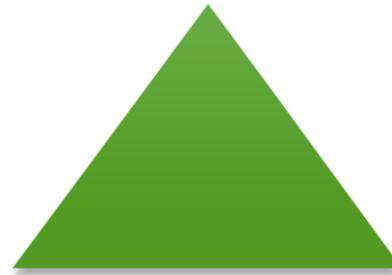
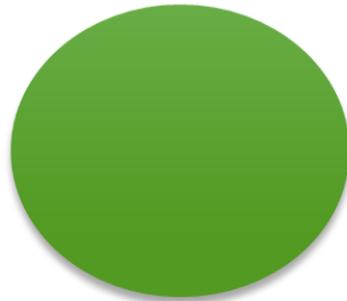
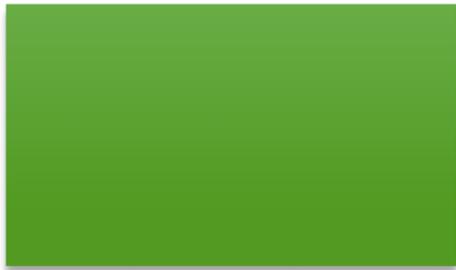


# Pengenalan Feature

Fitri Utamingrum

# Contoh Feature

- ▶ Persegi Panjang
- ▶ Lingkaran
- ▶ segitiga



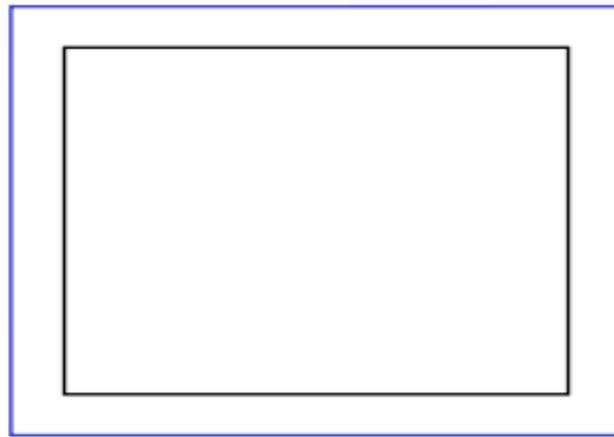
Permasalahan:

Bagaimana mendeteksi bentuk diatas?

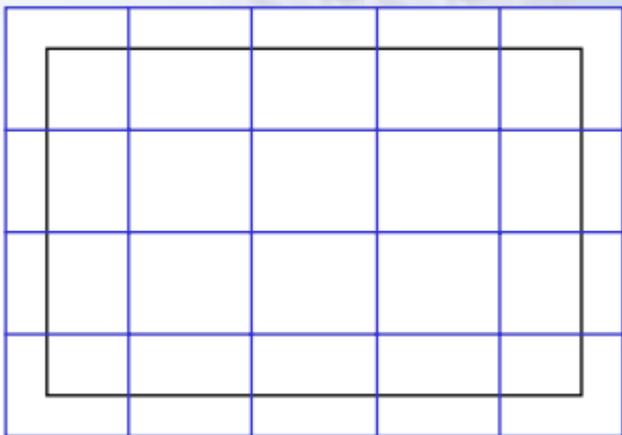
## Adapun Langkahnya adalah:

- ▶ Dapatkan tepi gambar menggunakan deteksi tepi,
- ▶ Tentukan skala fitur (Ukuran fitur harus sama),
- ▶ Setiap sel/elemen akan bernilai 1 bila mendeteksi garis tepi dan akan bernilai 0 bila tidak ada garis tepi
- ▶ Menerapkan integral proyeksi

# Persegi Panjang

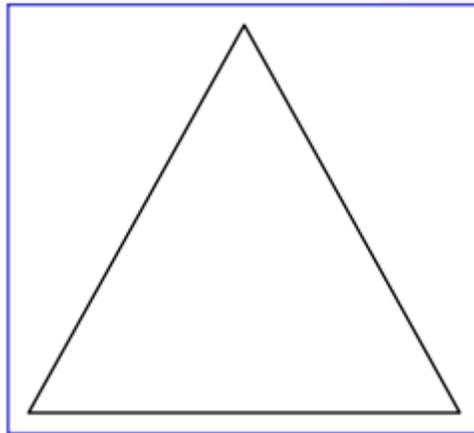
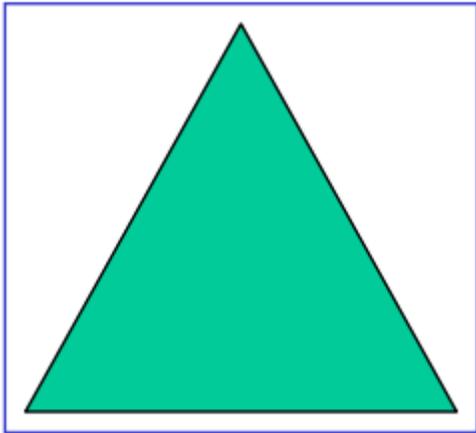


Deteksi tepi

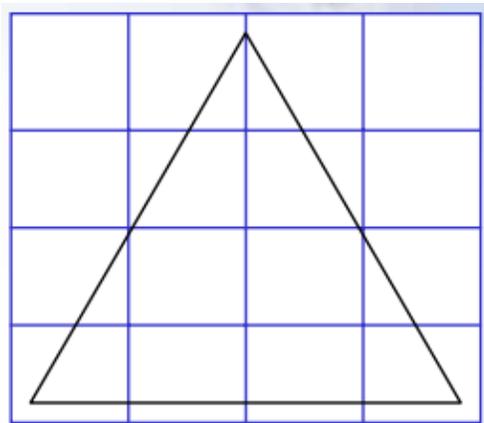


<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

# Segi tiga

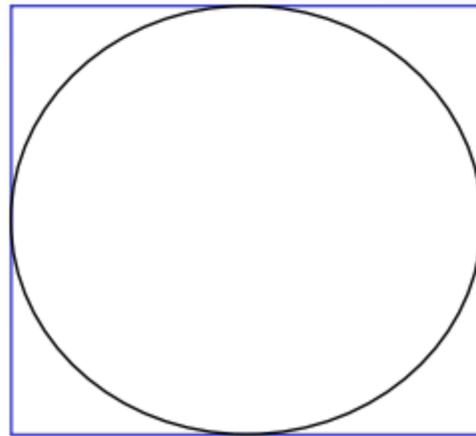
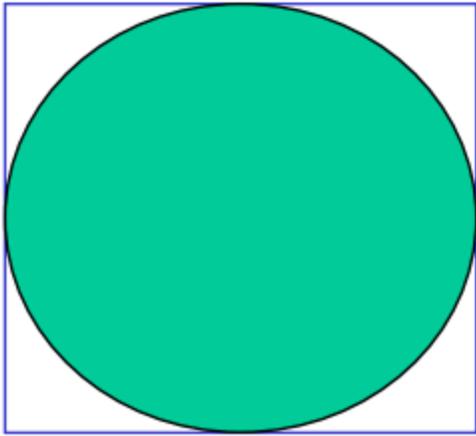


Deteksi tepi

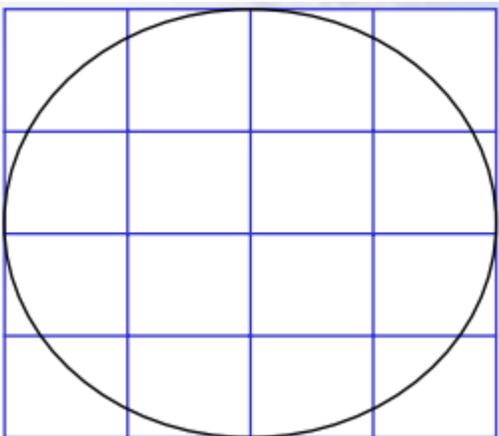


<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

# Lingkaran



Deteksi tepi



<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

# Integral Proyeksi

- ▶ Integral Proyeksi adalah suatu teknik yang menjumlahkan nilai setiap kolom atau setiap baris.
- ▶ Integral proyeksi didefinisikan dengan:

$$h(j) = \sum_{i=1}^{Nbaris} x(i, j)$$

$$h(i) = \sum_{j=1}^{Nkolom} x(i, j)$$

## Contoh: Integral proyeksi untuk angka 4

0	0	0	1	1	0
0	0	1	0	1	0
0	1	0	0	1	0
1	1	1	1	1	1
0	0	0	0	1	0
0	0	0	0	1	0



2
2
2
6
1
1

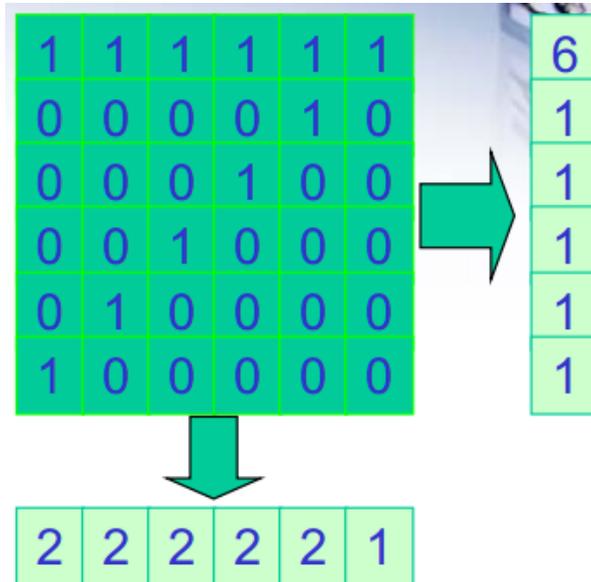
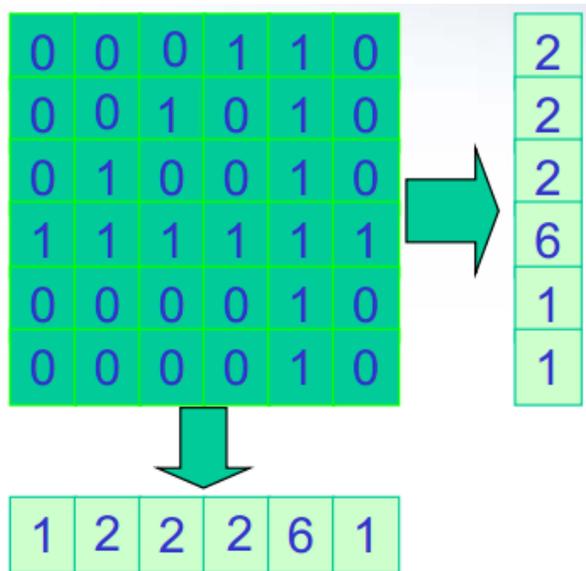


1	2	2	2	6	1
---	---	---	---	---	---

Featur angka 4: 1 2 2 2 6 1 2 2 2 6 1 1

# Aplikasi Integral Proyeksi

- Aplikasi untuk membandingkan dua buah angka Angka 4 dan 7



Fitur angka 4:    1 2 2 2 6 1 2 2 2 6 1 1  
 Fitur Angka 7:    2 2 2 2 2 1 6 1 1 1 1 1  


---

 Nilai perbedaan= 1+0+0+0+4+0+4+1+1+5+0+0=16

# Latihan

- ▶ Buatlah program untuk mengenali angka!  
misalnya angka 1,2 dan 3 (Font Time new roman)