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Matkul: ASD

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 \rightarrow ... \rightarrow ... \rightarrow 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)
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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