GIT Department of Computer Engineering

CSE 222/505 - Spring 2020

Homework #7 Part 4 Report

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PROBLEM SOLUTION APPROACH

STEP 1 – Create a search tree interface to keep software packages at the store, so every class that extends search tree class can be used
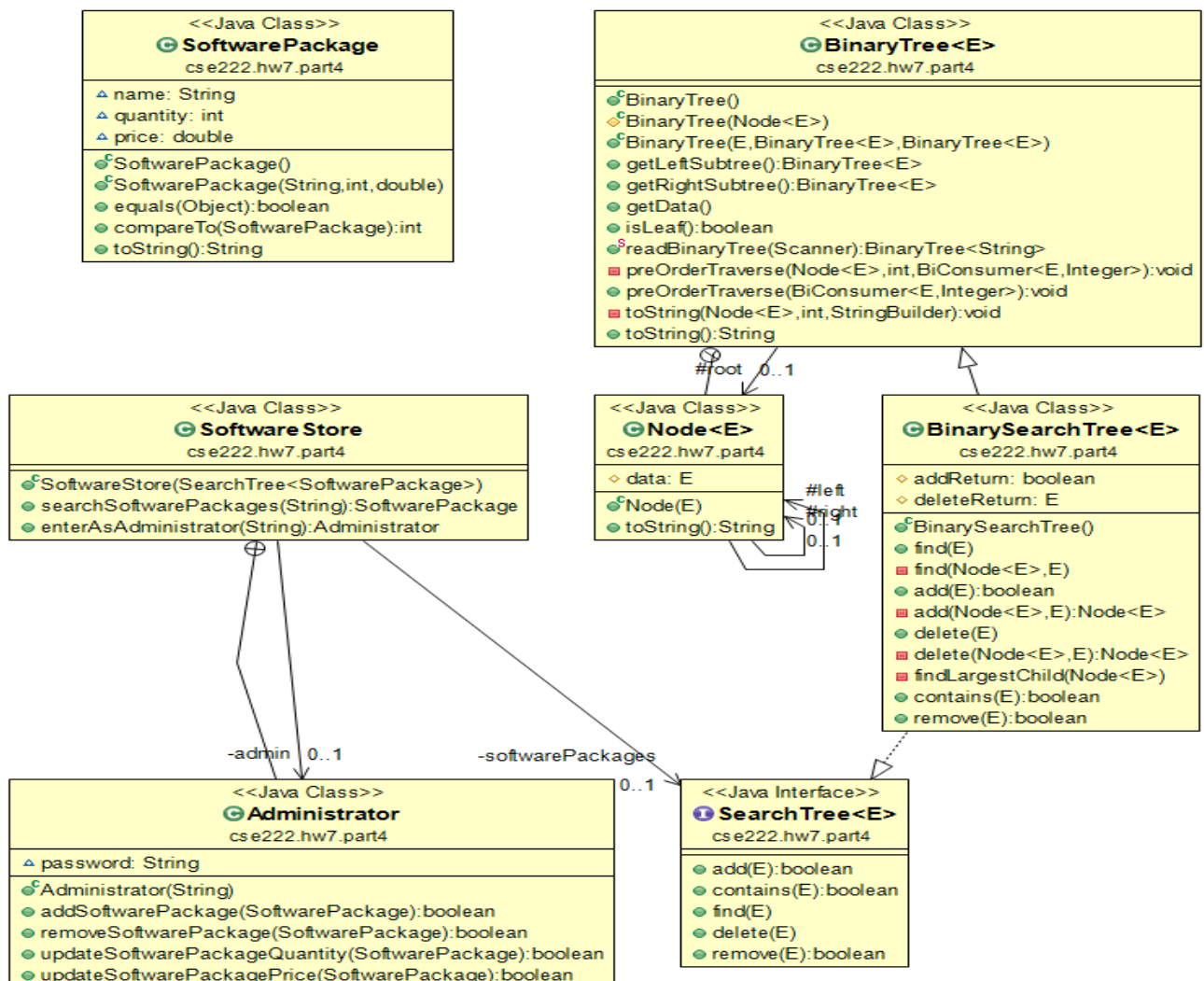
STEP 2 – Create an Administrator class and define operations an Administrator can in that class

STEP 3 – In SoftwareStore class, after implement Administrator class , defined 2 public operation, one of them searching softwares with names (customers can use it), one of them is to access admin in SoftwareStore with password

STEP 4 – Writed a main program to show all operations

Note: We can not do searchin by name , quantity, price cause of the tree is ordered according to one of them (which is we define in compareTo function from Comparable class) , unless keeping more than one tree, there is no solution for that cause we can not access a search tree data directly , so it can be done just one search

CLASS DIAGRAM

<<Java Class>> SoftwarePackage (cse222.hw7.part4)
- name: String
- quantity: int
- price: double
- SoftwarePackage()
- SoftwarePackage(String,int,double)
- equals(Object):boolean
- compareTo(SoftwarePackage):int
- toString():String

<<Java Class>> BinaryTree<E> (cse222.hw7.part4)
- BinaryTree()
- BinaryTree(Node<E>)
- BinaryTree(E,BinaryTree<E>,BinaryTree<E>)
- getLeftSubtree():BinaryTree<E>
- getRightSubtree():BinaryTree<E>
- getData()
- isLeaf():boolean
- readBinaryTree(Scanner):BinaryTree<String>
- preOrderTraverse(Node<E>,int,BiConsumer<E,Integer>):void
- preOrderTraverse(BiConsumer<E,Integer>):void
- toString(Node<E>,int,StringBuilder):void
- toString():String

<<Java Class>> Software Store (cse222.hw7.part4)
- SoftwareStore(SearchTree<SoftwarePackage>)
- searchSoftwarePackages(String):SoftwarePackage
- enterAsAdministrator(String):Administrator

<<Java Class>> Node<E> (cse222.hw7.part4)
- data: E
- Node(E)
- toString():String

#root 0..1 #left 0..1 #right 0..1

<<Java Class>> BinarySearchTree<E> (cse222.hw7.part4)
- addReturn: boolean
- deleteReturn: E
- BinarySearchTree()
- find(E)
- find(Node<E>,E)
- add(E):boolean
- add(Node<E>,E):Node<E>
- delete(E)
- delete(Node<E>,E):Node<E>
- findLargestChild(Node<E>)
- contains(E):boolean
- remove(E):boolean

-admin 0..1   -softwarePackages 0..1

<<Java Class>> Administrator (cse222.hw7.part4)
- password: String
- Administrator(String)
- addSoftwarePackage(SoftwarePackage):boolean
- removeSoftwarePackage(SoftwarePackage):boolean
- updateSoftwarePackageQuantity(SoftwarePackage):boolean
- updateSoftwarePackagePrice(SoftwarePackage):boolean

<<Java Interface>> SearchTree<E> (cse222.hw7.part4)
- add(E):boolean
- contains(E):boolean
- find(E)
- delete(E)
- remove(E):boolean

TEST CASES

TEST ID	Scenario	Test Data	Expected Results	Actual Results	Pass/Fail
TEST01	Giving wrong password to login as administrator	"sfdsfs"	Successfully Printed	As Expected	Pass
TEST02	Giving wrong name to search by name	"kalem"	Successfully Printed	As Expected	Pass
TEST03	Searching by name with correct input	"Norton 4.5"	Successfully Printed	As Expected	Pass
TEST04	Giving right password to login as administrator	"1234"	Successfully Logined	As Expected	Pass
TEST05	Add a software package	Name: murat Quantity: 56 Price: 89	Successfully Addded	As Expected	Pass
TEST06	Update a software package's quantity	New Quantity: 10	Successfully Updated	As Expected	Pass
TEST07	Update a software package's price	New Price: 5	Successfully Updated	As Expected	Pass
TEST08	Update a software package's quantity	New Quantity: 0	Successfully Removed	As Expected	Pass

RUNNING AND RESULTS

TEST01

```
Welcome to Software Store


1- Login as Administrator

2- Search by name

3- Exit

Your choice: 1

Please enter administrator password:  sdfsdfs


You entered an invalid password
```

TEST02

```
   Welcome to Software Store


   1- Login as Administrator

   2- Search by name

   3- Exit

   Your choice: 2

   Please enter name of the software package you want to search : kalem

   There is no software package in that name at the store
```

TEST03

```
Welcome to Software Store


1- Login as Administrator

2- Search by name

3- Exit

Your choice: 2

Please enter name of the software package you want to search : Norton 4.5

Software Package

- name: Norton 4.5
- quantity: 10
- price: 45.0
```

TEST04

```
Welcome to Software Store


1- Login as Administrator

2- Search by name

3- Exit

Your choice: 1

Please enter administrator password:  1234


Select an operaton as Administrator


1- Add software package

2- Remove software package

3- Update a software package's quantity

4- Update a software package's price

5- Return main menu

Your choice: |
```

TEST05

Select an operaton as Administrator

1- Add software package

2- Remove software package

3- Update a software package's quantity

4- Update a software package's price

5- Return main menu

Your choice: *1*

Please enter name of the software package you want to add: *murat*

Please enter quantity of the software package you want to add: *56*

Please enter price of the software package you want to add: *89*

Welcome to Software Store

1- Login as Administrator

2- Search by name

3- Exit

Your choice: *2*

Please enter name of the software package you want to search : *murat*

Software Package

- name: murat
- quantity: 56
- price: 89.0

TEST06

Select an operaton as Administrator

1- Add software package

2- Remove software package

3- Update a software package's quantity

4- Update a software package's price

5- Return main menu

Your choice: *3*

Please enter name of the software package you want to update its quantity : *murat*

Found:
Software Package

- name: murat
- quantity: 56
- price: 89.0
Please enter new quantity of the software package you want to update : *10*

Welcome to Software Store

1- Login as Administrator

2- Search by name

3- Exit

Your choice: *2*

Please enter name of the software package you want to search : *murat*

Software Package

- name: murat
- quantity: 10
- price: 89.0

TEST07

Select an operaton as Administrator

1- Add software package

2- Remove software package

3- Update a software package's quantity

4- Update a software package's price

5- Return main menu

Your choice: 4

Please enter name of the software package you want to update its price : murat

Found:
Software Package

- name: murat
- quantity: 10
- price: 89.0
Please enter new price of the software package you want to update : 5

Welcome to Software Store

1- Login as Administrator

2- Search by name

3- Exit

Your choice: 2

Please enter name of the software package you want to search : murat

Software Package

- name: murat
- quantity: 10
- price: 5.0

TEST08

Select an operaton as Administrator

1- Add software package

2- Remove software package

3- Update a software package's quantity

4- Update a software package's price

5- Return main menu

Your choice: *3*

Please enter name of the software package you want to update its quantity : *murat*

Found:
Software Package

- name: murat
- quantity: 10
- price: 5.0
Please enter new quantity of the software package you want to update : *0*

Welcome to Software Store

1- Login as Administrator

2- Search by name

3- Exit

Your choice: *2*

Please enter name of the software package you want to search : *murat*

There is no software package in that name at the store