

DATA-STRUCTURES: LISTS, STACK AND QUEUE

ASSIGNMENTS

Q.1 What is data structure?

Q.2 What is a stack? What is LIFO?

Q.3 Enlist some applications of stacks.

Q.4 What are queues?enlist some applications of queues.

Q.5 Given a string of brackets, determine if the string is balanced

Q.6 Implement a queue with two stacks

Q.7 Write a program to sort a stack in ascending order (with biggest items on top). Only use one additional stack.

Q.8 Write a function, `reverse_queue(q)`, which takes a Queue, `q`, as a parameter and modifies the queue so that the elements in the queue are rearranged into reverse order.

Q.9 Write a function, `mirror_queue(q)`, which takes a Queue, `q`, as a parameter and modifies the queue so that the queue items appear in their original order followed by a copy of the queue items in reverse order.

Q.10 Write a Python program to create a queue and display all the members and size of the queue.

Q.11 Write a Python program to find whether a queue is empty or not.

Q.12 Write a Python program to create a FIFO queue.

Q.13 Write a Python program to create a LIFO queue.

Q.14 Which data structures are applied when dealing with a recursive function?

Q.15 What is the difference between a PUSH and a POP?

Q.16 Differentiate STACK from ARRAY.

Q.17 Differentiate linear from a nonlinear data structure.