Home Work

CS221: Data Structures and Algorithms

Usman Institute of Technology

Fall 2018

Stack and Queue

1. Consider a Stack of size 5 and perform following operations.
    a. Push(4)
    b. Push(3)
    c. Pop()
    d. Push(8)
    e. Pop()

2. Consider a Queue of size 5 and perform following operations.
    a. Enqueue(4)
    b. Enqueue(3)
    c. Deqeueue()
    d. Enqueue(8)
    e. Dequeue()

3. Perform following questions from text book:
    a. 10.1-2
    b. 10.1-5
    c. 10.1-6
    d. 10.1-7

4. Implement Stack/Queue for general data types using Generic.

5. Write a program to convert infix expression into post-fix expression using Stack

6. Write a program to solve an post-fix expression using Stack

7. Provide code for a Queue in which each time when you perform Dequeue(), it removes the element with highest value instead of on the basis of FIFO. However, if there are two elements with same value then it must return using FIFIO for those elements.
   1
   For example, consider a Queue
    - Pus(5)
    - Push(7)
    - Push(3)
    - Push(5)
    - Pop() = will return 7
    - Pop() = will return 5 – which inserted the first