

Circular Queue code

```

4/11/25 Q3 Circular Queue
# define N 5
int queue[N];
int front = -1;
int rear = -1;

void enqueue(int x)
{
    if (rear == 0 && front == 0)
    {
        rear = front = -1;
    }
    if (rear == front == -1)
    {
        rear = front = 0;
        queue[rear] = x;
    }
    else if ((rear + 1) % N == front)
    {
        printf("Queue is full");
    }
    else
    {
        rear++;
        rear = (rear + 1) % N;
        queue[rear] = x;
    }
}

void dequeue()
{
    if (rear == front == -1)
    {
    }
}

```

```

        printf("Queue is empty");
    }
    else if ((front == front + 1) % N && (rear == rear))
    {
        front++;
        front = front % N;
    }
    else
    {
        printf("Deleted element: %d", queue[front]);
        front++;
        front = (front + 1) % N;
    }
}

void peek()
{
    if (front == rear == -1)
    {
        printf("Queue is empty");
    }
    else
    {
        printf("%d", queue[front]);
    }
}

void display()
{
    if (front == rear == -1)
    {
        printf("Queue is empty");
    }
    else
    {
    }
}

```

```

    else
    {
        printf("%d", i = (i + 1) % N);
        for (int i = 0; i < queue[N]; i++)
        {
            printf("%d ", queue[i]);
            if (i == rear)
            {
                break;
            }
        }
    }
}
}

```

Output

```
choices are : a-enqueue, b-dequeue, c-peek, d-display, e-exit.  
enter a choice : a  
enter number to be added : 12  
number added. index: 0  
enter a choice : a  
enter number to be added : 56  
number added. index: 1  
enter a choice : a  
enter number to be added : 78  
number added. index: 2  
enter a choice : a  
enter number to be added : 11  
number added. index: 3  
enter a choice : a  
enter number to be added : 9  
number added. index: 4  
enter a choice : a  
enter number to be added : 2  
Queue is full.
```

```
enter a choice : b  
deleted element: 12  
enter a choice : c  
Front element: 56  
enter a choice : d  
56 78 11 9  
enter a choice : b  
deleted element: 56  
enter a choice : b  
deleted element: 78  
enter a choice : b  
deleted element: 11  
enter a choice : b  
deleted element: 9  
enter a choice : b  
Queue is empty.  
enter a choice : e  
exiting...
```