11/01/24 WEEK-3 LAB-2

2) Circular queue

```
#include <stdio.h>
int q[50], front = -1, rear = -1, size;

void display();
void enqueue();
void dequeue();

void main()
{
    int ch;
    printf("Enter no. of elements:");
    scanf("%d", &size);

    while (ch != 4)
    {
        printf("1. insert 2. Delete 3. Display
                4. Exit \n");
        printf("Enter your choice");
        scanf("%d", &ch);
        switch(ch)
        {
            case 1: enqueue();
                    break;
            case 2: dequeue();
                    break;
            case 3: display();
                    break;
        }
    }
    printf("Exited");
}
```

```
void enqueue()
{
    int item;
    if((front == rear+1) || (front == 0 && rear == size-1))
        printf("Queue is full\n");
    else
    {
        if (front == -1)
            front = 0;
        printf("Enter element:");
        scanf("%d", &item);
        rear = (rear+1) % size;
        q[rear] = item;
    }
}
void dequeue()
{
    int ele;
    if (front == -1)
    printf("Queue is empty\n");
    else
    {
        ele = q[front];
        if (front == rear)
        {
            front = -1;
            rear = -1;
        }
        else
        front = (front+1) % size;
        printf("Deleted");
    }
}
```

```
void display()
{
    int i;
    if (front == -1)
        printf("Queue is empty");
    else
    {
        printf("Front = %d \t", front);
        printf("Rear = %d \n", rear);
        printf("Queue");
        for (i = front ; i != rear ; i = (i+1)%size)
            printf("%d", q[i]);
        printf("%d \n", q[i]);
    }
}
```

output :

Enter no. of elements : 4
1. Insert 2. Delete 3. Display 4. Exit.
Enter your choice : 1
Enter element : 1.
1. Insert 2. Delete 3. Display 4. Exit.
Enter your choice : 3
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1. Insert 2. Delete 3. Display 4. Exit.
Enter your choice : 4.