

Feedback — Hash Tables

You submitted this quiz on **Sun 28 Feb 2016 10:26 AM PST**. You got a score of **3.00** out of **3.00**.

To specify an array or sequence of values in an answer, separate the values in the sequence by whitespace. For example, if the question asks for the first ten powers of two (starting at 1), then the following answer is acceptable:

```
1 2 4 8 16 32 64 128 256 512
```

If you wish to discuss a particular question and answer in the forums, please post the entire question and answer, including the seed (which can be used by the course staff to uniquely identify the question) and the explanation (which contains the correct answer).

Question 1

(seed = 269779)

Insert the following sequence of 12 keys into a separate-chaining hash table with 3 chains:

key	hash
T	0
N	0
Y	2
K	0
W	0
P	2
Q	0
L	1
F	1
E	0
A	2
Z	0

Consider a search hit for the key E, whose hash value is 0.
What is the sequence of keys that get compared with E?

You entered:

ZEQWKNT

Your Answer		Score	Explanation
ZEQWKNT	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

The correct answer is: Z E

Here is the separate-chaining hash table after inserting the 12 keys:

0: Z -> E -> Q -> W -> K -> N -> T

1: F -> L

2: A -> P -> Y

Question 2

(seed = 632217)

Give the array that results after inserting the following sequence of 10 keys into an initially empty linear-probing hash table.

key	hash
L	6
F	0
H	2
S	3
Q	1
J	4
W	7
A	5
I	3
D	8

Assume that the size of the hash table is 10 and that it neither grows nor shrink.

You entered:

FQHSJALWID

Your Answer		Score	Explanation
FQHSJALWID	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

The correct answer is: F Q H S J A L W I D

Here is the array immediately after each insertion:

```
L:  - - - - - L - - -  
F:  F - - - - L - - -  
H:  F - H - - L - - -  
S:  F - H S - - L - - -  
Q:  F Q H S - - L - - -  
J:  F Q H S J - L - - -  
W:  F Q H S J - L W - -  
A:  F Q H S J A L W - -  
I:  F Q H S J A L W I -  
D:  F Q H S J A L W I D
```

Question 3

(seed = 407883)

Suppose that the following keys are inserted into an initially empty linear-probing hash table but not necessarily in the order given:

key	hash
---	----
A	2
F	0
K	5
N	1
P	3
U	1
Y	5

Assuming that the size of the hash table is 7 and that it does not grow or shrink, which one or more of the following could be the contents of the resulting array?

Your Answer		Score	Explanation
<input checked="" type="checkbox"/> F U N A P Y K	✓	0.20	U F N Y K A P
<input type="checkbox"/> N K A F P Y U	✓	0.20	
<input type="checkbox"/> Y F U P N K A	✓	0.20	
<input type="checkbox"/> Y P F N U A K	✓	0.20	No key is in preferred position.
<input checked="" type="checkbox"/> F N U P A Y K	✓	0.20	Y N F U K P A
Total		1.00 / 1.00	