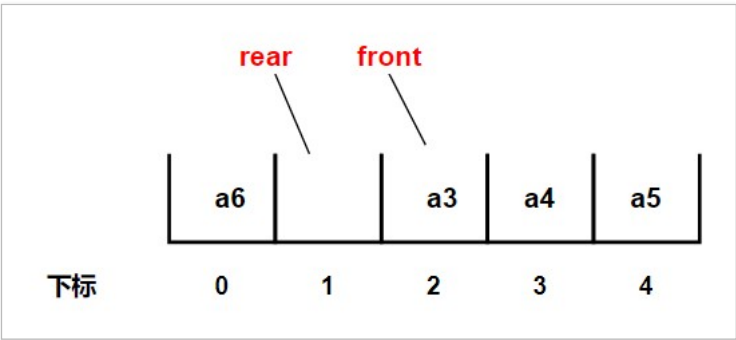# 4.2 循环队列代码编写_物联网 / 嵌入式工程师 - 慕课网

> 慕课网慕课教程 4.2 循环队列代码编写涵盖海量编程基础技术教程，以图文图表的形式，把晦涩难懂的编程专业用语，以通俗易懂的方式呈现给用户。


```c
typedef int data_t;

#define N 5

typedef struct
{
    data_t buf[N];

    int front;

    int rear;
}loopqueue_t;


loopqueue_t *create_empty_loopqueue()
{
    loopqueue_t *q = NULL;

    q = (loopqueue_t *)malloc(sizeof(loopqueue_t));

    memset(q,0,sizeof(loopqueue_t));
    q->front = q->rear = 0;

    return q;
}


int is_empty_loopqueue(loopqueue_t *q)
{
    return q->front == q->rear  ? 1 : 0;
}


int is_full_loopqueue(loopqueue_t *q)
{
    return q->front == (q->rear + 1) % N;
}


void enter_loopqueue(loopqueue_t *q,data_t data)
{
    q->buf[q->rear] = data;

    q->rear = (q->rear + 1) % N;
```

```
        return ;
    }


data_t delete_loopqueue(loopqueue_t *q)
{
    data_t data;

    data = q->buf[q->front];
    q->front = (q->front + 1) % N;

    return data;
}


int main()
{
    int i = 0;
    loopqueue_t *q = NULL;

    q = create_empty_loopqueue();

    while(!is_full_loopqueue(q))
    {
        enter_loopqueue(q,i++);
    }

    while(!is_empty_loopqueue(q))
    {
        printf("%d ",delete_loopqueue(q));
    }
    printf("\n");


    return 0;
}
```