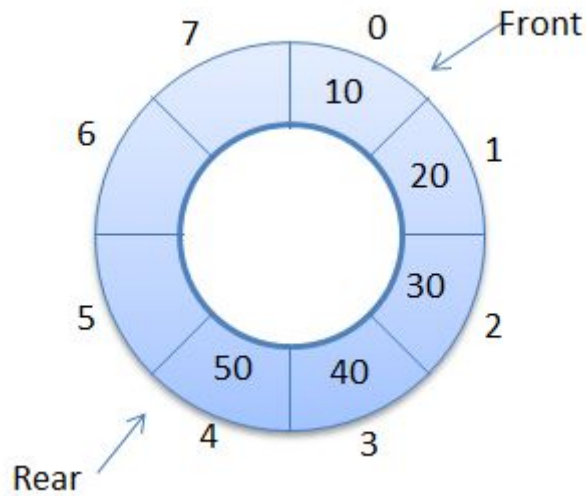


Fila Circular (Dinâmica)

FIFO (First In First Out)



```
#include <stdio.h>
#include <malloc.h>

typedef struct temp
{
    int data;
    struct temp *nextEl;
} circular_queue;

circular_queue *rear, *front, *new;

void enqueue(int n)
{
    if (n < 0)
        return;

    new = (circular_queue *)malloc(sizeof(circular_queue));
    new->data = n;

    if (front == NULL)
        front = rear = new;
    else
        new->nextEl = front;

    rear->nextEl = new;
    rear = new;
}

void dequeue()
{
    if (front == NULL)
        return;
```

```

    if (front == rear)
    {
        free(front);
        front = rear = NULL;
        return;
    }

    rear->nextEl = front->nextEl;
    free(front);
    front = rear->nextEl;
}

void showElements()
{
    if (front == NULL)
        return;

    printf("\n\n");
    new = front;
    do
    {
        printf(" %d-> ", new->data);
        new = new->nextEl;
    } while (new != front);
}

int main()
{
    front = NULL;
    int op, n;

    do
    {
        printf("\n 1- Inserir elemento \t 2- Remover elemento \t 3- Listar \t 4-
Limpar Console \t 5- Sair");
        printf("\n");
        scanf("%d", &op);

        switch (op)
        {
            case 1:
                printf("\n valor:");
                scanf("%d", &n);
                enqueue(n);

```

```

        break;

    case 2:
        dequeue();
        break;

    case 3:
        showElements();
        break;

    case 4:
        system("cls");
        break;

    case 5:
        exit(0);

    default:
        printf("\n Operacao invalida!");
    }
} while (op != 5);
}

```

Inserir elemento na fila vazia:

```

novo = (fila*)malloc(sizeof(fila))
novo->dado = n

```

```

if(inicio == Null)
    inicio = final = novo
final->prox = novo
final = novo

```

Inserir elemento em fila com elemento

```

else
    novo->prox = front
final->prox = novo
final = novo

```

Remover único elemento na fila:

```

if(inicio==final)
    free(inicio)
    inicio = final= Null

```

Remover elemento da fila:

```

final->prox = inicio->prox
free(inicio)
inicio = final->prox

```