## I. Exercise

**1.1 The main advantage of a circular queue over an ordinary sequential queue is:**

It overcomes the problem of "false overflow" that occurs in ordinary sequential queues. In a standard queue, even if there are empty spaces at the beginning of the array, you cannot reuse them once the rear pointer reaches the end. A circular queue efficiently reuses these empty spaces by wrapping around the array.

**1.2 Please complete the codes:**

(1): q->front = 0;

(2): q->rear = 0;

(3): q->front == q->rear;

(4): (q->rear + 1) % MAX\_SIZE == q->front;

(5): q->data[q->rear] = val;

(6): q->rear = (q->rear + 1) % MAX\_SIZE;

(7): q->data[q->front];

(8): q->front = (q->front + 1) % MAX\_SIZE;