

## Data structure-3

SL NO	QUESTIONS
1	What is a hash table?
	A hash table is a common data structure used to store objects that have a key value relationship (call hash function) which helps to search elements.
2	What is the key used for in a hash table?
	A key is translated into a number that is used as the array index of the array element that references the value that is associated with the key.
3	What is hashing?
	Hashing is the process of translating the key into the array index of the array element that references the value that is associated with the key.
4	What is the result of hashing?
	Hashing produces a hash value, which is used only for storing and retrieving element in array
5	What is the significance of a hash value?
	There is no real significance of a hash value other than it is a number used as an array index.
6	What major problem occurs with hashing?
	Hashing is not perfect. Occasionally, a collision occurs when two different keys hash into the same hash value and therefore are assigned to the same array element.
7	How do you overcome the major problem that occurs with hashing?
	A common way to deal with a collision is to create a linked list of entries that have the same hash value.
8	With a hash table, suppose your data set gets unexpectedly large and you have an excessive number of collisions. How could you deal with this?
	You could make the hash table array larger, then rehash all the keys and insert them accordingly into the new hash table.
9	How do you insert a node into a hash table?
	Call the hashing algorithm with the key. Go to the array and see if the value in the array index is NULL. If it is, then change this value to the address of the new node. If the array index is not NULL, then set the next pointer in the new node to the value at the array index and set the array index to the address of the new node. This makes the new node the first entry in the linked list.
10	How do you delete a node from a hash table?
	Call the hashing algorithm with the key. Go to that index in the array. Traverse the linked list and find the value, and then delete this entry from the linked list. The entry is deleted by setting the next pointer in the previous node to the next pointer of the node being deleted.