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1. Write the algorithm of queue mechanism using
   - Single linked list
   - Array alternative 1
   - Array alternative 2
   - Array alternative 3
2. Use the same infotype as before
3. Each member is to write 1 mechanism

   Jawab :

❖ Single linked list

Algoritma:

- Simpan 2 reference: front → … → … →back
- enqueue(Benda x):
  - ✓ Buat sebuah node baru N yang datanya x
  - ✓ if queue sebelumnya empty, maka front = back = N
  - ✓ else tambahkan N di akhir (dan update back)
- dequeue():
  - ❖ Hapus elemen pertama: front = front.next

❖ Array alternative 1 Algoritma :

- ❖ Add(P,3)
- ❖ Add(P,4)
- ❖ Add(P,2)
- ❖ Del(P)
- ❖ Del(P)
- ❖ Add(P,5)
- ❖ Del(P)
- ❖ Del(P)

1	2	3	4	5
3	4	2		

Head = 1

Tail = 3

Is empty =True

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = True

1	2	3	4	5
5	2			

Head = 1

Tail = 2

Is empty = True

1	2	3	4	5

Head = 0

Tail = 0

Is empty = False

- Array Alternative 2
  Algoritma:

```
Add(P,3)
Add(P,4)
 Add(P,2)
Del(P)
Del(P)
Add(P,5)
Del(P)
Add(P,6)
Add(P,7)
Del(P)
Del(P)
Del(P)
```

1	2	3	4	5
3	4	2		

Head = 1

Tail = 3

Is empty = True

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = True

1	2	3	4	5
5	2			

Head = 1

Tail = 2

Is empty = True

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = True

1	2	3	4	5
7	6	2		

Head = 1

Tail = 3

Is empty = True

1	2	3	4	5

Head = 0

Tail = 0

Is empty = False

- Array alternative 3
  Algoritma:

```
Add(P,3)
Add(P,4)
Add(P,2)
Del(P)
Del(P)
Add(P,5)
Del(P)
Add(P,6)
Add(P,7)
Add(P,8)
Del(P)
Del(P)
Del(P)
Del(P)
```

1	2	3	4	5
3	4	2		

Head = 1

Tail = 3

Is empty = True

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = True

1	2	3	4	5
5	2			

Head = 1

Tail = 2

Is empty = True

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = True

1	2	3	4	5
8	7	6	2	

Head = 1

Tail = 3

Is empty = True

1	2	3	4	5

Head = 0

Tail = 0

Is empty = False