn’t exist | | |
| Resultado o Postcondición | Msj whit massage | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| msj | String |  |

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| Nombre o identificador | **R9:PrintProductsUpLetter** | | |
| Resumen | The method recib Arraylist and compare whit the all producst exist in the arraylist and the product save in the new arraylist whit the leeters up first. | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| Producst | Arraylist | Different null |
| Actividades generales necesarias para obtener los resultados | Organize depeend the letter | | |
| Resultado o Postcondición | products | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| Products | String |  |
| Nombre o identificador | **R10:PrintProductsUpLetter** | | |
| Resumen | The method recib Arraylist and compare whit the all producst exist in the arraylist and the product save in the new arraylist whit the leeters down first. | | |
| Entradas | **Nombre entrada** | **Tipo de dato** | **Condición de selección o repetición** |
| Producst | Arraylist | Different null |
| Actividades generales necesarias para obtener los resultados | Organize depeend the letter | | |
| Resultado o Postcondición | products | | |
| Salidas | **Nombre salida** | **Tipo de dato** | **Condición de selección o repetición** |
| Products | String |  |

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| **Name or identifier** | **R11. Search order** | | |
| **Summary** | The system must allow the search of an order based in Id that is generate automatic when the order create | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or**  **repetition condition** |
| Id | int | The entered number |
| **General activities necessary to obtain the results** | 1. Read the variable in which the search will be based on. 2. Check the entered value. 3. Create a search expression in the arraylist. 4. Query the first coincidence that matches. 5. Display the search result. | | |
| **Result or post-condition** | The system displays a message with the search result. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
|  |  |  |
| result | String |  |

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| **Name or identifier** | **R.12 Load information.** | | |
| **Summary** | The system must be able to load the products and orders information from JSON’s format files. | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or**  **repetition condition** |
| **General activities necessary to obtain the results** | 1. Create the folder in which the program information will be stored 2. Load the information of products stored in the corresponding JSON file 3. Load the information of orders stored in the corresponding JSON file | | |
| **Result or post-condition** | The program information is loaded in the program. | | |
| **Outputs** | **Output name** | **Datatype** | **Selection or repetition condition** |
| none | none | none |
| **Name or identifier** | **R.13 update information.** | | |
| **Summary** | The system read the json file and save in the arraylist the store whit orders and products | | |
| **Inputs** | **Input name** | **Datatype** | **Selection or**  **repetition condition** |
| **General activities necessary to obtain the results** | 1. Select the json file where are save the information the clients and products 2. In a new array save the information. 3. Create a bucle whit all elements saved in the array and save in the arraylist the product and orders. | | |
| **Result or post-condition** | The program is already for the continue whitout create all orders and producst again. | | |