Q1- Counting Sort

Question 1 **1 / 1 point**

The Distribution Counting Sort is a general purpose sorting algorithm.

- True
- ✓ False

Q2- ShiftTable

Question 2 **0 / 1 point**

Consider Horspool's algorithm as explained in your text. Assume the alphabet {A,B,C,D,E}. Construct the shift table for the pattern P="DCBAE".

Show your answer as a shift vector S[], for example: S=[2,3,3,2,1] would indicate that an A will shift 2 posns, B will shift 3, C will shift 3, etc..

Answer: S=[2,4,1,3,0] ✗ **(S=[1,2,3,4,5], [1,2,3,4,5], 1,2,3,4,5)**

Q3- HashClosed

Question 3 **1 / 1 point**

You need to store some numbers in a hash table. Collisions are handled by the closed hashing method (no chaining). The table has 4 buckets, and the hash function is KmodN, where N is the number of buckets.

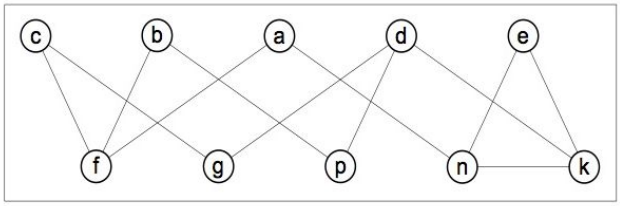
The commands to store the items are show below, and are executed in the order given.

Which bucket (index) will the number 14 be stored in?

```
hashtable.add(12)
hashtable.add(14)
hashtable.add(16)
hashtable.add(20)
```

- 0
- 1
- ✓ 2

Question 4 **1 / 1 point**



Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by breadth-first-search (*bfs*).

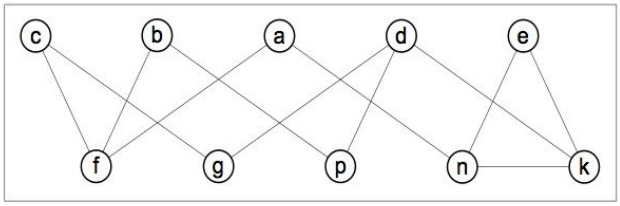
List the order of vertices based on BFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afnbcekpgd ✔

Q5- DFS

Question 5 **1 / 1 point**



Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by depth-first-search (*dfs*).

List the order of vertices based on DFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afbpdgcken ✔

Q1- Counting Sort

Question 1 **0 / 1 point**

The Distribution Counting Sort is a general purpose sorting algorithm.

✖ ● True

➡ ○ False

Q2- ShiftTable

Question 2 **1 / 1 point**

Consider Horspool's algorithm as explained in your text. Assume the alphabet {A,B,C,D,E}. Construct the shift table for the pattern P="CABAE".

Show your answer as a shift vector S[], for example: S=[2,3,3,2,1] would indicate that an A will shift 2 posns, B will shift 3, C will shift 3, etc..

Answer: S=[1,2,4,5,5] ✔

Q3- HashClosed

Question 3 **1 / 1 poin**

You need to store some numbers in a hash table. Collisions are handled by the closed hashing method (no chaining). The table has 4 buckets, and the hash function is KmodN, where N is the number of buckets.

The commands to store the items are show below, and are executed in the order given.

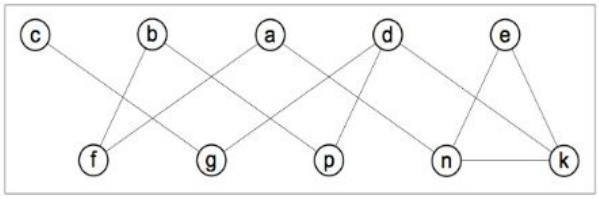
Which bucket (index) will the number 14 be stored in?

hashtable.add(12)
hashtable.add(14)
hashtable.add(16)
hashtable.add(20)

- 0
- 1
- ✓ 2
- 3

Q4- BFS

Question 4 **1 / 1 point**



Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by breadth-first-search (*bfs*).

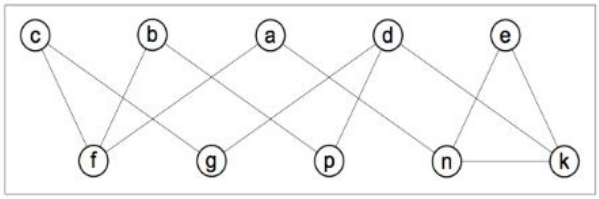
List the order of vertices based on BFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afnbekpdgc ✓

Q5- DFS

Question 5 **1 / 1 point**



Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by depth-first-search (*dfs*).

List the order of vertices based on DFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afbpdgcken ✓

The Distribution Counting Sort is a general purpose sorting algorithm.

- ✗ ● True
- ➡ ○ False

Distribution Counting Sort could be used to sort the birthdays of all the garde 1 students in North America.

- ➡ ○ True
- ✗ ● False

Consider Horspool's algorithm as explained in your text. Assume the alphabet {A,B,C,D,E}. Construct the shift table for the pattern P="DCBAE".

Show your answer as a shift vector S[], for example: S=[2,3,3,2,1] would indicate that an A will shift 2 posns, B will shift 3, C will shift 3, etc..

Answer: S[3,6,4,2,0] ✗ **(S=[1,2,3,4,5], [1,2,3,4,5], 1,2,3,4,5)**

Consider Horspool's algorithm as explained in your text. Assume the alphabet {A,B,C,D,E}. Construct the shift table for the pattern P="BAECD".

Show your answer as a shift vector S[], for example: S=[2,3,3,2,1] would indicate that an A will shift 2 posns, B will shift 3, C will shift 3, etc..

Answer: S=[0,1,0,0,2] ✗ **(S=[3,4,1,5,2], [3,4,1,5,2], 3,4,1,5,2)**

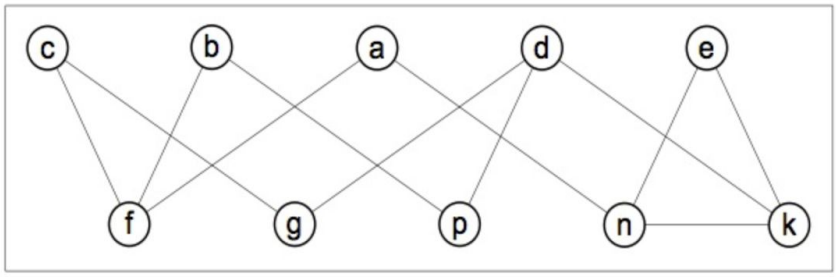
You need to store some numbers in a hash table. Collisions are handled by the closed hashing method (no chaining). The table has 4 buckets, and the hash function is KmodN, where N is the number of buckets.

The commands to store the items are show below, and are executed in the order given.

Which bucket will the number 16 be stored in?

hashtable.add(12)
hashtable.add(14)
hashtable.add(16)

- ✗ ● 0
- ➡ ○ 1
- ○ 2
- ○ 3

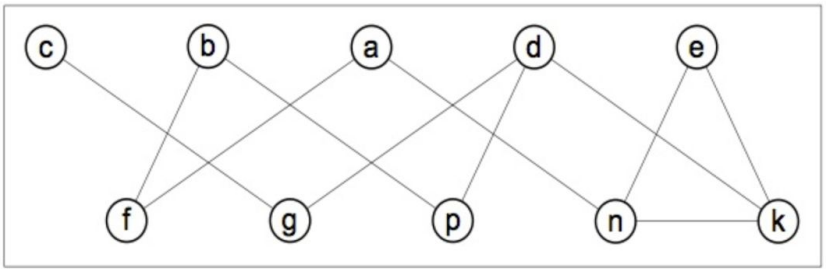


Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by breadth-first-search (*bfs*).

List the order of vertices based on BFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: fnbcepgkd ✖ **(afnbcekpgd)**



Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by depth-first-search (*dfs*).

List the order of vertices based on DFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: fbpdgcnek ✖ **(afbpdgcken)**

Q1- Counting Sort

Question 1 **1 / 1 point**

Distribution Counting Sort only works for input draw from a finite range of values.

✔ ● True

○ False

Q2- ShiftTable

Question 2 **1 / 1 point**

Consider Horspool's algorithm as explained in your text. Assume the alphabet {A,B,C,D,E}. Construct the shift table for the pattern P="DCBAE".

Show your answer as a shift vector S[], for example: S=[2,3,3,2,1] would indicate that an A will shift 2 posns, B will shift 3, C will shift 3, etc..

Answer: S=[1,2,3,4,5] ✔

Question 3 **1 / 1 point**

You need to store some numbers in a hash table. Collisions are handled by the closed hashing method (no chaining). The table has 4 buckets, and the hash function is KmodN, where N is the number of buckets.

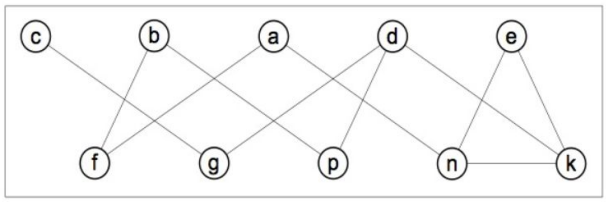
The commands to store the items are show below, and are executed in the order given.

Which bucket will the number 16 be stored in?

hashtable.add(12)
hashtable.add(14)
hashtable.add(16)

- 0
- ✔ 1
- 2
- 3

Question 4 **1 / 1 point**



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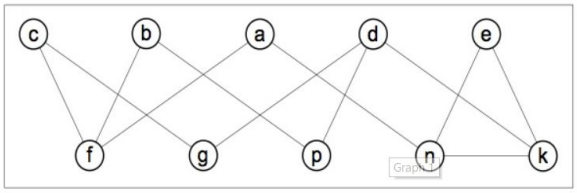
List the order of vertices based on BFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afnbekpdgc ✔

Q5- DFS

Question 5 **0 / 1 point**



Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by depth-first-search (*dfs*).

List the order of vertices based on DFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afbpdgcgdkenekdpbfa ✖ **(afbpdgcken)**

Question 1 **1 / 1 point**

The Distribution Counting Sort is a general purpose sorting algorithm.

- True
- ✓ False

Question 2 **0 / 1 point**

You need to store some numbers in a hash table. Collisions are handled by the closed hashing method (no chaining). The table has 4 buckets, and the hash function is KmodN, where N is the number of buckets.

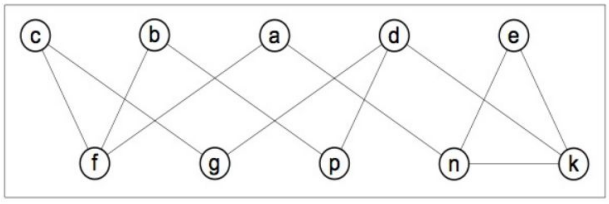
The commands to store the items are show below, and are executed in the order given.

Which bucket (index) will the number 8 be stored in?

hashtable.add(2)
hashtable.add(4)
hashtable.add(6)
hashtable.add(8)

- 0
- ➡ 1
- 2
- ✖ 3

Question 3 **1 / 1 point**



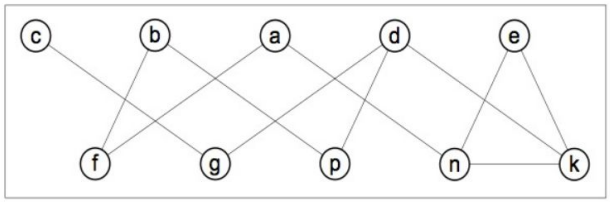
Consider the above graph. Starting at vertex a and resolving ties by the vertex alphabetical order, traverse the graph by breadth-first-search (*bfs*).

List the order of vertices based on BFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afnbcekpgd ✓

Question 4 **1 / 1 point**



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List the order of vertices based on DFS traverse.

Give your answer as a single lowercase string of vertex labels, with not spaces. For example: abcdefgpn

Answer: afbpdgcken ✔

Question 5 **1 / 1 point**

Assume you are using Horspools algorithm to search for Pattern "ABC" in Text T="ABRACADABRA".

The very first comparison made the comparison of an "A" with an "A".

- True
- ✔ False