Assignment

Cha-1 Basic concepts of data structure

1. Differentiate data and information.
2. Explain row major and column major array.
3. Differentiate linear and non linear data structure.
4. Differentiate primitive data structure vs non primitive data structure.
5. Explain linear search and binary search with example
   or Explain two search method give example of each.
6. Give definition of an algorithm.
7. Explain key feature of an algorithm.
8. Write an algorithm for sequential search (linear search).
9. Define array. Explain 1D array with example.
10. Write an algorithm to insert an element into array.
11. Define on linear data structure. list out its four types. Explain one in brief.
12. Define time complexity and space complexity.
13. Define worst case time complexity.

Submit date
10/7/2018

Assignment

Cha-2 String

1. Mention the Operation performed on String and explains it.
2. Define String write an algorithm for following string operations.
   1) To copy given string into another string.
   2) To compare given two string.
3. Write a program in c to copy one string into another string without use to library functions.
4. Write a algorithms
   1) To find length of a given string
   2) To convert lowercase character of a given string into uppercase characters.
5. write a c program to reverse the given string(without using strrev() function)

Submit date
31/7/2018

Assignment

Cha-3 stack queue

1. Write short note on stack
2. Mention operations perform on stack and explain it with example.
3. Explain the conversion from prefix to postfix expression with example.
4. Write and explain push and pop operation algorithm of a stack.
5. List three application of stack .Explain it.
6. Write c program to fine the factorial of given number.
7. Explain queue in brief.
8. Mention operations perform on queue and explain it with example and mention limitation of queue.
9. Write and explain insert and delete an element in a queue.
10. Justify :" circular queue is better than the linear queue"
11. Differentiate between stack and queue.

Submit date
24/8/2018

Assignment

Cha-4 Linked List

1. Define pointer and write down its advantages.
2. Mention the operation performs on singly link list and explain it.
3. Write an algorithm to insert a node from the singly linked list.
4. Write an algorithm to count total number of nodes in singly linked list.
5. Write an algorithm to delete a node from the singly linked list.
6. Mention the operation performs on doubly linked list and explain it.
7. Write an algorithm to count total number of nodes in doubly linked list
8. Explain circular linked list
9. Explain differences between singly linked and doubly linked list
10. List three disadvantage of link list.
11. Explain three application of linked list in brief

Submit date
14/09/2018

Cha-5 Sorting and Hashing

1. Mention the method of sorting and explain merge and radix sort with example.
2. Apply insertion sort to following data to arrange them in ascending order
   25, 15, 35, 20, 30, 5, 10
3. Apply quick sort to following data to arrange them in ascending order
   25, 15, 35, 20, 30, 5, 10
4. Write an algorithm for selection sort method with example.
5. Write an algorithm for quick sort method with example.
6. Write an algorithm for insertion sort method with example.
7. Write an algorithm for merge sort method with example.
8. Give a trace of quick sort for following data 10, 24, 47, 90, 67, 5,55,87,36,17
9. List four types of hash table. Explain any one in brief.
10. State two advantage of radix sort and insertion sort.
11. What is collision in hashing.
12. Mention the type of hashing function.
13. What is hashing? When collision occur in hashing.
14. Explain linear probing method with example.
15. Explain division and middle square hashing method.
16. Arrange the Following data in ascending order using radix sort
    36, 9, 0, 25, 1, 49, 64, 16, 81, 4

Submit date
25/9/2018

Assignment

Cha-6 Trees

1. Define forest and complete binary tree.
2. Define in degree and out degree in tree.
3. Define directed edge and isolated node in tree.
4. Define sibling, root node, leaf node, depth and path of tree by giving example.
5. What is binary tree? Explain searching a node in binary tree.
6. Mention the trees traversal method and explain it.(inorder , preorder , postorder)
7. Construct a binary search tree for following data items

100, 150, 120, 50, 75, 25,200(consider 100 as a root node provide inorder and preorder traversal for this tree)

8. Define binary tree, complete binary tree and strict binary tree with example.
9. Creat BST for the following data

8, 3, 10, 1, 6, 4, 7, 14, 13

Give preorder, inorder,post order tree traversal for that tree.

10. Construct a binary search tree for following data items

   25, 15, 35, 30, 20, 40, 10(consider 25 as a root node detele 10 and 35 from this tree and reconstruct the tree)

11. Write an algorithm for preorder tree traversal method.
12. Define tree list four applications of trees.
13. Explain conversion of general tree into binary tree using an example.
15. Draw binary search tree for 10, 20, 4, 5, 70, 40, 30, 60 consider 10 is a root.
16. Write and explain an algorithm to perform in order traversal of binary search tree.
17. Write an algorithm to insert a node into a binary search tree.

   Submit date
   1/10/2018