

1. MyHashTable is a helper class that implement all kinds of use of a hash table including
Hash : Use the following hash function: $\text{Math.abs}(\text{Character.valueOf}(c) \% \text{tableSize})$
Insert: insert the character into the hash table while expand the hash table depends on if reach its max-capacity.
ExpandTable: Expand the current hash table while copy and paste all the inserted kets into the expanded table.
InsertHelper: Helper method for Insert. (find the next available position if there is another same key that is already exist.
Delete: delete the corresponding char in the hash table.
Find: find the corresponding char in the hash table.
getTableSize : return the current table size

It has only one method and evolved almost every single method that exist in MyHashTable class. This method is called checkAnagrams. It Hash each character in string X into a hash table with its appropriate frequency, then Iterate over each character in string Y. After iterating, return true if the hash table is empty and false otherwise.

The screenshot shows an IDE with three tabs: HW4Solution.java, HW4Main.java, and MyHashMap.java. The HW4Main.java file is active, showing a Java program that tests the checkAnagrams method. The code defines a main method that takes a String[] array and iterates through various test cases, including null values, empty strings, and strings with different character frequencies. The output of the program is shown in the console, indicating that all test cases passed (true) or failed (false) as expected.

```

17  String str1 = data;
18  String str2 = "aadt";
19  System.out.println("test case 1: " + hw4Solution.checkAnagrams(str1, str2));
20
21  str1 = null;
22  str2 = "aadt";
23  System.out.println("test case 2: " + hw4Solution.checkAnagrams(str1, str2));
24
25  str1 = "";
26  str2 = "aadt";
27  System.out.println("test case 3: " + hw4Solution.checkAnagrams(str1, str2));
28
29  str1 = " ";
30  str2 = "aadt";
31  System.out.println("test case 4: " + hw4Solution.checkAnagrams(str1, str2));
32
33  str1 = "da ta ";
34  str2 = "aadt";
35  System.out.println("test case 5: " + hw4Solution.checkAnagrams(str1, str2));
36
37  str1 = "iiiiiiiiifdsfdasfdasfdasfcbxnmmbhjfsdfjklhjkfjhkl;sdhfsdjkhfsdjk";
38  str2 = "aadt";
39  System.out.println("test case 6: " + hw4Solution.checkAnagrams(str1, str2));
40
41  str1 = "iiiiiiiiifdsfdasfdasfdasfcbxnmmbhjfsdfjklhjkfjhkl;sdhfsdjkhfsdjk ";
42  str2 = "iiiiiiiiifdsfdasfdasfdasfcbxnmmbhjfsdfjklhjkfjhkl;sdhfsdjkhfsdjk";
43  System.out.println("test case 7: " + hw4Solution.checkAnagrams(str1, str2));
44
45  str1 = "woshi shei";

```

The console output shows the results of the tests:

```

test case 1: true
test case 2: false
test case 3: false
test case 4: false
test case 5: true
test case 6: false
test case 7: true
test case 8: false
test case 9: false
test case 10: true

```