Week 1

Week 3

Swap: Write a generic method to exchange two elements of an array. The method should take an array, and two integer indices into the array, and swap the two entries in the array at those indices.

**package** genericMethods;

**import** java.util.Arrays;

**public** **class** GenericMethods {

**public** **static** <T> **boolean** equals(T object1,T object2) {

**if** (object1==**null**) {

**return** object2==**null**;

} **else** {

**return** object1.equals(object2);

}

}

**public** **static** <T> **void**

swap(T[]array,**int** i, **int** j)

{

T obj1 = array[i];

T obj2 = array[j];

array[i] = obj2; //

array[j] =obj1;

}

**public** **static** **void** main(String[] args)

{

Object[] ints = {1, 2, 3, 4, 5}; //array list that is going to be swapped

*swap*(ints, 0, 3); // defining the index number in the array that are going to be swapped

System.***out***.println(Arrays.*toString*(ints)); // prints out the swapped array to be checked

}

}

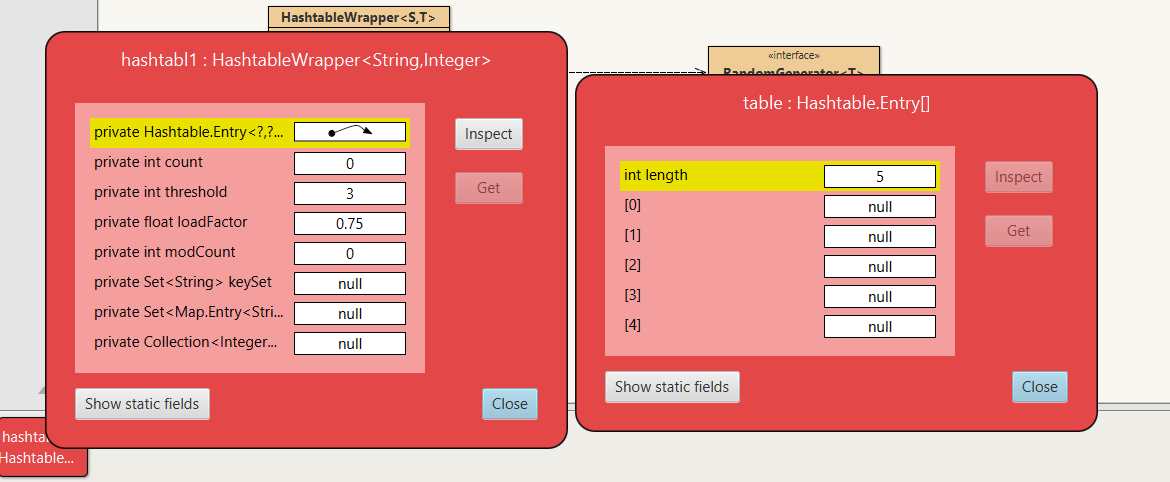
Week 5

Week 6

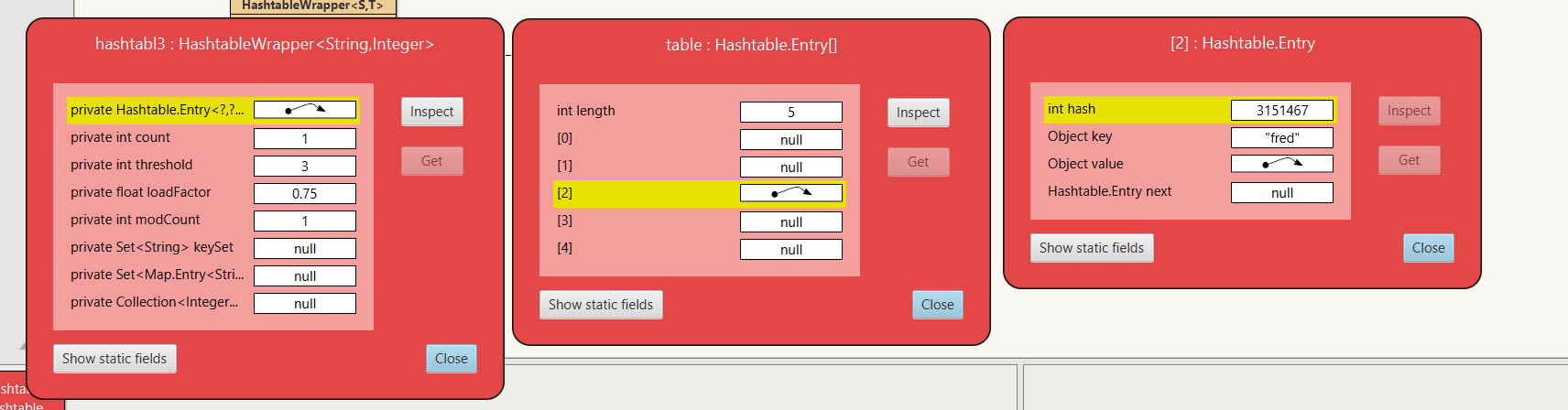
Week 7

Week 8

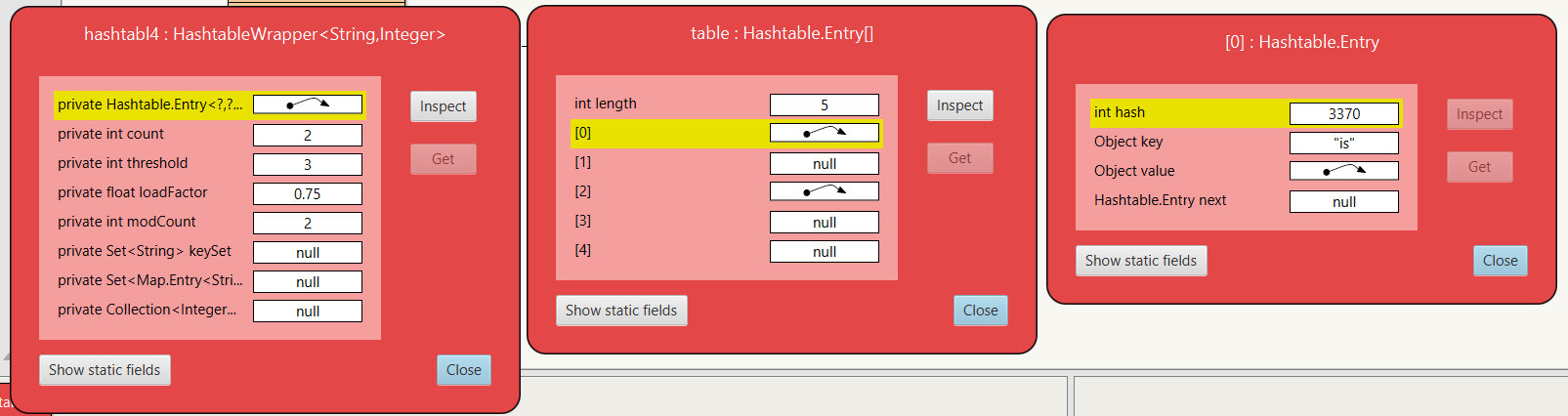
1) In this picture I have created a hashtable with string and a integer.



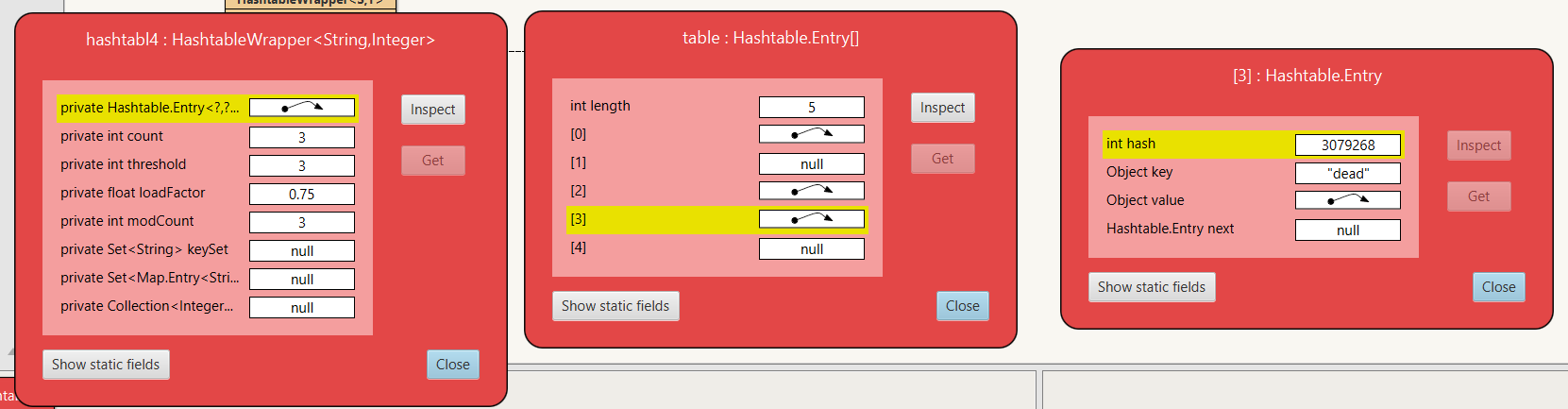
2) Here I have added “fred” as the string and 37 as the integer, the hash number is 3151467. This item went into position 2 in the hashtable.



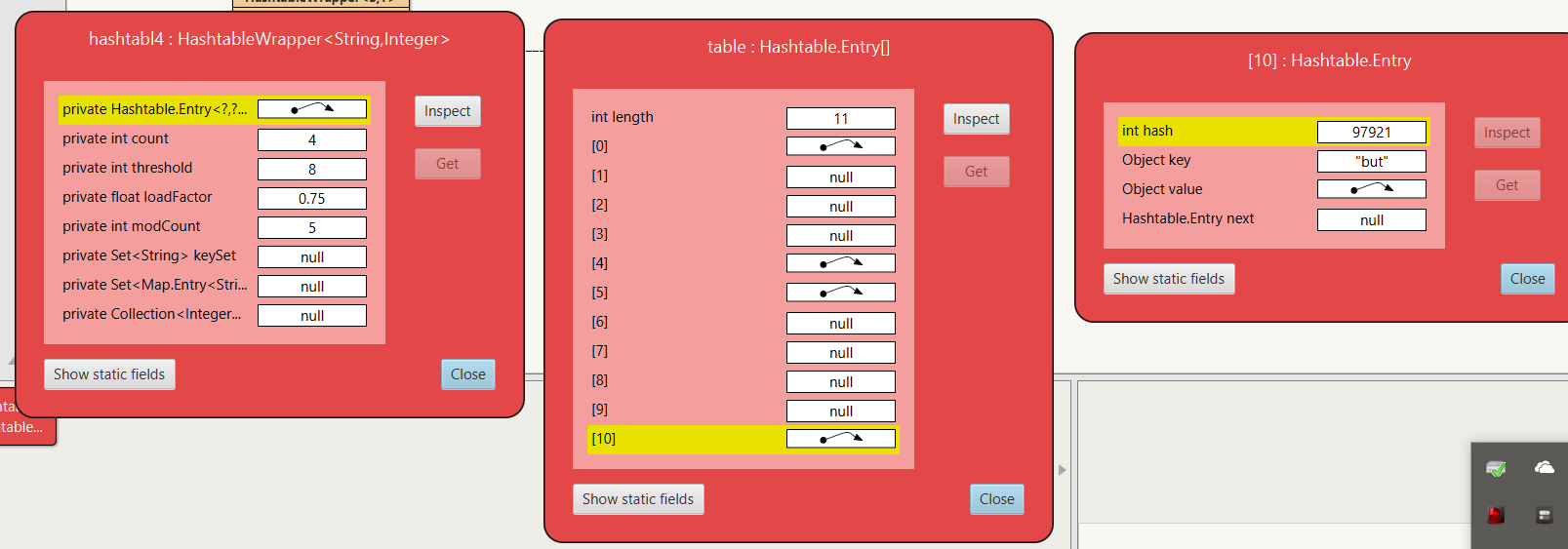
3) The 2nd entry I added is “is” with an integer of 69 and the hash number is 3370. This item went into position 0 in the hashtable.



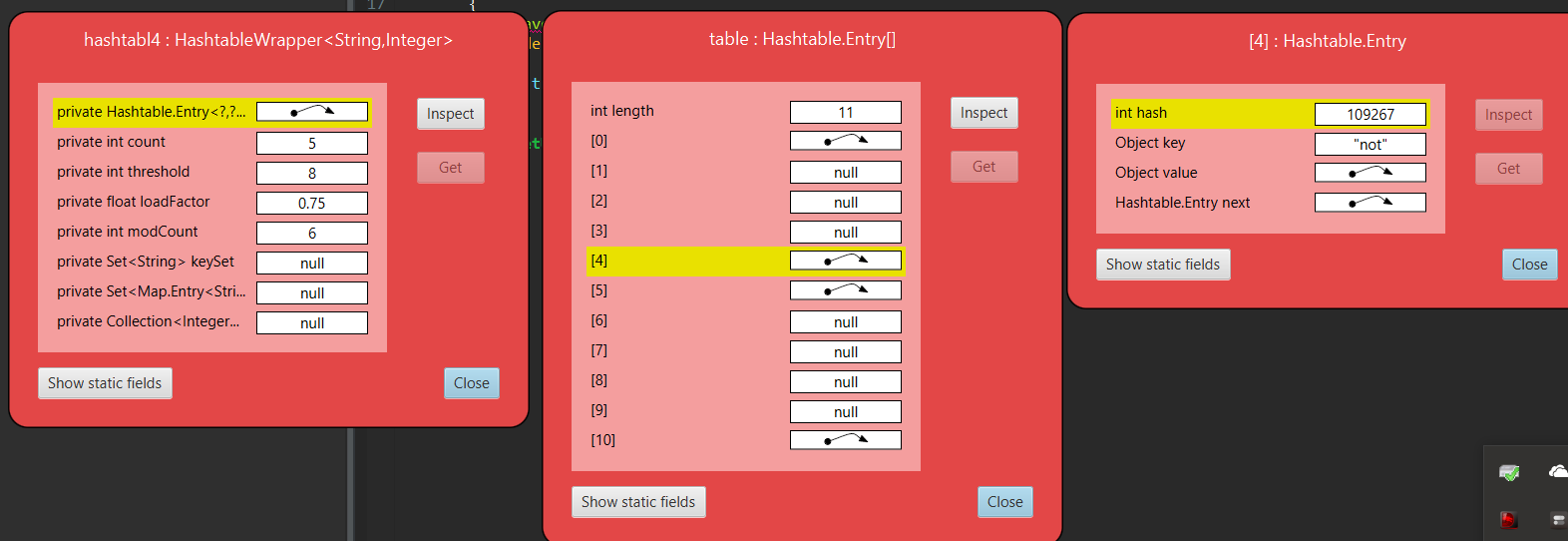
4) The 4th entry into the hashtable is “dead” with it the integer was 0 and the has number was 3079268. The 3rd position in this hashtable was taken up by this entry.



5) The 5th entry into the hashtable was the string “but” and the integer was 999 and the hash number was 97921. This item created new entries into the hashtable, thus moving this entry into the 10th position. Also some of the items have moved around in the hashtable “fred” has moved from position 2 to position 0, and “is” has now moved to position 4, “dead” has moved from 3 to 5



6) in this step I added “not” and the int -42 this went into the 4th position, with the hash number of 109267. Adding this entry removed entry “is” from the hashtable.



7) in this entry I added “me!” and the integer of -1 this went into the 3rd position in the hashtable with a hash number 107913 nothing else in the array has changed.

Week 10

Week 11

Week 13

Week 14

Week 15

Week 16

Week 17

***Week 20***

For the first test I made 0 the pure state then passed it through a Hadamard gate to see what would happen to it. After the first pass through the Hadamard gate I put the answer through another one to see how that would affect the answer.

Hadamard \* ZERO

ans =

0.7071

0.7071

Hadamard \* ans

ans =

1.0000

0

Hadamard \* ONE

ans =

0.7071

-0.7071

Hadamard \* ans

ans =

0

1.0000