

Circular Queue

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

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

int queue[MAX];
void Enqueue(int);
int Dequeue();
void display();
int main(int argc, char **argv)
{
    int option;
    int item;
    do {
        printf("Circular Queue\n");
        printf("\n1. Insert to Queue (Enqueue)");
        printf("\n2. delete from the Queue (Dequeue)");
        printf("\n3. Display the content");
        printf("\n4. Exit\n");
        printf("Enter the option:");
        scanf("%d", &option);
        switch(option)
        {
            case 1: printf("Enter the element\n");
                    scanf("%d", &item);
                    Enqueue(item);
                    break;
            case 2: item = Dequeue();
                    if (item == -999)
                        printf("Queue is empty");
```

else

printf("Removed element : %d from the queue", item);

break;

case 3: display();

break;

case 4: exit(0);

}

while (option != 4)

return 0;

}

void Enque(int ele)

{

if ((front == 0 && rear == MAX - 1) || (front == rear + 1))

{

printf("Queue is full\n");

return;

}

else

{

rear = (rear + 1) % MAX;

queue[rear] = ele;

if (front == -1)

{

front = 0;

}

}


```
int Dequeue()
```

```
{
```

```
    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)) || (front == rear))
```

```
    {
```

```
        printf("Queue is empty\n");
```

```
        return;
```

```
    }
```

else

{

for (i = front; i != rear; i = (i + 1) % MAX)

{

printf("%d", queue[i]);

}

printf("%d", queue[i]);

}

}