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Mata Kuliah : Algoritma dan Struktur Data

Tugas Queue

Soal

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

Pembahasan

- Single Linked list
  Step 1 : Simpan 2 reference
  Step 2 : Buat sebuah node baru n yang datanya x
  Step 3 : Jika queue sebelumnya kosong, maka front = back = n
  Else, tambahkan n diakhir(dan update back)
  Step 4 : dequeue();
  Step 5 : hapus elemen pertama : front = front.next

- Array alternative 1

```
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 = false

1	2	3	4	5
2				

Head = 1
Tail = 0

Is empty = false

1	2	3	4	5
5	2			

Head = 1

Tail = 2

Is empty = false

1	2	3	4	5

Head = 0

Tail = 0

Is empty = true

- Array alternative 2

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 = false

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = false

1	2	3	4	5
5	2			

Head = 1

Tail = 2

Is empty = false

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = false

1	2	3	4	5
7	6	2		

Head = 1

Tail = 3

Is empty = false

1	2	3	4	5

Head = 0

Tail = 0

Is empty = true

- Array alternative 3

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 = false

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = false

1	2	3	4	5
5	2			

Head = 1

Tail = 2

Is empty = false

1	2	3	4	5
2				

Head = 1

Tail = 0

Is empty = false

1	2	3	4	5
8	7	6	2	

Head = 1

Tail = 4

Is empty = false

1	2	3	4	5

Head = 0

Tail = 0

Is empty = true