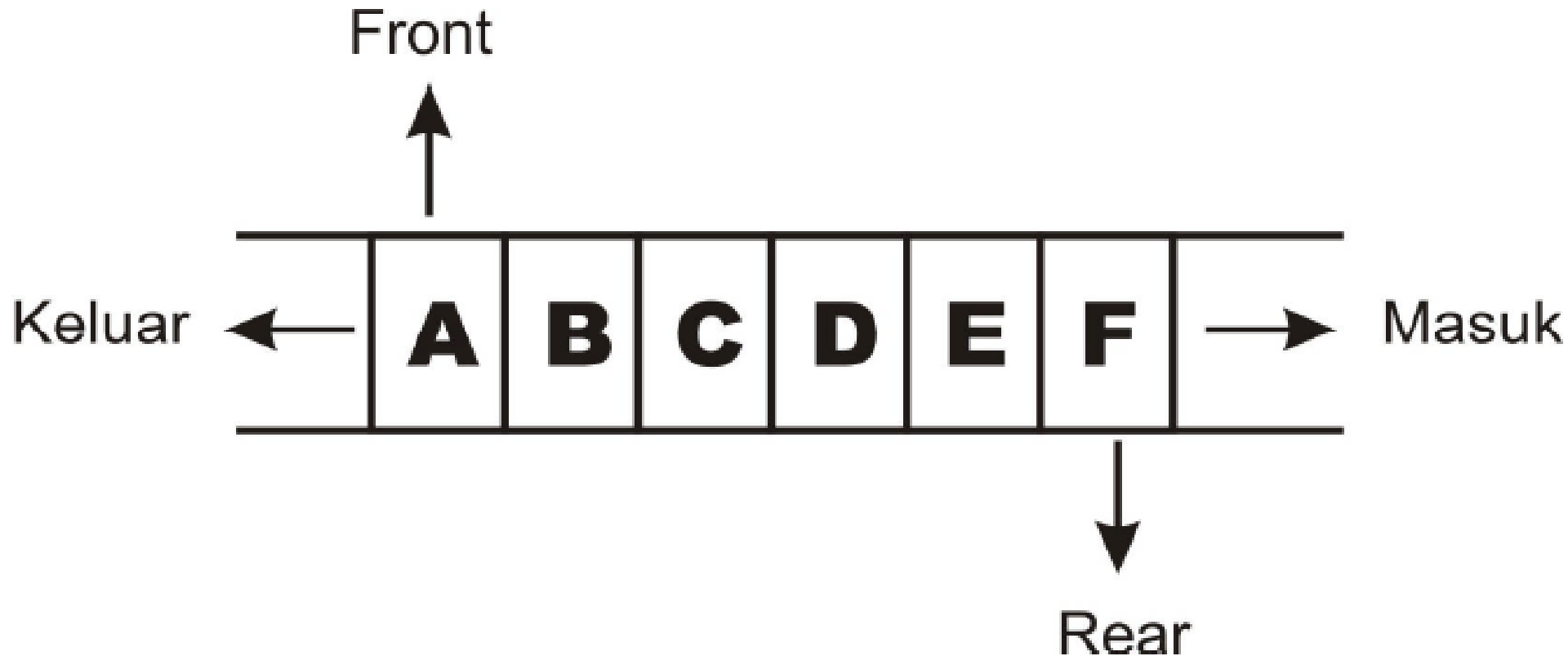
Queue (2)

Brigida Arie Minartiningtyas,M.Kom

Review Queue Linier

- What is Queue???
  - Secara harfiah queue dapat diartikan sebagai **Antrian**
  - Kumpulan data dengan penambahan data hanya melalui satu sisi, yaitu belakang (tail) dan penghapusan data hanya melalui sisi depan (head).

QUEUE (FIFO)



Elemen Queue

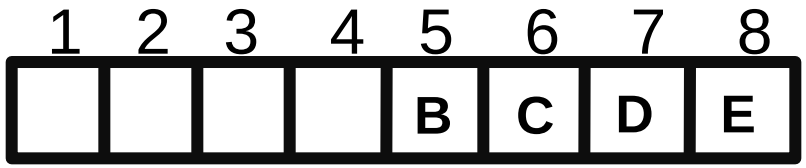
- Elemen yang pertama kali masuk ke dalam queue disebut elemen depan (front/**head** of queue)

- Elemen yang terakhir kali masuk ke queue disebut elemen belakang (rear/**tail** of queue)

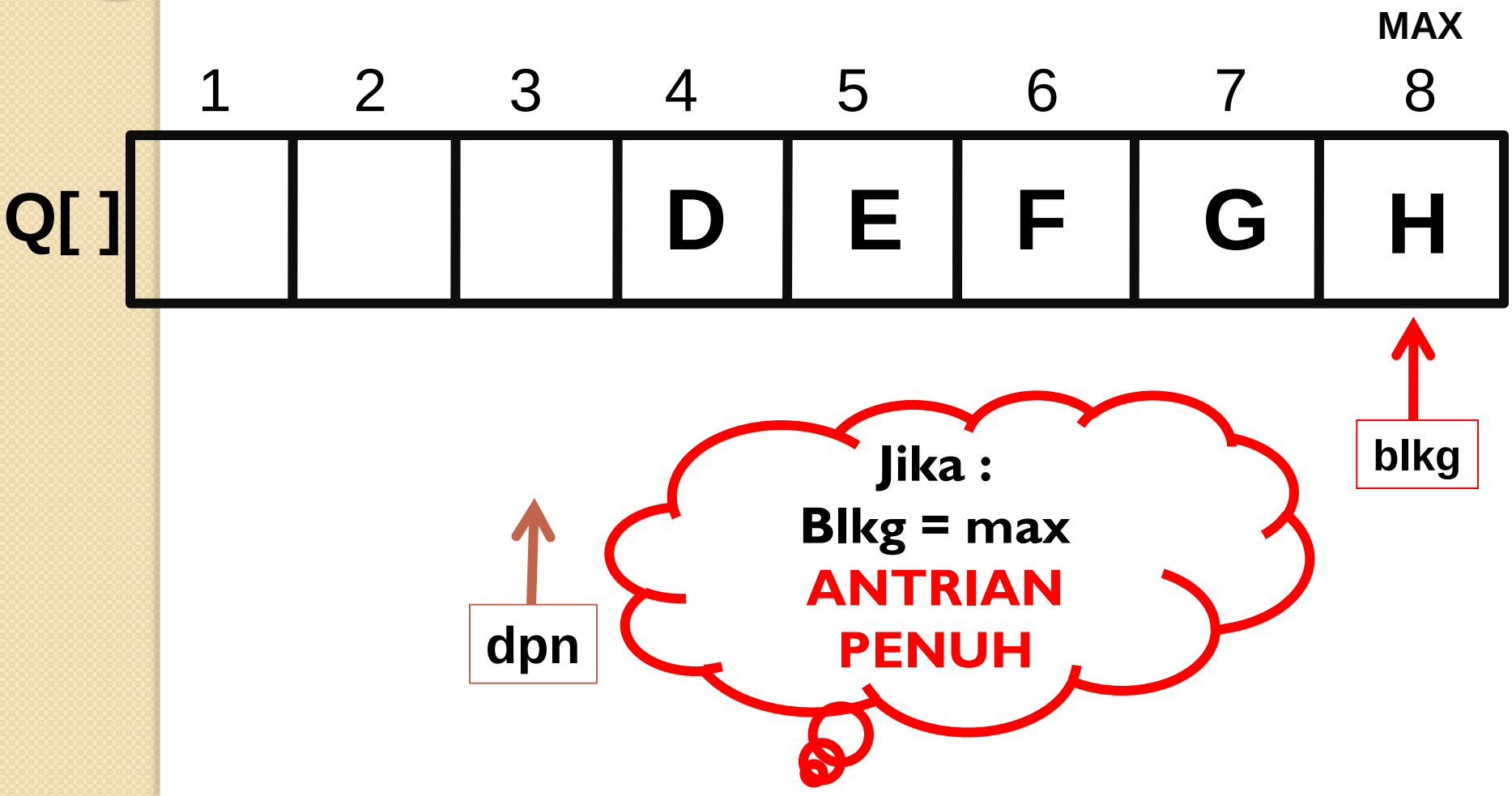
Operasi Dasar Queue

- **Enqueue**
  - proses penambahan elemen di posisi belakang
- **Dequeue**
  - proses pengambilan elemen

Kekurangan Antrian Lurus

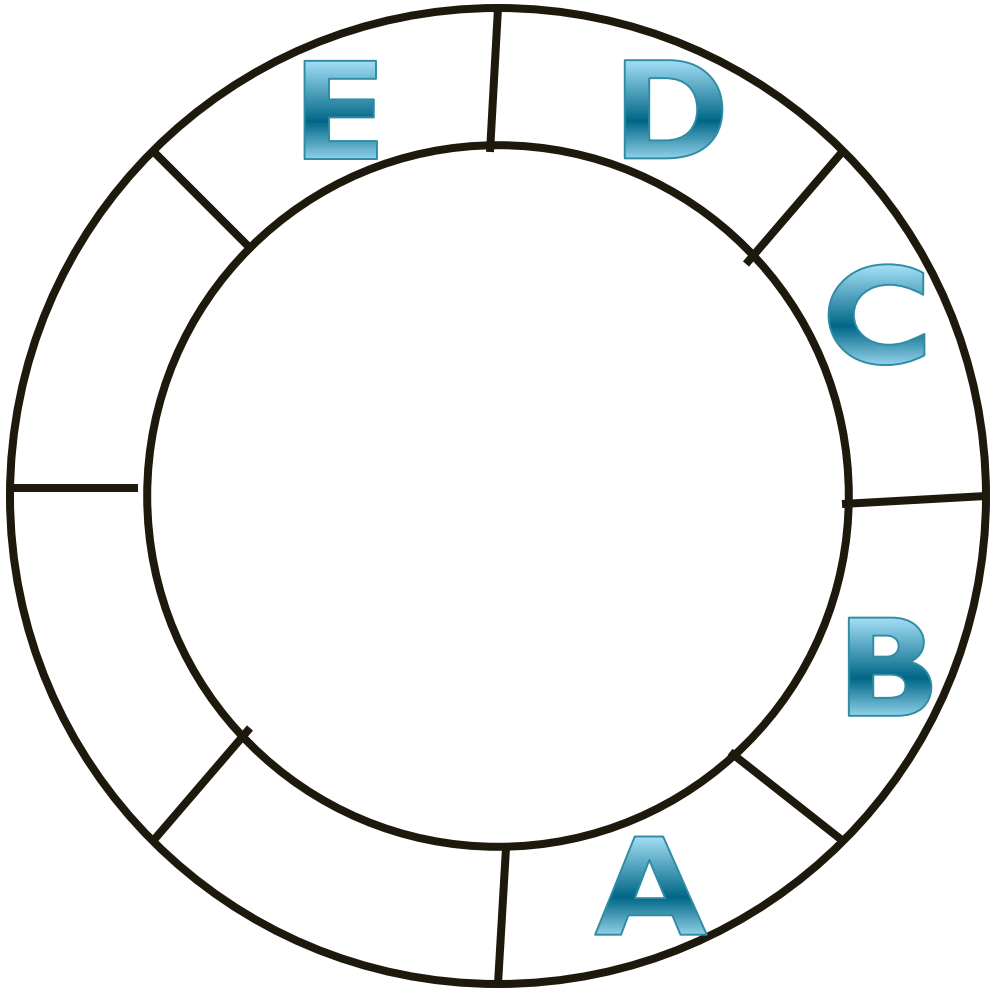


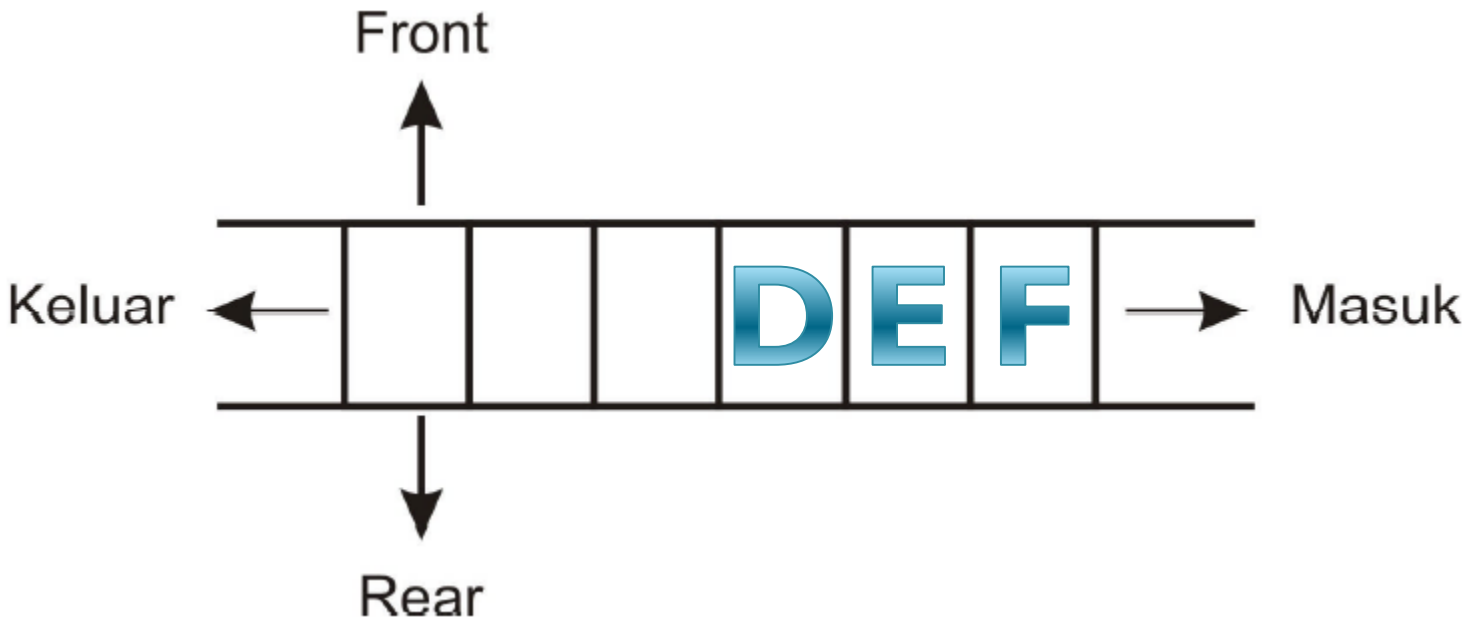
Visualisasi Antrian Lurus

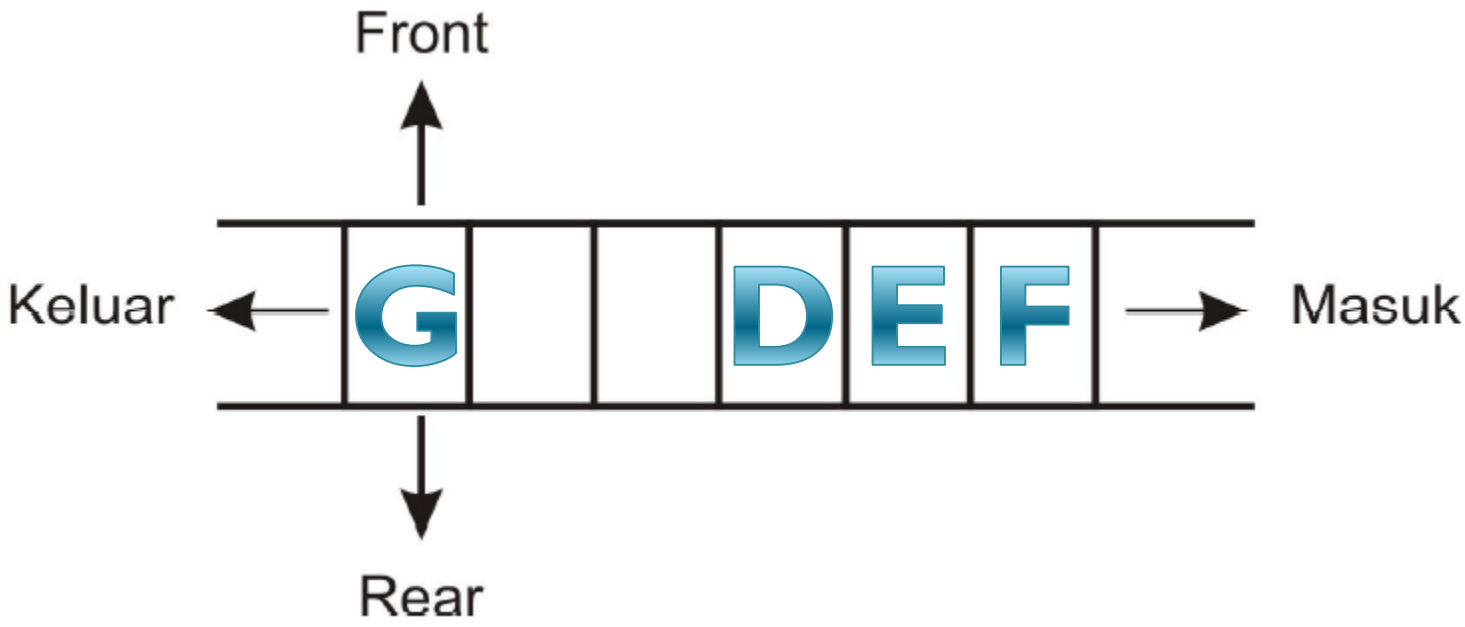


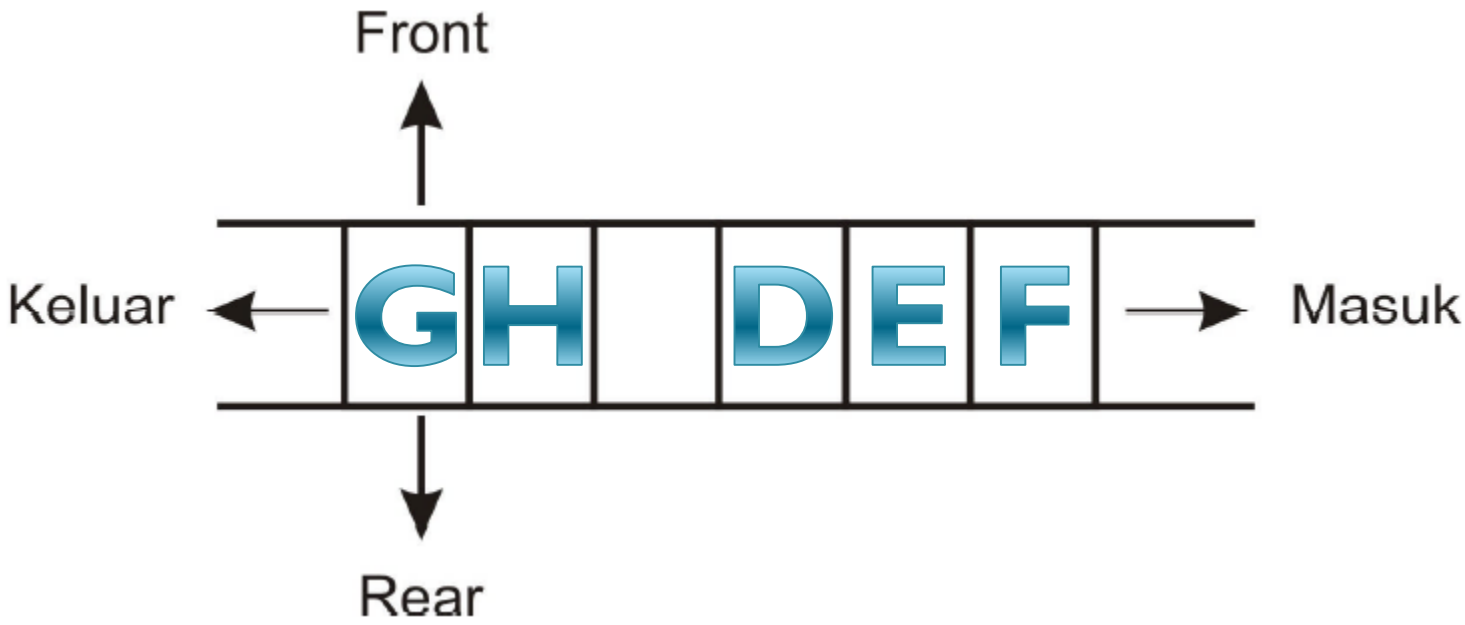
ANTRIAN MELINGKAR

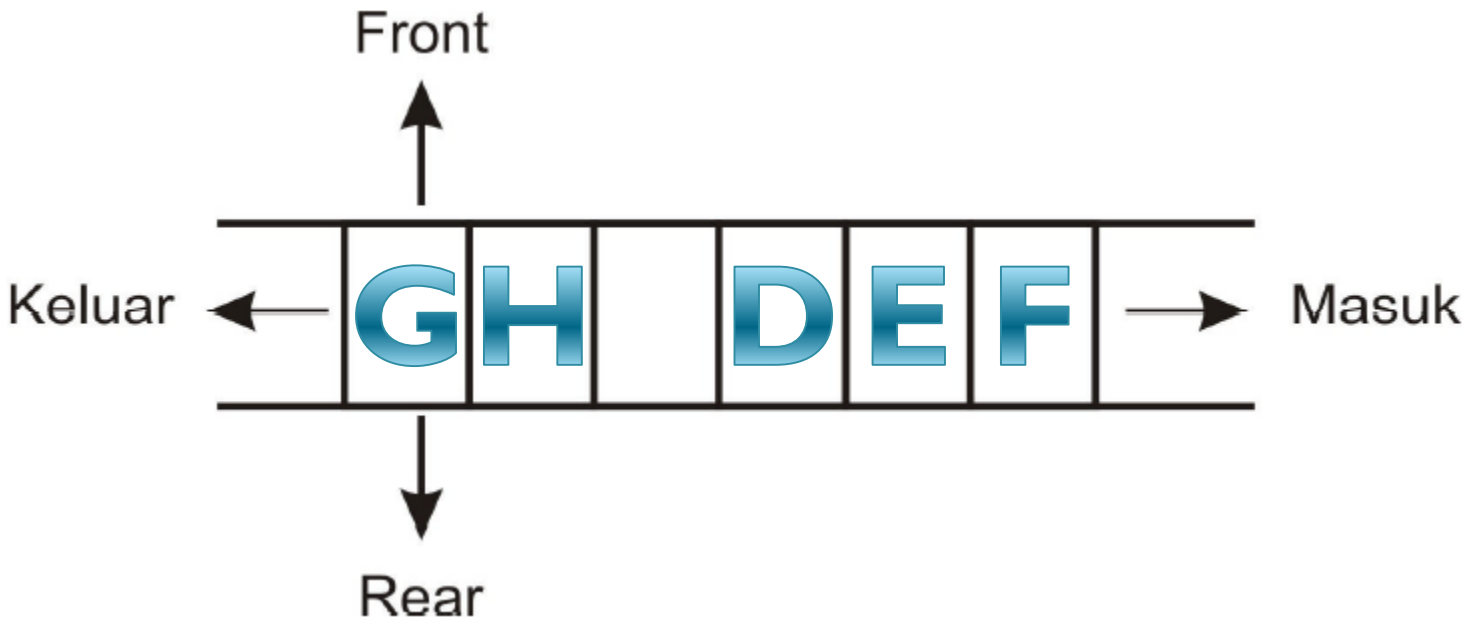
Antrian Melingkar

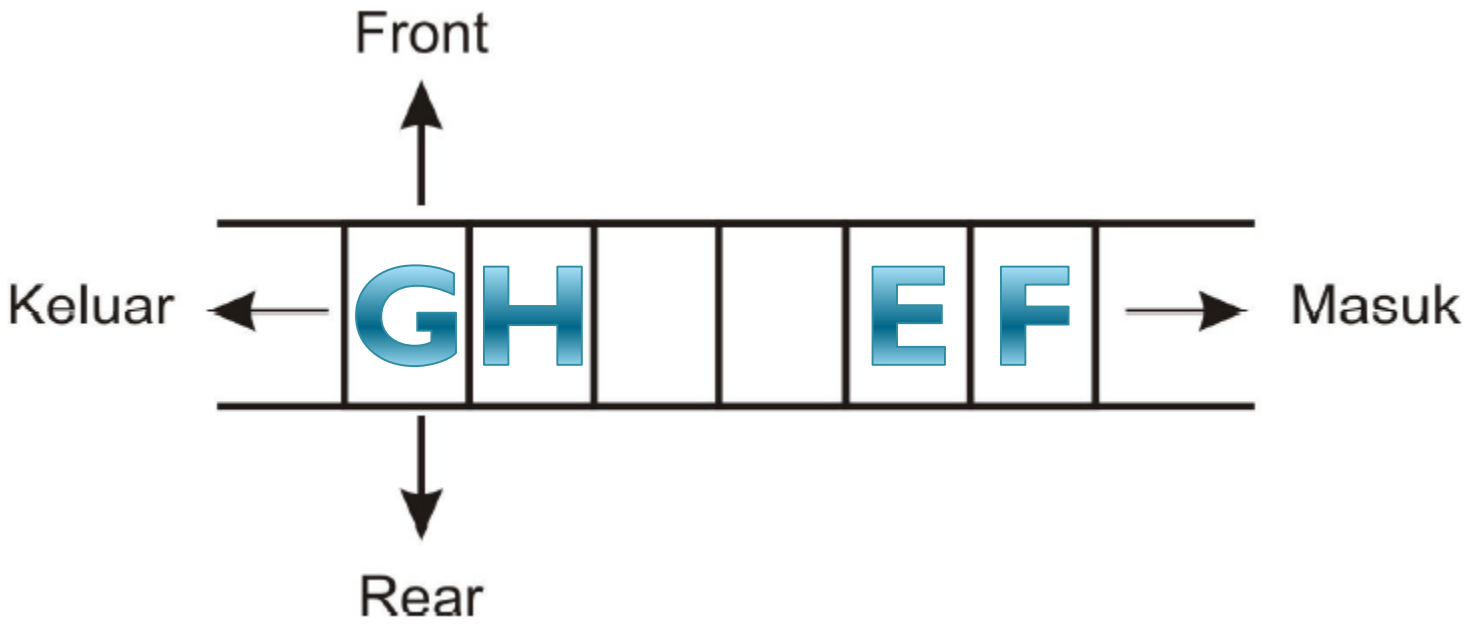


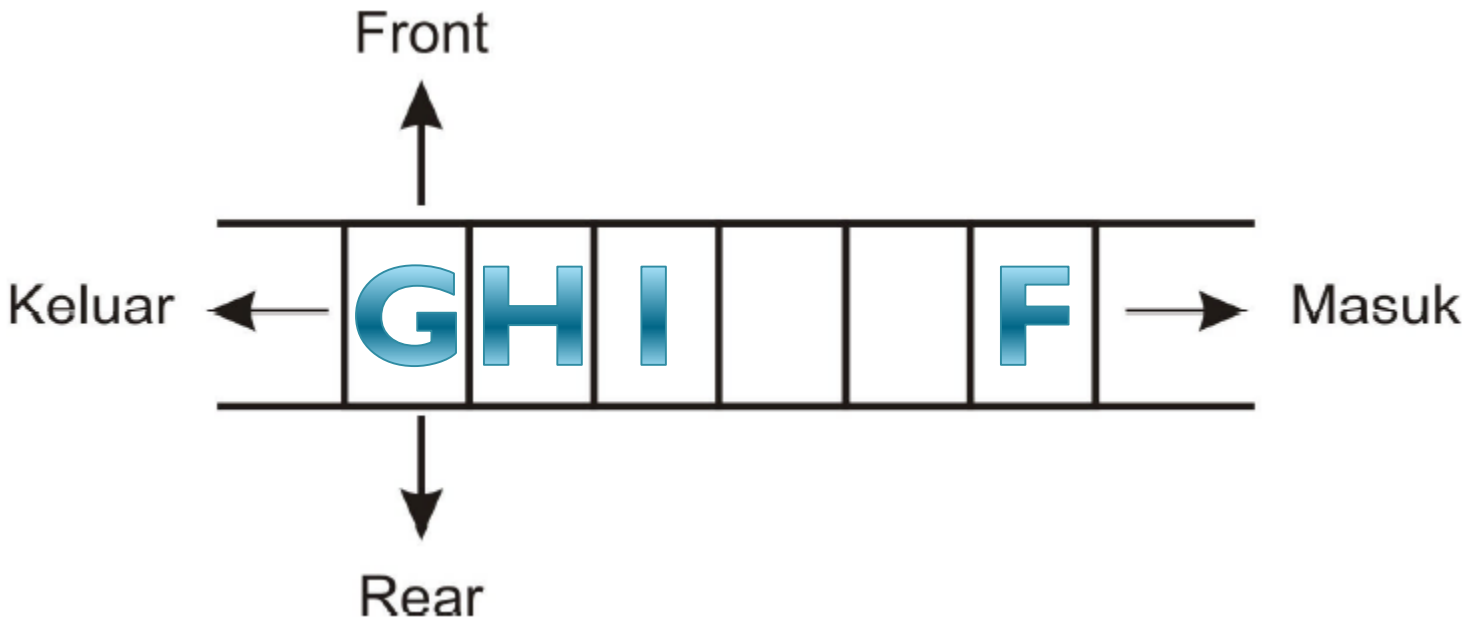

Front
Keluar
D
E
F
Masuk
Rear


Front
Keluar
G
D
E
F
Masuk
Rear

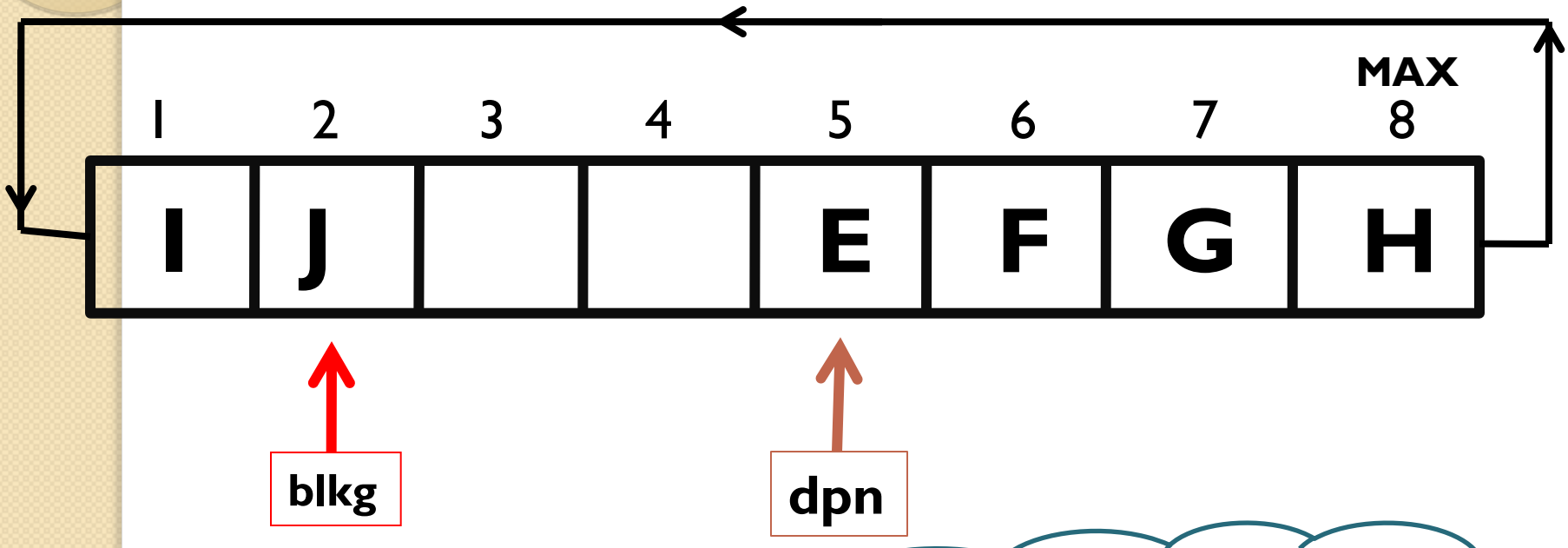

Front
Keluar
G
H
D
E
F
Masuk
Rear


Front
Keluar
G
H
D
E
F
Masuk
Rear


Front
Keluar
G
H
E
F
Masuk
Rear


Front
Keluar
G
H
I
F
Masuk
Rear

Visualisasi Antrian Melingkar



Jika :

Blkg = max

(setting ke index awal)

Blkg := 1

- Dengan antrian melingkar, meskipun posisi terakhir telah terpakai, elemen baru tetap dapat ditambahkan pada posisi pertama jika posisi pertama dalam keadaan kosong.

Deklarasi Awal

```
Const Max = 10;
 Type
  Antri = array[1..max] of char;
Var
  Antrian : Antri;
  Depan, Belakang, jml : integer;

 Function KOSONG(Q:Antri) : boolean;
   begin
     KOSONG := (Depan = Belakang);
   end;
```

Tambah Data

```
procedure TAMBAH(var Q:Antri; X:char)
begin
  if jml = max then
      write('ANTRIAN PENUH')
  else
  begin
      if Belakang = Max then
            Belakang := 1
      else
            Belakang := Belakang+1;
            Q[Belakang] := X;
            jml := jml + 1
  end;
end;
```

Ambil Data

```
function HAPUS(var Q:Antri) : char;
begin
  if KOSONG(Q) then
      writeln('ANTRIAN KOSONG')
  else
      begin
            if Depan = Max then
                  Depan := 1
            else
                  Depan := Depan + 1;
                  HAPUS := Q[Depan];
                  Q[depan] := ' ';
                  jml := jml - 1
      end;
end;
```

REVIEW PRA UTS

- Pengantar Struktur Data
- Array
  - Array satu dimensi
  - Array multidimensi
- Record
  - Mengakses Record
  - Array dalam Record
- Stack
  - Mendeklarasikan Stack
  - Algoritma Push dan Pop

- Aplikasi Stack
  - Infix → Postfix
- Queue
  - Pendeklarasian Queue
  - Algoritma Enqueue dan Dequeue
  - Linier Queue dan Circular Queue