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