

BÀI TẬP THỰC HÀNH CẤU TRÚC DỮ LIỆU VÀ GIẢI THUẬT

LAB MANUAL

Academic Year : 2022 - 2023

Semester : III Semester

Prepared by

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S. No.	Experiment
1	SEARCHING TECHNIQUES
2	SORTING TECHNIQUES
3	SORTING TECHNIQUES
4	IMPLEMENTATION OF STACK AND QUEUE
5	APPLICATIONS OF STACK
6	IMPLEMENTATION OF SINGLE LINKED LIST
7	IMPLEMENTATION OF DOUBLE LINKED LIST
8	IMPLEMENTATION OF STACK USING LINKED LIST
9	IMPLEMENTATION OF QUEUE USING LINKED LIST
10	IMPLEMENTATION OF BINARY SEARCH TREE

WEEK-9

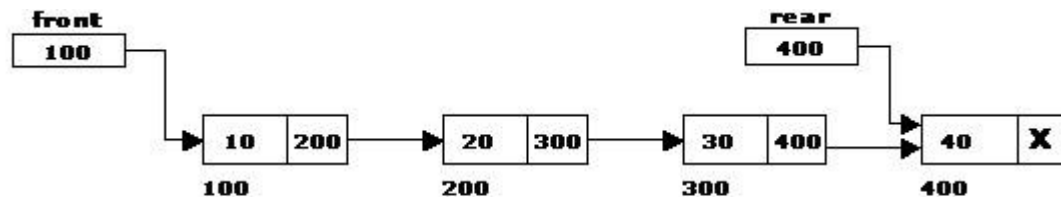
IMPLEMENTATION OF QUEUE USING LINKED LIST

9.1 OBJECTIVE:

- a. Write a C program to implement queue using linked list

9.2 PROGRAM LOGIC:

1. QUEUE: Queue is a linear data structure which works under the principle of first in first out. Basic operations: Insertion, deletion, display.
2. Insertion: if newnode == NULL, display Queue is full. Else reading data and inserting at queue rear.
3. Deletion: if (front == NULL), display Queue is empty .Else printing element at queue front
4. Display: if (front == NULL) ,display No elements in the queue .Else printing the elements from front to rear.



9.3 IMPLEMENTATION:

INPUT/OUTPUT:

```
*****Queue*****
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:1
Enter data:10
Node enqueued to queue 10
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:1
Enter data:20
Node enqueued to queue 20
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:1
Enter data:30
Node enqueued to queue 30
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:3
10
20
30
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:4
Number of nodes 3
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:2
Dequeued from queue 10
```

```
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:2
Dequeued from queue 20
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:2
Dequeued from queue 30
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:2
No Nodes exist
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:4
Number of nodes 0
1.Enqueue
2.Dequeue
3.Traverse
4.Number of nodes
5.Exit
Enter choice:5
Quit
```

9.4 LAB ASSIGNMENT:

1. Write a program to implement Queue operations using linked list.

9.5 POST-LAB VIVA QUESTIONS:

1. What is DEQUE?