

S.Y. B. Tech. Academic Year 2025-26 Semester: III
CSE20020/AID20020 /CSF20030 : Data Structures Laboratory

WRITE UP

Experiment Number: 04

TITLE: Queue Operations

PROBLEM STATEMENT:

Queues are frequently used in computer programming, and a typical example is the creation of a job queue by an operating system. If the operating system does not use priorities, then the jobs are processed in the order they enter the system. Write a program for simulating job queue. Write functions to add job and delete job from queue.

OBJECTIVE:

1. To study Queue and its operations
2. To study the importance of queue as a data structure in computer science

IMPLEMENTATION:

- **PLATFORM:**

- 64-bit Open source Linux or its derivatives.
- Open Source C Programming tool like gcc/Eclipse Editor.

- **TEST CONDITIONS:-**

1. DeleteQ(), AddQ(), AddQ(),delete(),delete(),delete()

- **PSEUDO CODE:** *//To be Written by Students*

Write pseudo code for ADDQ,deleteQ,isEmpty and isFull for queue operation. Write pseudo code for Linear as well as Circular queue.

- **TIME COMPLEXITY:** *//To be Written by Students*

Write time complexity of above operations

- **CONCLUSION:**

Thus, implemented queue Operations assignment using Array concepts.

- **FAQs** *//To be Written by Students*

- What are the advantages and disadvantages of a linear queue ?
- What are the advantages and disadvantages of a circular queue ?
- Give various applications to the queue .

- **PRACTICE ASSIGNMENTS**

1. Write a program to implement Josephus' problem. In the Josephus problem from antiquity, n people are in dire straits and agree to the following strategy to reduce the population. They arrange themselves in a circle (at positions numbered from 0 to $n-1$) and proceed around the circle, eliminating every n th person until only one person is left. Legend has it that Josephus figured out where to sit to avoid being eliminated.
2. Write a program to implement priority queue operations. Priority queue is a collection of a finite number of prioritized items. Priority queues are the queues in which we can insert items or delete items from any position based on some fundamental ordering of the elements.