CIRCULAR QUEUE

```
#include <stdio.h>
# include <stdlib.h>
#define MAX 3

int front = -1;
int rear = -1;

int queue [MAX];
void Enq (int);
int Deq ();
void display ();

int main (int argc, char **argv)
{
    int option, item;
    while (option != 4)
    {
        printf ("\n Enter choice 1. Insert 2. Delete 3.Display 4. Exit");
        scanf (" %d , &option);
        switch (option)
        {
            case 1: printf ("Enter the Element");
                    scanf (" %d ", &item);
                    Enq (item);
                    break;

            case 2; item = Deq();
                    if (item == -999)
            printf ("Queue is empty");
        else
            printf ("\nRemoved element from the queue : %d", item);
        break;

case 3:  display ();
         break;

case 4 : exit (0);
default : exit (0);

 }

} return 0;


void Enq(int ele)
 {
     if (((front==0 && rear == MAX-1) || (front == rear +1))
            printf ("Queue is full\n");
     else
     {
          rear =(rear+1) % MAX;
          queue [rear] = ele ;
          if (front == -1)
             front = 0;
     }
 }

int  Deq ()
 {   int item;
     if ((front == -1) && (rear == -1))
           return (-999);

     else
    {
        item = queue [front];
        if (front == rear)
        {
           front = -1;
           rear = -1;
        }
        else
        { front =(front +1) % MAX;

        }
        return item;
} }
```

```
void display ()
{    int i ;
     if ((front = = -1) && (rear== -1))
                printf ("Queue is empty");

     else

     {    printf ("\nQueue contents:");
          for (i = front ; i<=rear ; i++)
               printf ("%d\t", queue[i] ;
          printf ("\n");

     }

}
```