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| Test  Number | Reason for test | Data Entered | Entry field | Expected Result | Success Y/N |
| 1 | **Main Menu**  **Functions behind Main menu**:  1.Add an item to Warehouse  2.Display Warehouse Items  3.Move Warehouse Items  4.Remove warehouse Items  5.Restore Discarded Items  6.Search an Item  7.EXIT PROGRAM | Entered in Order:  1.5: float value  a: non numeric value  0: 1st value < minimum  8: 1st value > maximum  1(valid menu input) | Main Menu  Main Menu  Main Menu | On running the program, displays the initial screen:  Main menu (items 1-7) and “Input your choice: ”  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message, reminder of valid values (1 – 7) and requesting re-input.  Displays add an item to warehouse menu. | Y |
| 2  2 | **Add an item to Warehouse Menu**  **Validation of user input for** :  Warehouse Selection(1-5)  Item number(0-99999)  Item number(0-99999)  Item price(1-2000000000)  Item Description(1-45characters)  Add another item(Y,N,y,n) | Entered in Order:  1.5: float value  a: non numeric value  0: 1st value < minimum  6: 1st value > maximum  1(minimum value)  1.5: float value  a: non numeric value  -1: 1st value < minimum  100000: 1st value > maximum  16340: Duplicate item number  1001:(Valid item number)  345.6 float value  a: non numeric value  0:1st value < minimum  2000000001: 1st value > maximum  12000(Valid item price)  Description of 46 characters ‘a’  Description of 44 characters ‘a’  1: integer value  a: invalid character  na : invalid length  y: (valid character)  n: (valid character) | Add an item to Warehouse Menu  Warehouse Selection  Warehouse Selection  Item number  Item number  Item number  Item Price  Item Price  Item Description  Item Description  Add another  Add another  Add another | On running the program, displays the initial screen:  Warehouse Information  Warehouse name, total elements and remaining insurance.  Prints warehouses on screen and displays: “ Select a Warehouse: ”  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message, reminder of valid values (1 – 5) and requesting re-input.  Displays Warehouse info, warehouse items and request item number.  Ignores press of ENTER key, rejects invalid input (item number existence) displaying an error-specific message and requesting re-input.  Rejects invalid input (item number existence) and request input.  Requests Item price.  Ignores press of ENTER key, rejects invalid input (item price > warehouse insurance) displaying an error-specific message and requesting re-input.  Decreases warehouse insurance and overall insurance and request Item Description.  Ignores press of ENTER key, rejects invalid input (46 chars) displaying an error-specific message and requesting re-input.  After valid value entered display new item added and ask if user wants to add another record.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats add an item to warehouse menu  Returns to main menu. | Y  Y  Y  Y |
| 3 | **Display Warehouse Items**    **Validation of user input for:**  Main Menu (int 1 - 7)  **Validation of user input for:**  Display warehouse items (1-5)  Display another warehouse(Y,N,y,n) | 2  2.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  5: 1st value > maximum  2: (valid input)  1.2: float value  1: integer value  a: invalid character  na: invalid length  y: (valid character)  n: (valid character) | Main Menu  Display warehouse items  Display warehouse items  Add another  Add another  Add another | Displays all warehouses name, insurance remaining, total elements and request warehouse selection.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Displays selected warehouse name, insurance remaining, total elements, warehouse items. Display warehouse empty message if warehouse empty and ask if user wants to display another warehouse.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats Display warehouse items Menu  Returns to main menu. | Y |
| 4  4 | **Move Warehouse Items:**  **Validation of user input for:**  Main Menu (int 1 - 7)  **Validation of user input for:**  Move Warehouse Items (1-5)  Select Warehouse Items  Select more warehouse items(Y,N,y,n)  Destination Warehouse  Move items again | 3  2.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  5: 1st value > maximum  2: (valid input)  2.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  100000: 1st value > maximum  15679: (valid input)  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character)  2.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  5: 1st value > maximum  2: same as warehouse which item were picked from  3: (valid input)  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character) | Main Menu  Move Warehouse Items  Warehouse selection  Warehouse Items selection  Warehouse Items selection  Select more Items  Select more Items  Destination warehouse selection  Destination warehouse selection  Move items again | Displays all warehouses name, insurance remaining, total elements and request warehouse selection.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Displays selected warehouse name, insurance remaining, total elements, warehouse items, Display warehouse empty message if empty and ask if user to select desired items.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Selects item, increases warehouse and overall insurance and ask if user wants to select more items.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats Select Warehouse Items.  Displays all warehouses name, insurance remaining, total elements and request destination warehouse selection.  Ignores press of ENTER key, rejects each invalid input, displaying  an error-specific message and requesting re-input.  Checks if destination warehouse has enough insurance ,adds items and decrease warehouse and overall insurance.  If insufficient insurance, then seek alternative solution otherwise return items to selected warehouse, decrease selected warehouse and overall insurance and ask if user wants to move more items from other warehouses.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats move warehouse items menu.  Returns to main menu. | Y  Y |
| 5  5 | **Remove Warehouse Items:**  **Validation of user input for:**  Main Menu (int 1 - 7)  **Validation of user input for:**  Remove Warehouse Items (1-5)  Select items to be removed  Select more items to be removed(Y,N,y,n)  Remove more items (Y,N,y,n) | 4  2.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  5: 1st value > maximum  3: (valid input)  200.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  100000: 1st value > maximum  15258: (valid input)  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character)  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character) | Main Menu  Warehouse Selection  Warehouse Selection  Items selection  Items selection  Items selection  Items selection  Items selection  Remove Warehouse Items | Displays all warehouses name, insurance remaining, total elements and request warehouse selection.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Displays selected warehouse name, insurance remaining, total elements, warehouse items, Display warehouse empty message if empty and asks user to select items to be removed.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Selects item and ask if user wants to select more items to be removed.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats select items to be removed.  Removes items, increment warehouse and overall insurance and ask if user wants to remove more items.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats Remove items menu.  Returns to main menu. | Y |
| 6 | **Restore Discarded Items**  **Validation of user input for:**  Main Menu (int 1 - 7)  **Validation of user input for:**  Item id  Select more items to be restored(Y,N,y,n)  Destination warehouse selection | 5  200.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  100000: 1st value > maximum  15258: (valid input)  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character)  2.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  5: 1st value > maximum  3: (valid input) | Main Menu  Item id input  Item id input  Items Selection  Items Selection  Destination warehouse selection  Destination warehouse selection | Displays discarded warehouse items, name, insurance remaining, total elements and request item selection by id.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Display warehouse empty message if empty otherwise  Selects item and ask if user wants to select more items to be restored.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats Restore discarded items menu.  Displays all warehouses name, insurance remaining, total elements and request destination warehouse selection.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Checks if destination warehouse has enough insurance ,adds items and decrease warehouse and overall insurance.  If insufficient insurance, then seek alternative solution otherwise return items to discarded items warehouse and ask if user wants to restore more discarded items. | Y |
| 6 | Select more items to be restored(Y,N,y,n) | 1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character) | Restore more discarded Items  Restore more discarded Items | Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats Restore discarded items menu.  Returns to main menu. | Y |
| 7  7 | **Search an Item**  **Validation of user input for:**  Main Menu (int 1 - 7)  **Validation of user input for:**  Item id  Search item again (Y,N,y,n)  Valid Item id  Search item again (Y,N,y,n) | 6  200.5: float value  a: invalid character  ^: invalid input  0: 1st value <minimum  100000: 1st value > maximum  15258: (valid input but non-existent)  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character)  1  1.2: float value  1: integer value  a: invalid character  y: (valid character)  n: (valid character) | Main Menu  Search an Item  Search an Item  Search an Item  Search an Item  Search an Item  Search an Item  Search an Item  Search an Item  Search an Item | Displays search an item menu, number of user attempts left and request item id.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Ignores press of ENTER key, displays “Item not found” message, and asks if user wants to search an item again.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats search an item menu and decrements user attempts by 1.  Returns to main menu.  Displays items position, number, description, price and asks if user wants to search an item again.  Ignores press of ENTER key, rejects each invalid input, displaying an error-specific message and requesting re-input.  Repeats search an item menu.  Returns to main menu. | Y  Y |
| 8 | **Exit Program**  **Validation of user input for:**  Main Menu (int 1 - 7) | 7 | Main Menu | Displays “Quitting Program” message and terminates program. | Y |