

GTU Department of Computer Engineering

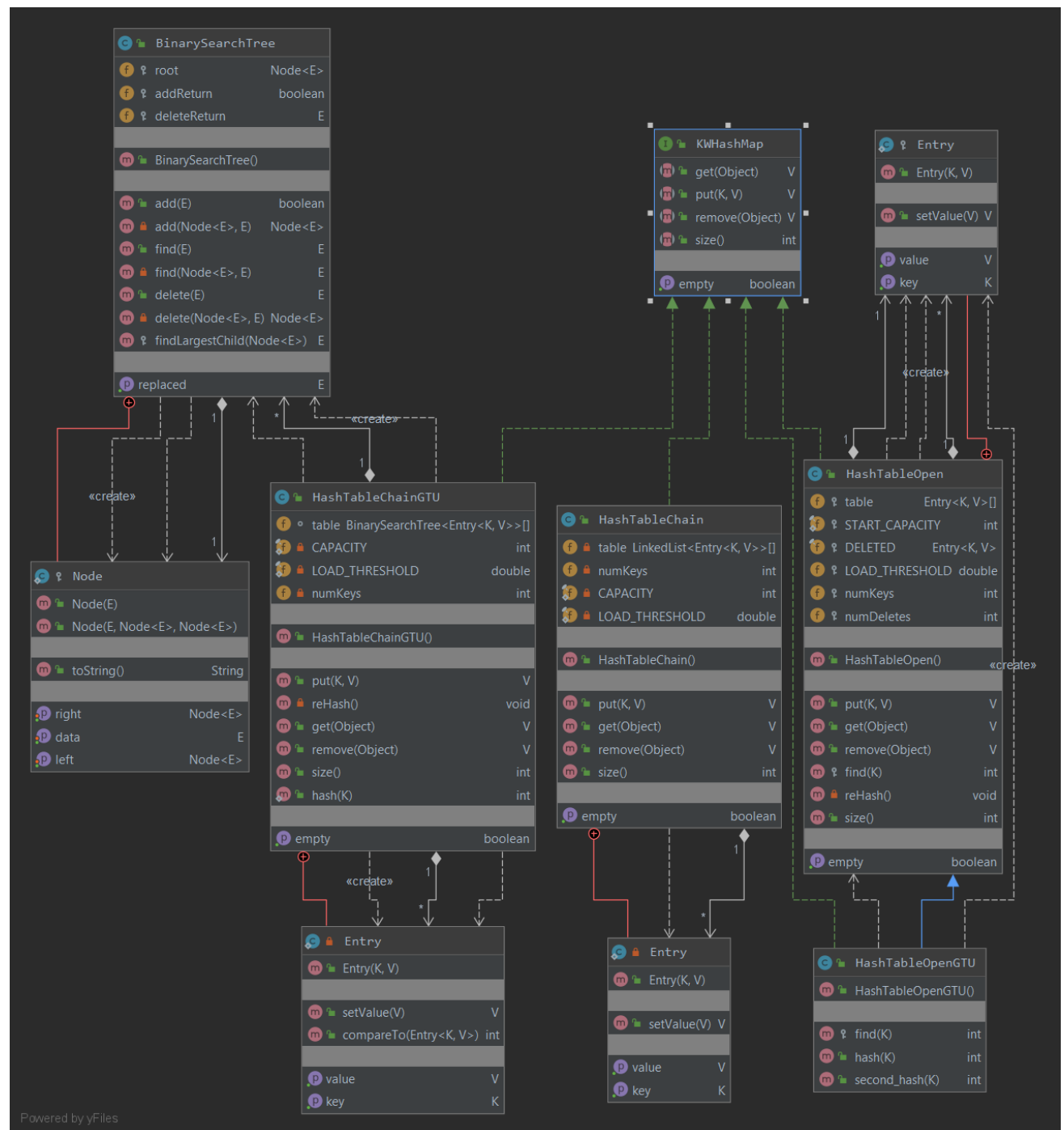
CSE 222/505 - Spring 2020

Homework 6-Q3

Report

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Class Diagram



Problem Solution Approach

First i have created the BinarySearchTree class to handle the tree operations like adding element to tree, removing element from tree. Then i have used this BinarySearchTree class for chaining in HashTableChainGTU class. There was just a few difference between HashTableOpenGTU and HashtableOpen which is in book so I have extend my HashTableOpenGTU from HashtableOpen and I have override some methdos like find(). Then i have added some hashing methods. I could not implement the secon_hash method properly.

Test Cases

Test ID	Scenerio	Test Data	Expected Result	Actual Result	Pass/Fail
1	Add random elements.	10000 random element. 20000 random element. 30000 random element. 40000 random element. 50000 random element.	All elements are added.	As Expected	Pass
2	Delete some random elements.	Random keys	The elements which is in the table are deleted.	As Expected	Pass
3	Get some elements randomly	Random keys	If the element is in the table this element will be found.	As Expected	Pass

Running command and results

10000 elements have been added to HashTableChainGTU 41 ms

3926 element have been got randomly (HashTableChainGTU)7 ms

3160 element have been removed randomly (HashTableChainGTU)9 ms

20000 elements have been added to HashTableChainGTU 40 ms

9344 element have been got randomly (HashTableChainGTU)17 ms

7308 element have been removed randomly (HashTableChainGTU)20 ms

30000 elements have been added to HashTableChainGTU 37 ms

15334 element have been got randomly (HashTableChainGTU)24 ms

11979 element have been removed randomly (HashTableChainGTU)25 ms

40000 elements have been added to HashTableChainGTU 48 ms

21359 element have been got randomly (HashTableChainGTU)19 ms

16691 element have been removed randomly (HashTableChainGTU)24 ms

50000 elements have been added to HashTableChainGTU 62 ms

27516 element have been got randomly (HashTableChainGTU)14 ms

21718 element have been removed randomly(HashTableChainGTU)16 ms

Process finished with exit code 0

