Hash Tables

Warning: The hard deadline has passed. You can attempt it, but **you will not get credit for it**. You are welcome to try it as a learning exercise.

To specify an array or sequence of values in an answer, you must separate the values by a single space character (with no punctuation and with no leading or trailing whitespace). For example, if the question asks for the first ten powers of two (starting at 1), the only accepted answer is:

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 is used by the course staff to uniquely identify the question) and the explanation (which contains the correct answer).

☐ **In accordance with the Coursera Honor Code, I (Atul Gupta) certify that the answers here are my own work.**

Question 1

(seed = 90322)
Insert the following sequence of 12 keys into a separate chaining hash table with 3 chains:

key	hash
K	0
G	2
D	2
J	2
C	1
E	0
R	1
M	2
H	0
T	0
Q	0
L	1

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

Question 2

(seed = 797827)
Give the array that results after inserting the following sequence of 10 keys
into an initially empty linear probing hash table.

key	hash
O	9
R	2
Q	1
M	7
K	5
D	8
G	1

```
 Z    0
 A    5
 L    6

Assume that the size of the hash table is 10 and that it does not grow or shrink.
```

Question 3

```
(seed = 705756)
Suppose that the following keys are inserted into an initially empty linear probing hash table
but not necessarily in the order given:

key  hash
---  ----
 G    1
 I    3
 J    4
 M    0
 R    5
 Y    5
 Z    6

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?
```

- [ ] M Y R G I J Z
- [ ] M G I Z R J Y
- [ ] Z M G I J R Y
- [ ] M G Z I J R Y
- [ ] G R I Y M Z J

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You cannot submit your work until you agree to the Honor Code. Thanks!