

Gebze Technical University

CSE222 – Data Structures and Algorithms

HW7 – Part4

Subject : Using SearchTree interface with different implemented structure.

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*Problem Description :

Implement a menu-driven program for managing a software store. The system has two types of users: administrators who can update information and users who browse software. To update the information, administrators have to enter the system with a password (a single general password is sufficient). Software search is a public feature. The system maintains the information about each software which at least includes name (including version), quantity, and price. The system should be included at least the following functionalities:

- Administrator enters the system with a password, to be able to add, delete, update information.
- Search by name, quantity etc. should be available.
- The program should allow the tree to be updated when new software packages arrive at the store and when a software package is sold.
- If a package is sold out, the information about the package should be deleted.

Your implementation should use a search tree interface. So, it should be possible to use any data structure implanting search tree interface in your implementation. When it is invoked, your program should automatically create a data structure including the following software packages; Adobe Photoshop 6.0, Adobe Photoshop 6.2, Norton 4.5, Norton 5.5, Adobe Flash 3.3, Adobe Flash 4.0.

*Solution Approach :

In this assignment , we are asked for an implementation of SoftwareStoreSystem , which can manage the store by the administrator and serve some information to its customer with user interface. At the implementation view , we are just only allowed to use SearchTree interface functionality. Because we cannot estimate or guess given data structure.

***Note :** while implementing , I realize that without using any extra data structure to record the information of what is being done , we cannot search with price or quantity .Because the given tree structure is constructed according to name of the software (included version ID). All the staff about tree structured according to name. Therefore, traversing based on quantity or price is impossible (**without using extra data structure**). In our lesson , lecturer said we are not allowed to use any extra data structure in this assignment. For these reasons , I could not implement **searching** with **price** and **quantity**.

***Note :** I want to remark that there is an extra LinkedList in my code view. But this list just for serving and demonstrating the changes through the program flow. It will make your checking whether it is what is asked for , easy.

*Test Cases:

Test ID	Scenario	Test Data	Expected Result	Actual Result	Pass / Fail
T01	List all book.	[----- Name : Adobe Photoshop 6.0 Quantity : 5 Price : 20.75 TL , ----- Name : Adobe Photoshop 6.2 Quantity : 4 Price : 15.35 TL , ----- Name : Norton 4.5 Quantity : 6 Price : 15.6 TL , ----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL , ----- Name : Adobe Flash 3.3 Quantity : 4 Price : 13.5 TL]	-----All-Software----- [----- Name : Adobe Photoshop 6.0 Quantity : 5 Price : 20.75 TL , ----- Name : Adobe Photoshop 6.2 Quantity : 4 Price : 15.35 TL , ----- Name : Norton 4.5 Quantity : 6 Price : 15.6 TL , ----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL , ----- Name : Adobe Flash 3.3 Quantity : 4 Price : 13.5 TL]	Expected result has been occurred.	Pass
T02	Search software by name ("Norton 5.5")	----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL	----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL	Expected result has been occurred.	Pass

T03	Login as administrator	Password("gtu")	(1) Add Software (2) Delete Software (3) Update book (4) Quit Choice :	Expected result has been occurred.	Pass
T04	Add Software :	Enter software name (not include version) : Microsoft 2007 Enter software version : 1.0 Enter the quantity of the software : 5 Enter the price of the software : 25	*New software added to store-system	Expected result has been occurred.	Pass
T05	Quit	Before backing general menu	General menu display.	Expected result has been occurred.	Pass

T06	List all the software	<p>----- Name : Adobe Photoshop 6.0 Quantity : 5 Price : 20.75 TL</p> <p>, ----- Name : Adobe Photoshop 6.2 Quantity : 4 Price : 15.35 TL</p> <p>, ----- Name : Norton 4.5 Quantity : 6 Price : 15.6 TL</p> <p>, ----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL</p> <p>, ----- Name : Adobe Flash 3.3 Quantity : 4 Price : 13.5 TL</p> <p>, ----- Name : Microsoft 2007 1.0 Quantity : 5 Price : 25.0 TL</p>	<p>-----All-Software----- [----- Name : Adobe Photoshop 6.0 Quantity : 5 Price : 20.75 TL</p> <p>, ----- Name : Adobe Photoshop 6.2 Quantity : 4 Price : 15.35 TL</p> <p>, ----- Name : Norton 4.5 Quantity : 6 Price : 15.6 TL</p> <p>, ----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL</p> <p>, ----- Name : Adobe Flash 3.3 Quantity : 4 Price : 13.5 TL</p> <p>, ----- Name : Microsoft 2007 1.0 Quantity : 5 Price : 25.0 TL</p> <p>]</p>	Expected result has been occurred.	Pass
T07	Login as administrator	Password("gtu")	<p>(1) Add Software (2) Delete Software (3) Update book (4) Quit Choice :</p>	Expected result has been occurred.	Pass

T08	Delete Software	Enter software name (not include version) : Adobe Flash Enter software version : 3.3	*Software is removed entirely.	Expected result has been occurred.	Pass
T09	Quit	Before backing general menu	General menu display.	Expected result has been occurred.	Pass
T10	List all the software	----- Name : Adobe Photoshop 6.0 Quantity : 5 Price : 20.75 TL , ----- Name : Adobe Photoshop 6.2 Quantity : 4 Price : 15.35 TL , ----- Name : Norton 4.5 Quantity : 6 Price : 15.6 TL , ----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL , ----- Name : Microsoft 2007 1.0 Quantity : 5 Price : 25.0 TL	-----All-Software----- [----- Name : Adobe Photoshop 6.0 Quantity : 5 Price : 20.75 TL , ----- Name : Adobe Photoshop 6.2 Quantity : 4 Price : 15.35 TL , ----- Name : Norton 4.5 Quantity : 6 Price : 15.6 TL , ----- Name : Norton 5.5 Quantity : 7 Price : 20.1 TL , ----- Name : Microsoft 2007 1.0 Quantity : 5 Price : 25.0 TL]	Expected result has been occurred.	
T11	Login as administrator	Password("gtu")	(1) Add Software (2) Delete Software (3) Update book (4) Quit Choice :	Expected result has been occurred.	Pass

T12	Update	Update menu display Enter software name (not include version) : Norton Enter software version : 5.5	(1) Edit name (2) Edit version code (3) Sell that product (only 1 element) (4) Edit quantity (5) Edit price (6) Quit	Expected result has been occurred.	Pass
T12	Edit name	Enter new name : NortonGTU	Nothing happen , it refers everything is good.	Expected result has been occurred.	Pass
T13	Edit version code	Enter new version code : 10.0	Nothing happen , it refers everything is good.	Expected result has been occurred.	Pass
T14	Edit quantity	Enter the new quantity of the software : 10	Quantity has been updated.	Expected result has been occurred.	Pass
T15	Sell that product (only 1 element)		An item which matches selected product has been sold.	Expected result has been occurred.	Pass
T16	Edit price	Enter new price as Turkish-Lira: 50	Price has been updated.	Expected result has been occurred.	Pass
T17	Quit	Before backing administrator menu	administrator menu display.	Expected result has been occurred.	Pass

T18	Quit	Before backing general menu	General menu display.	Expected result has been occurred.	Pass
T19	Login as administrator	Password(“WRO NG”)	**Invalid password !	Expected result has been occurred.	Pass
T20	Search software by name	Enter the name of the software (included version) : GTU	There is no software with matched given name.	Expected result has been occurred.	Pass
T21	Quit	Quitting the program	Quit the program safely.	Expected result has been occurred.	Pass

***Class Diagram:**

*Attached to the assignment file as png.

***Running Command and Result:**

*Attached to the assignment file as txt.