

UCS301 Data Structures Lab
Assignment 4 (Week 5)

- 1) Develop a menu driven program demonstrating the following operations on simple Queues: enqueue(), dequeue(), isEmpty(), isFull(), display(), and peek().
- 2) Develop a menu driven program demonstrating the following operations on Circular Queues: enqueue(), dequeue(), isEmpty(), isFull(), display(), and peek().
- 3) Write a program interleave the first half of the queue with second half.
Sample I/P: 4 7 11 20 5 9 Sample O/P: 4 20 7 5 11 9
- 4) Write a program to find first non-repeating character in a string using Queue.
Sample I/P: a a b c Sample O/P: a -1 b b
- 5) Write a program to implement a stack using (a) Two queues and (b) One Queue.

Additional Questions:

- 1) <https://www.geeksforgeeks.org/interesting-method-generate-binary-numbers-1-n/>
- 2) <https://www.geeksforgeeks.org/sorting-queue-without-extra-space/>
- 3) <https://www.geeksforgeeks.org/program-page-replacement-algorithms-set-2-fifo/>
- 4) <https://www.geeksforgeeks.org/lru-cache-implementation/>