

GTU Department of Computer Engineering

CSE 222/505 - Spring 2020

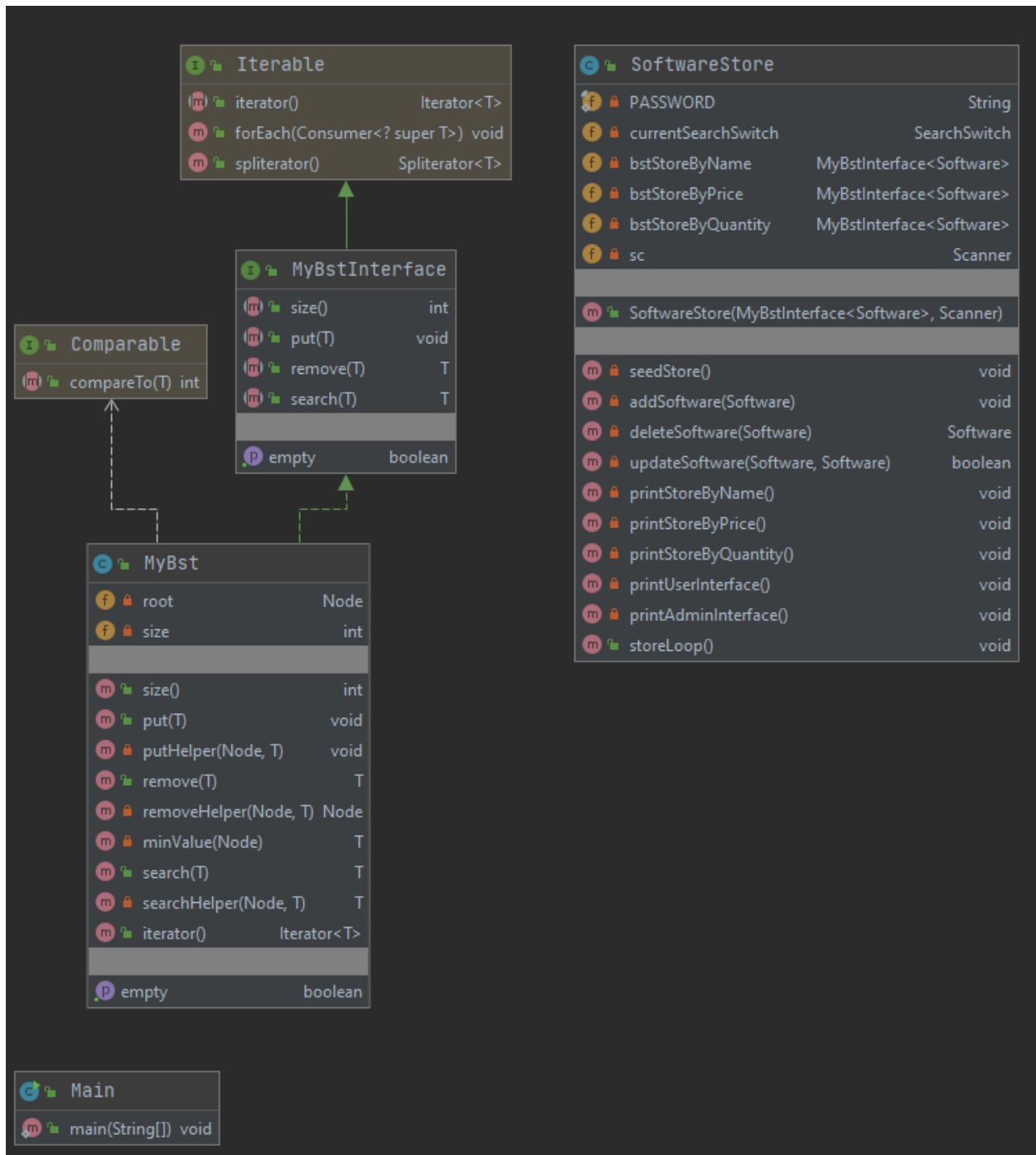
Homework 7 Report

Q4

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1. Class Diagrams



2. Problem Solution Approach

The main problem was storing data in BST in such way that it will allow for multiple search keys.

For achieving this I hold the data in 3 identical BSTs. Every bst has different search primary keys but holds the same data.

To change the compareTo method of Software data class I used a SwitchSearch enum which holds the primary search key state of software store adts.

For example before accessing the bst that holds the softwares with primary key of names, I set this SwitchSearch state to Searching by name. This way the compareTo method of software data class behaves differently on different states.

To show that these bsts work correctly, I have implemented the iterable interface to this SearchTree interface. This way we can view the whole content of the tree by iterating over it.

In constructor I get the implemented BST from user by basic dependency injection. Then figure out the

implementation by java reflection abilities and create the instances of these BSTs depending on the users BST implementation.

3. Results

===== Software Store =====

- 1- Search by name
- 2- Search by quantity
- 3- Search by price
- 4- Admin Login
- 5- Show store stock by name
- 6- Show store stock by price
- 7- Show store stock by quantity
- 0- Exit

5

Adobe Flash 3.3, \$25, 30 In Stock

Adobe Flash 4.0, \$35, 50 In Stock

Adobe Photoshop 6.0, \$120, 50 In Stock

Adobe Photoshop 6.2, \$150, 50 In Stock

Norton 4.5, \$100, 100 In Stock

Norton 5.5, \$160, 60 In Stock

===== Software Store =====

- 1- Search by name
- 2- Search by quantity
- 3- Search by price
- 4- Admin Login
- 5- Show store stock by name
- 6- Show store stock by price
- 7- Show store stock by quantity
- 0- Exit

1

Search by name: Norton 4.5

Found software: Norton 4.5, \$100, 100 In Stock

===== Software Store =====

- 1- Search by name
- 2- Search by quantity
- 3- Search by price
- 4- Admin Login
- 5- Show store stock by name
- 6- Show store stock by price
- 7- Show store stock by quantity
- 0- Exit

6

Adobe Flash 3.3, \$25, 30 In Stock

Adobe Flash 4.0, \$35, 50 In Stock

Norton 4.5, \$100, 100 In Stock

Adobe Photoshop 6.0, \$120, 50 In Stock

Adobe Photoshop 6.2, \$150, 50 In Stock

Norton 5.5, \$160, 60 In Stock

===== Software Store =====

- 1- Search by name
- 2- Search by quantity
- 3- Search by price
- 4- Admin Login
- 5- Show store stock by name
- 6- Show store stock by price
- 7- Show store stock by quantity
- 0- Exit

4

Password ps(1234): 1234

===== Software Store (Admin) =====

- 1- Show store stock
- 2- Update Software
- 3- Delete Software
- 4- Add Software
- 0- Log out

2

Enter name of software: Adobe Photoshop 6.0

Found software: Adobe Photoshop 6.0, \$120, 50 In Stock

Enter new name (or leave blank for unchanged):

Enter new quantity (or -1 for unchanged): 49

Enter new price (or -1 for unchanged): -1

Updated software!

===== Software Store (Admin) =====

- 1- Show store stock

2- Update Software

3- Delete Software

4- Add Software

0- Log out

2

Enter name of software: Adobe Flash 3.3

Found software: Adobe Flash 3.3, \$25, 30 In Stock

Enter new name (or leave blank for unchanged):

Enter new quantity (or -1 for unchanged): 999

Enter new price (or -1 for unchanged): 999

Updated software!

===== Software Store (Admin) =====

1- Show store stock

2- Update Software

3- Delete Software

4- Add Software

0- Log out

1

Adobe Flash 3.3, \$999, 999 In Stock

Adobe Flash 4.0, \$31, 31 In Stock

Adobe Photoshop 6.0, \$120, 50 In Stock

Adobe Photoshop 6.2, \$150, 50 In Stock

Norton 4.5, \$100, 100 In Stock

Norton 5.5, \$160, 60 In Stock

===== Software Store (Admin) =====

1- Show store stock

2- Update Software

3- Delete Software

4- Add Software

0- Log out