Ilustrasi Queue

By

Entin Martiana, S.Kom.

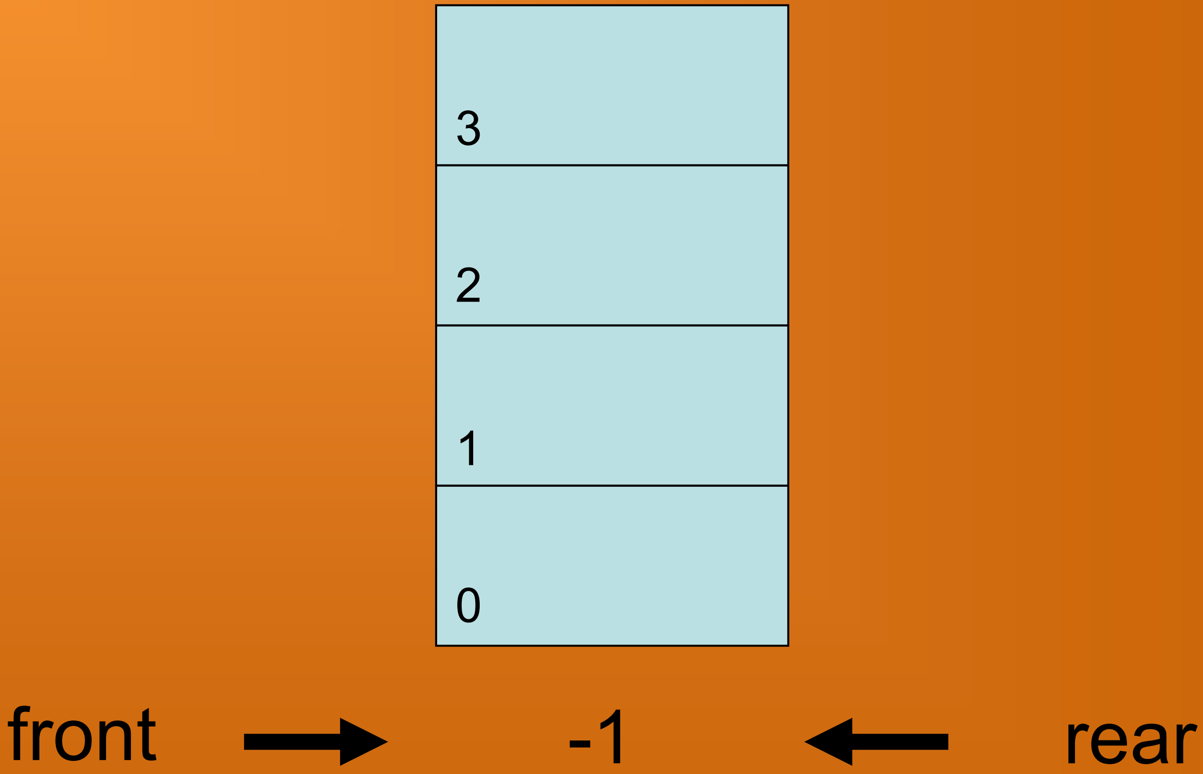
Deklarasi

```
struct Queue{
        int     Count;
        int     Front;
        int     Rear;
        int     Item[MAXQUEUE];
   };
```

Kondisi awal

MAX = 4

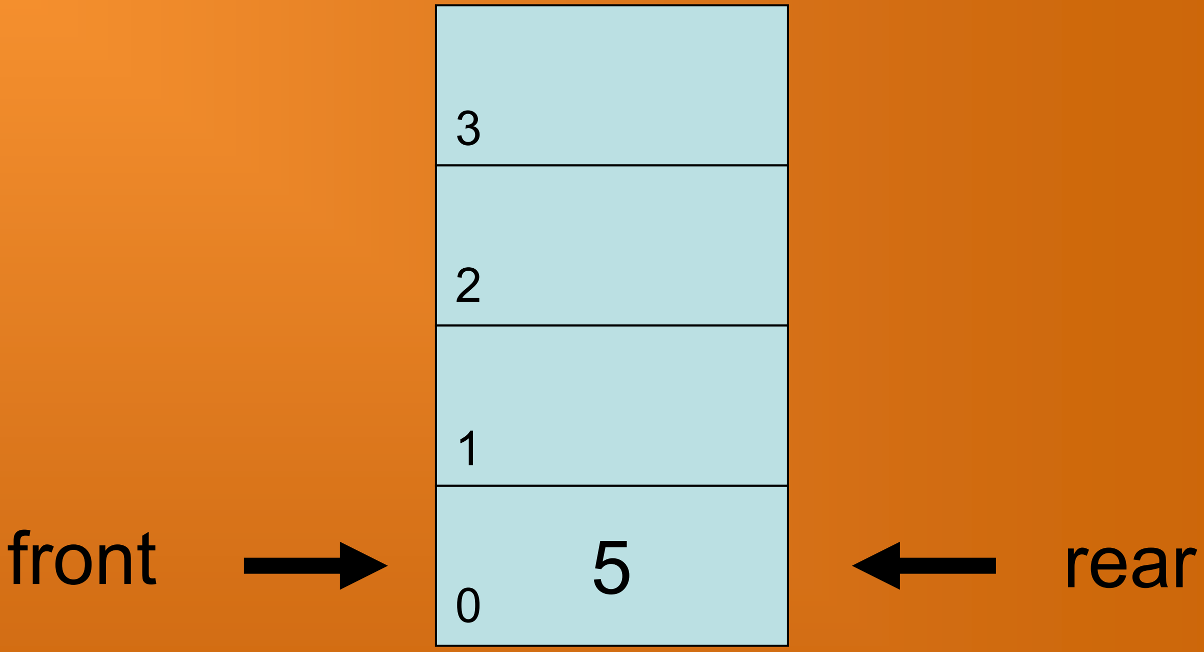
n = 0



Enqueue : 5

MAX = 4

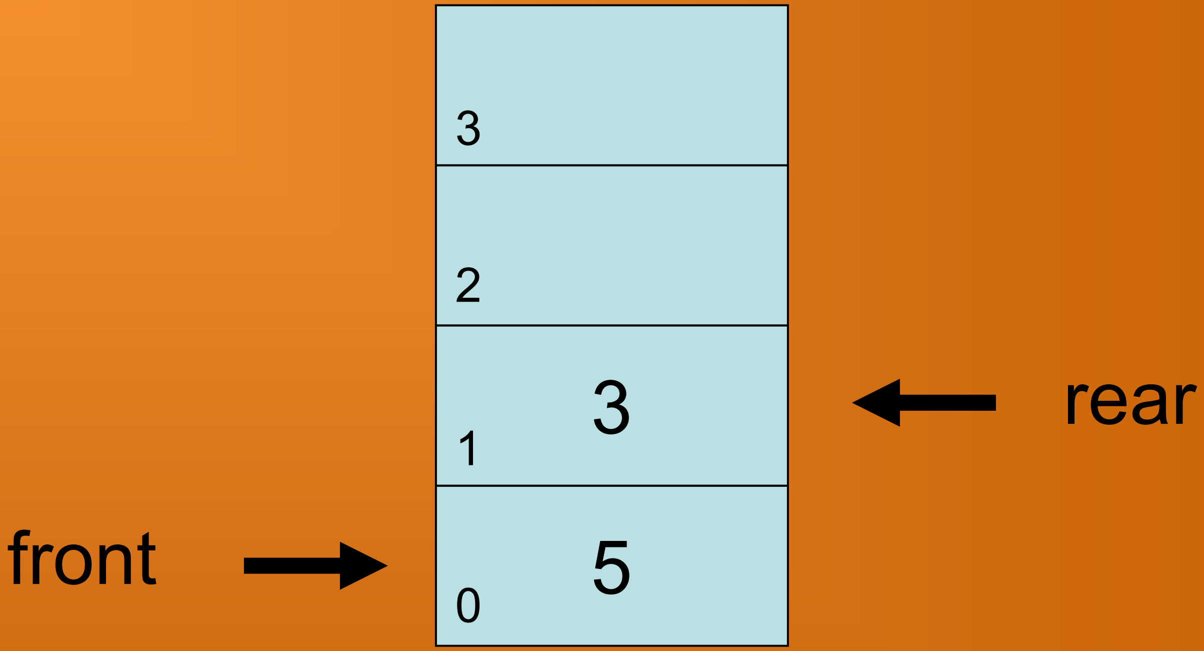
n = 1



Enqueue : 3

MAX = 4

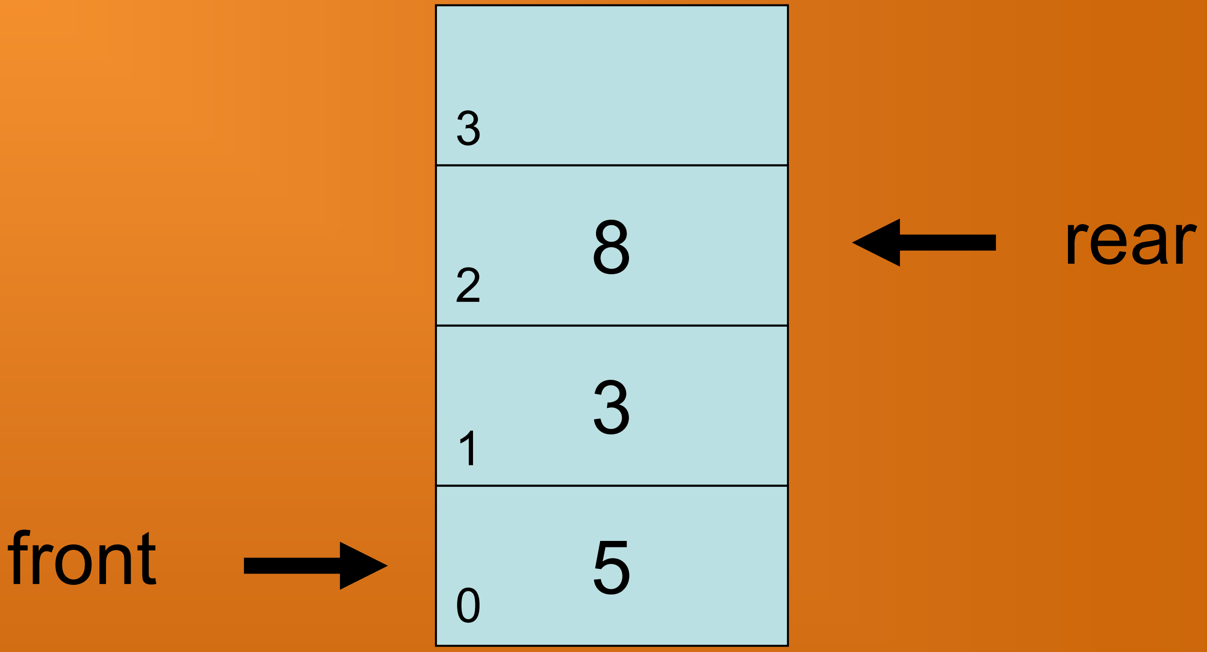
n = 2



Enqueue : 8

MAX = 4

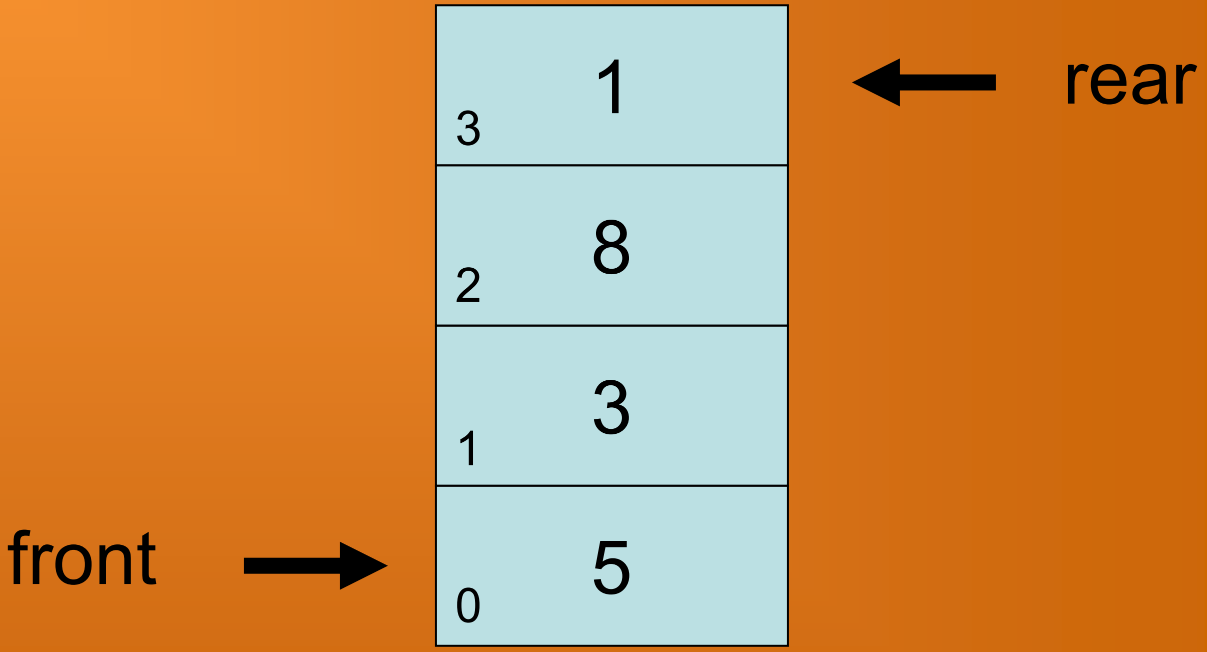
n = 3



Enqueue : 1

MAX = 4

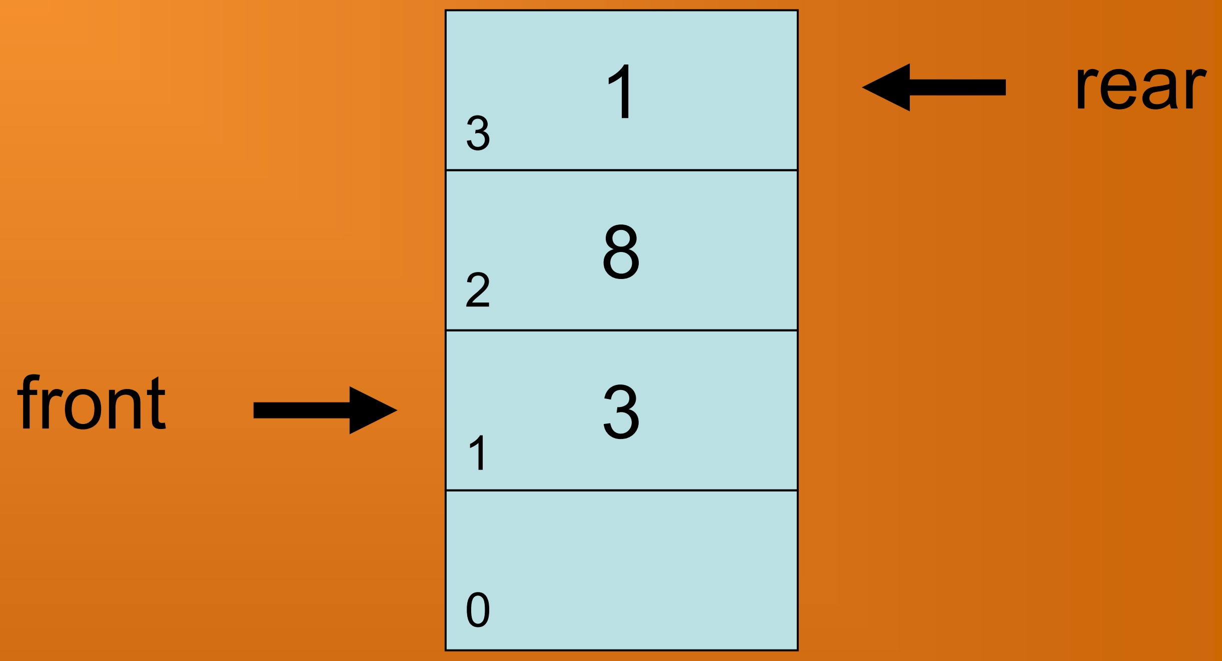
n = 4

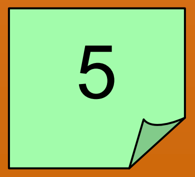


Dequeue

MAX = 4

n = 3

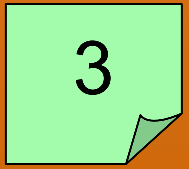


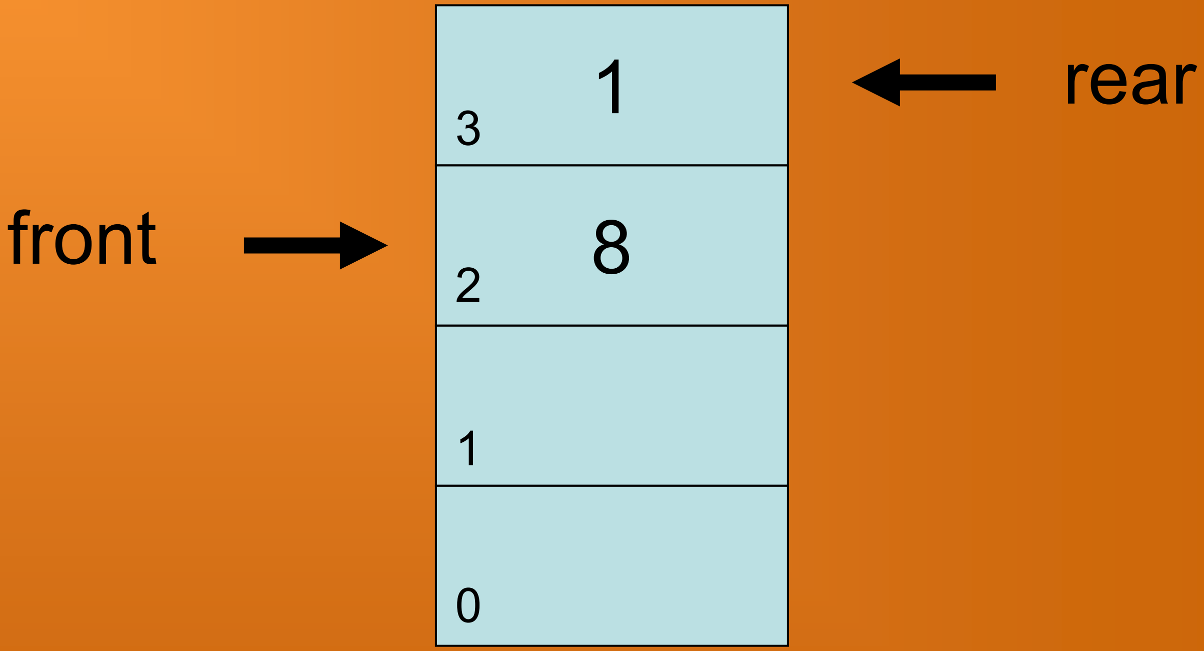


Dequeue

MAX = 4

n = 2

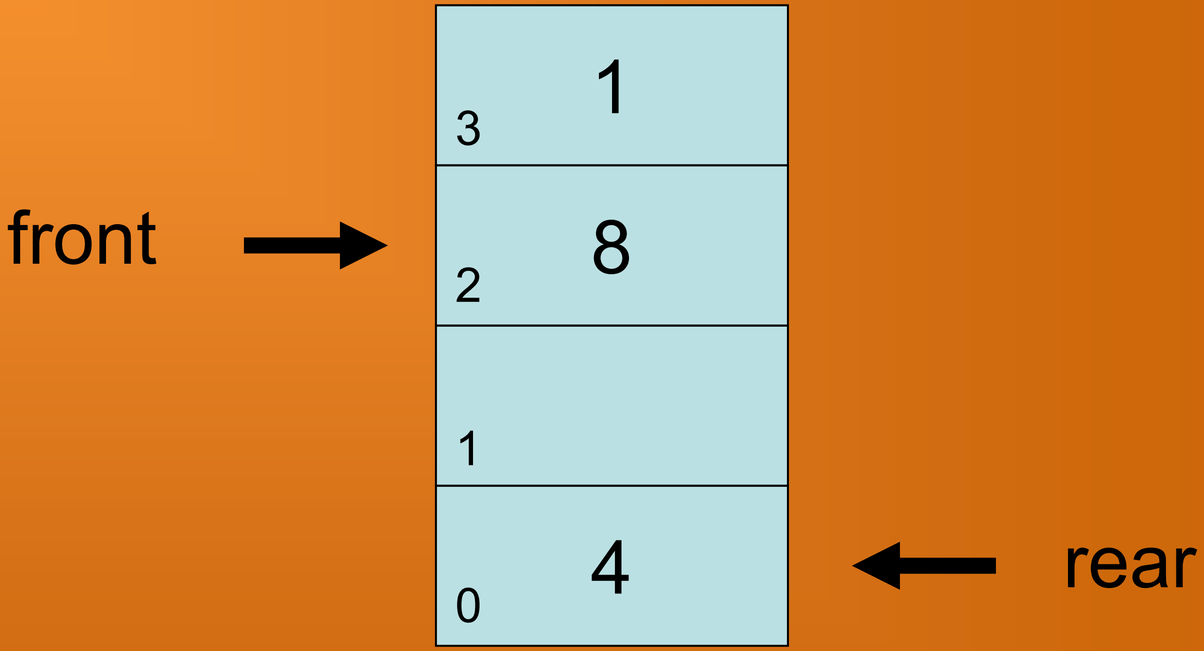




Enqueue : 4

MAX = 4

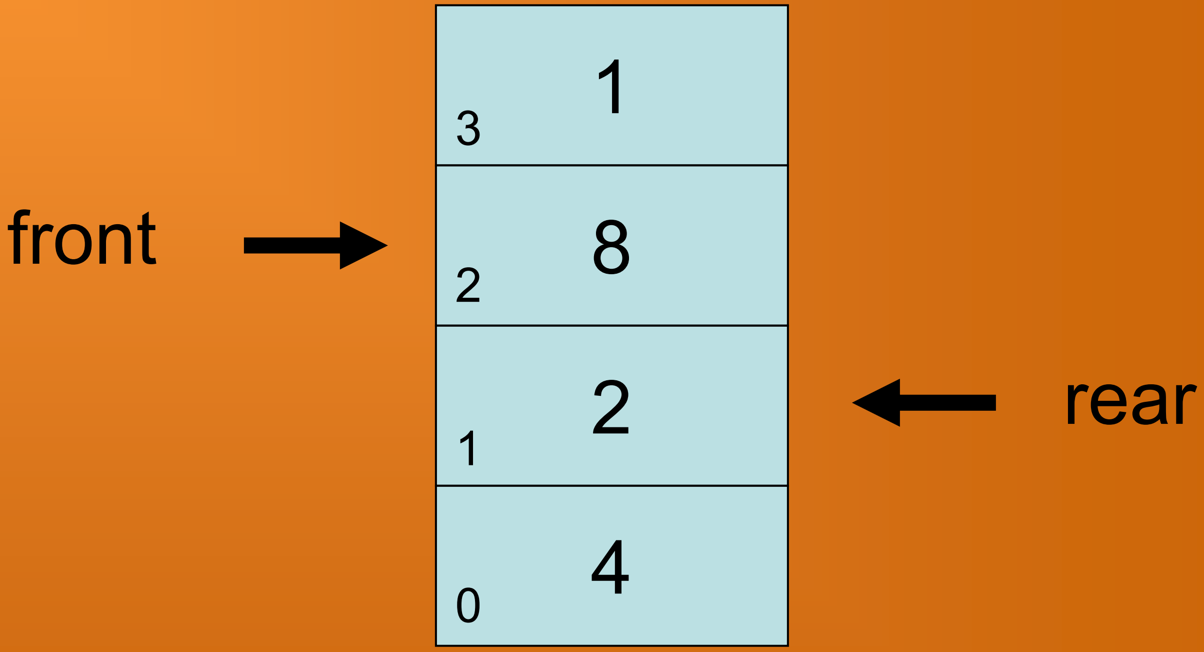
n = 3



Enqueue : 2

MAX = 4

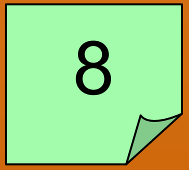
n = 4

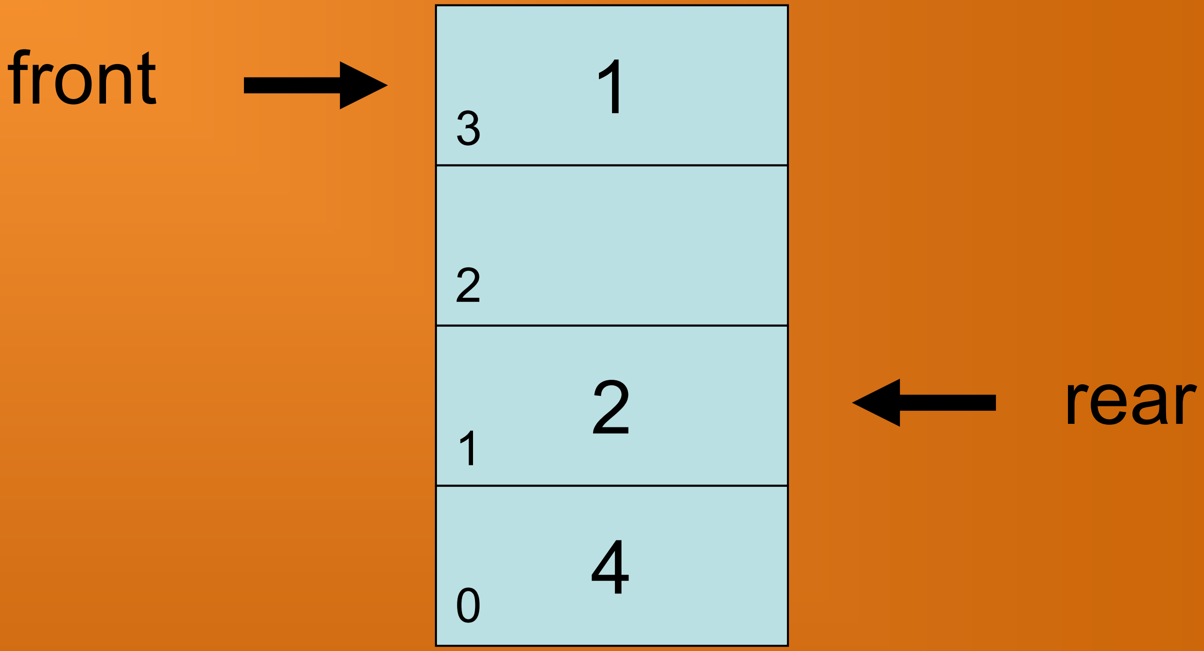


Dequeue

MAX = 4

n = 3

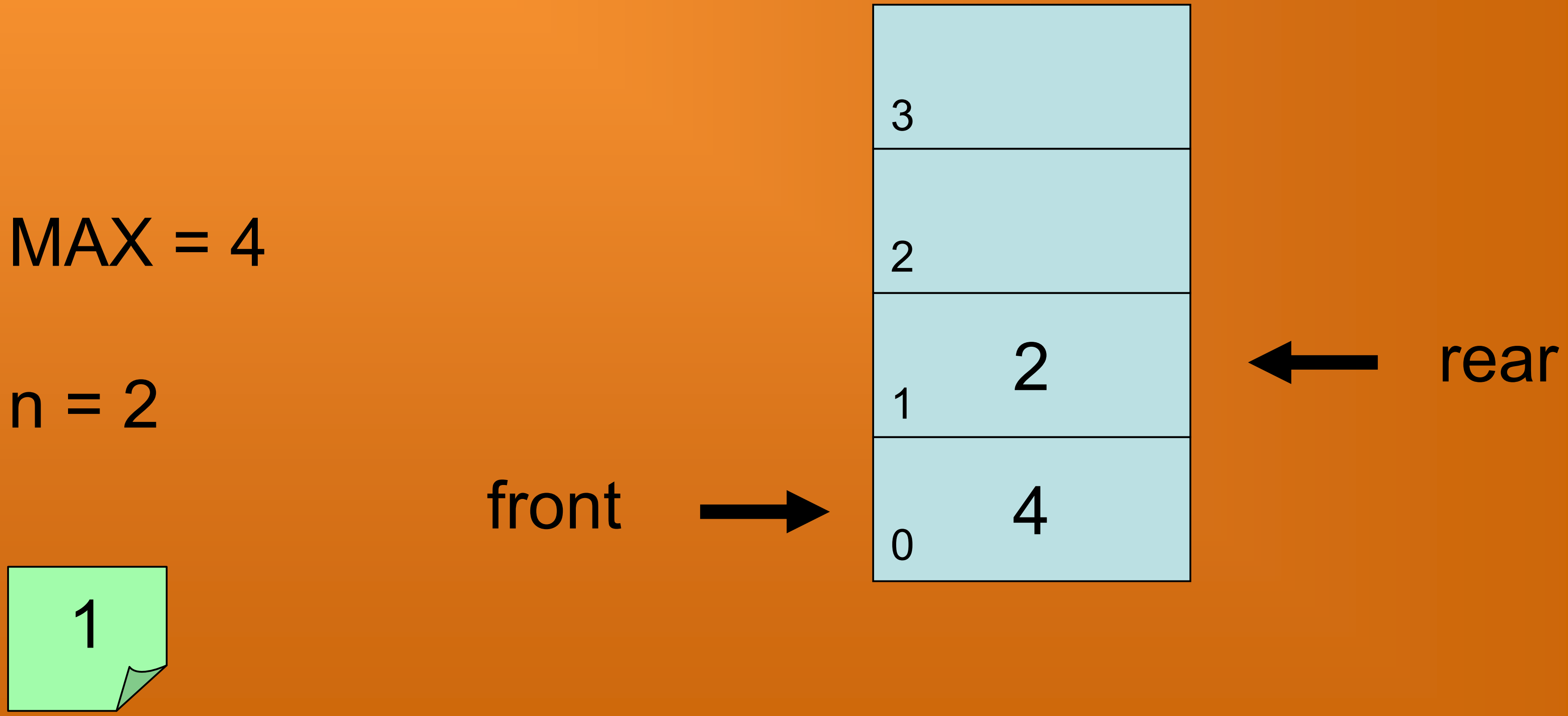




Dequeue

MAX = 4

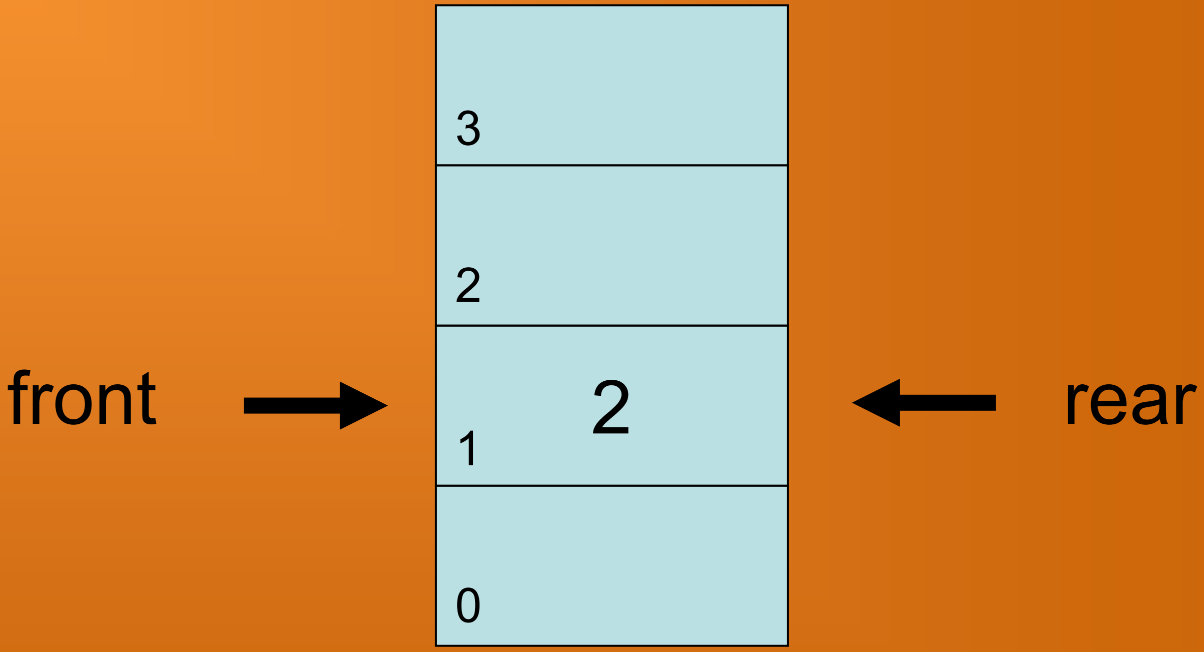
n = 2

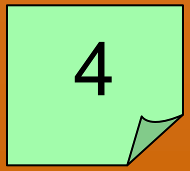


Dequeue

MAX = 4

n = 1

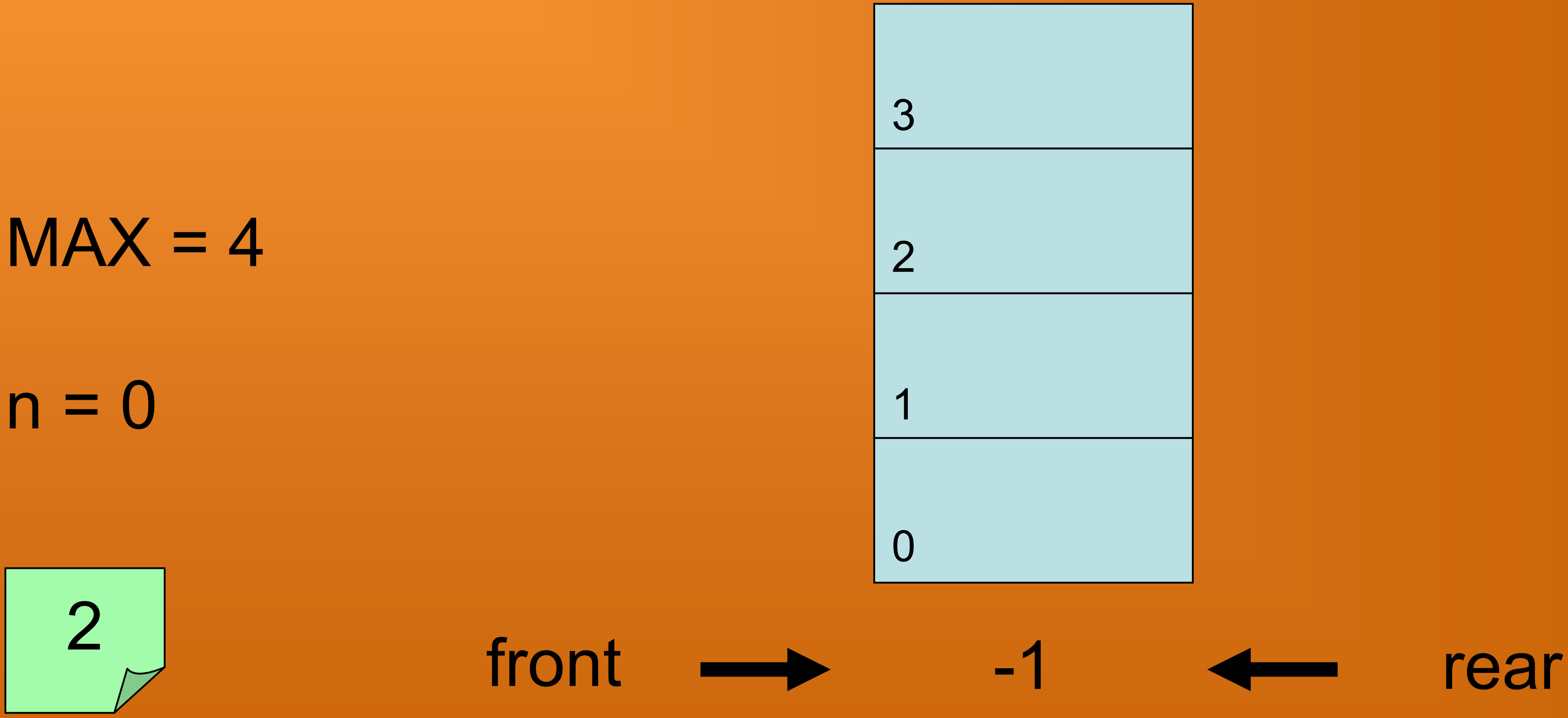




Dequeue

MAX = 4

n = 0



Inisialisasi

```
void Inisialisasi(struct Queue *q)
{
  q->Front = q->Rear = -1;
  q->Count = 0;
}
```

Full

```
int Full(struct Queue *q)
{
  return(q->Count == MAXQUEUE);
}
```

Empty

```
int Empty(struct Queue *q)
{
  return(q->Count == 0);
}
```

Coding : Enqueue

```
void Enqueue(int x, Queue *Q)
{
   if (Full)
        printf("Tidak dapat memasukkan data! Queue
   Penuh!");
   else {
        if ((Q->Front==-1) && (Q->Rear==-1))
                Q->Front=Q->Rear=0;
        else
        {
                Q->Rear = (Q->Rear + 1) % MAXQUEUE;
                Q->Item[Q->Rear] = x;
                ++(Q->Count);
        }
}
```

Coding : Dequeue

```
void Dequeue(Queue *Q, int *x)
{
  if (Empty)
     printf("Tidak dapat mengambil data! Queue
  Kosong!");
  else {
     *x = Q->Item[Q->Front];
     if ((Q->Front==Q->Rear)
          Q->Front=Q->Rear=-1;
     Q->Front = (Q->Front + 1) % MAXQUEUE;
     --(Q->Count);
  }
}
```

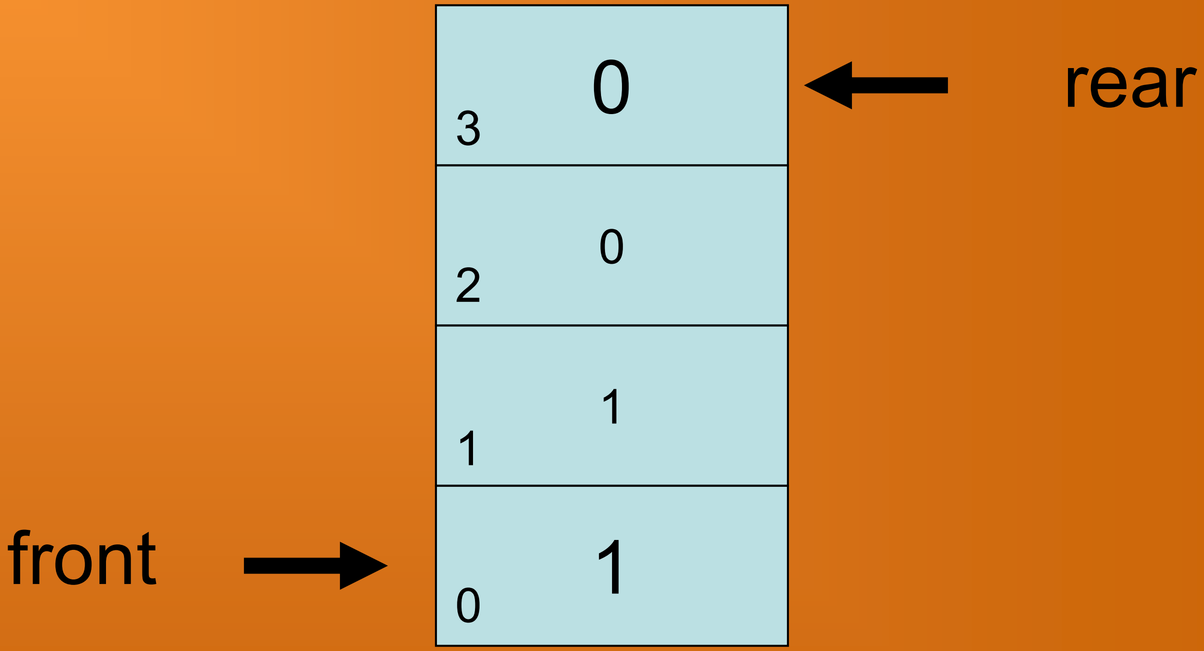
Coding : Dequeue

```
int Dequeue(Queue *Q)
{
  int temp;
  if (Empty)
     printf("Tidak dapat mengambil data! Queue
  Kosong!");
  else {
     return Q->Item[Q->Front];
     if ((Q->Front==Q->Rear)
          Q->Front=Q->Rear=-1;
     Q->Front = (Q->Front + 1) % MAXQUEUE;
     --(Q->Count);
     //return temp;
  }
}
```

Kondisi awal

MAX = 4

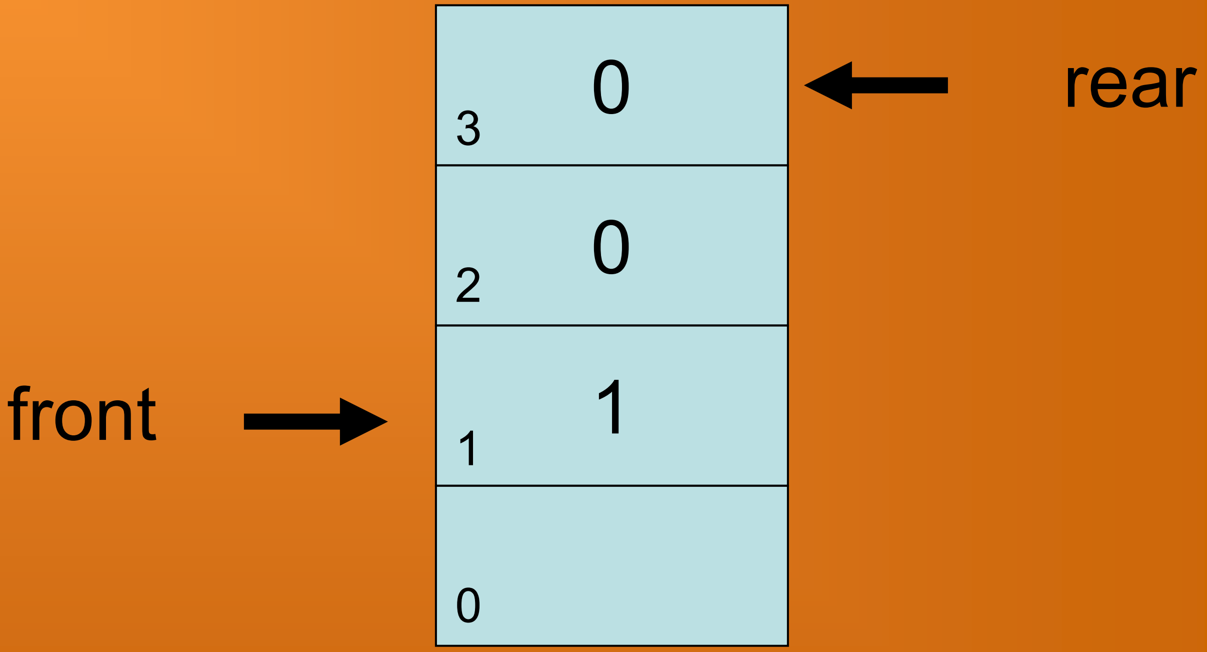
n = 4



Shift 1x(Dequeue)

MAX = 4

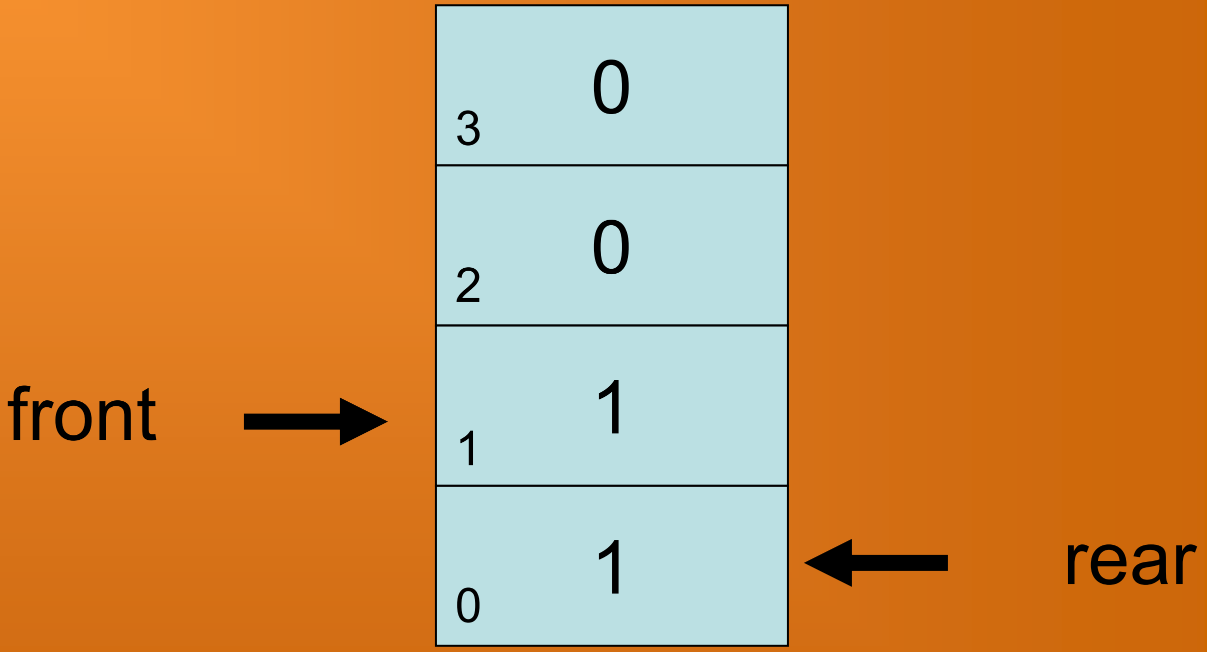
n = 3



Shift 1x(Enqueue)

MAX = 4

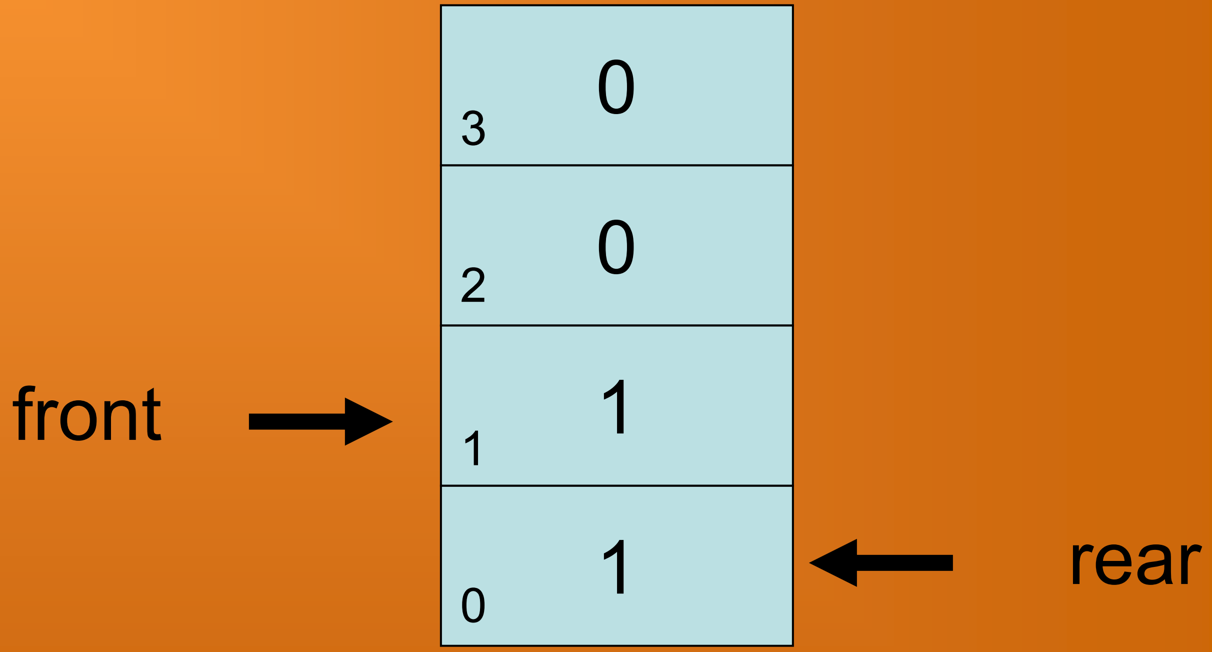
n = 4



Shift 1x(Enqueue)

MAX = 4

n = 4


front
rear
3
0
2
0
1
1
0
1