

LOGIKA FUZZY

Pertemuan ke-4

Endang Sri Rahayu

OPERATOR CRISP

1. Interseksi
2. Komplemen
3. Union
4. Exclusive union

$$A = \{1, 3, 5, 7, 11, 13, 17\}$$

$$B = \{1, 2, 3, 5, 8, 13, 21\}$$

- $A \cap B = \{1, 3, 5, 13\}$
- $A' = \{2, 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 19, 20, 21\}$
- $A \cup B = \{1, 2, 3, 5, 7, 8, 11, 13, 17, 21\}$
- Exclusive Union A, B = $\{2, 7, 8, 11, 17, 21\}$

OPERATOR FUZZY

Interseksi $\mu_{A \cap B} = \min(\mu_A[x], \mu_B[x])$

Union $\mu_{A \cup B} = \max(\mu_A[x], \mu_B[x])$

Komplemen $\mu_{A'} = 1 - \mu_A[x]$

Interseksi Himpunan Fuzzy

Tabel Kebenaran Operator Zadeh : AND

0. 0. 0
0. 1. 0
1. 0. 0
1. 1. 1

	0.00	0.25	0.50	0.75	1.00
0.00	0.00	0.00	0.00	0.00	0.00
0.25	0.00	0.25	0.25	0.25	0.25
0.50	0.00	0.25	0.50	0.50	0.50
0.75	0.00	0.25	0.50	0.75	0.75
1.00	0.00	0.25	0.50	0.75	1.00

Fungsi karakteristik himpunan fuzzy TINGGI dan DEWASA diberikan sebagai berikut :

$$\mu_{\text{TINGGI}[x]} = [\text{tinggi badan} \geq 150]$$

$$\mu_{\text{DEWASA}[x]} = [\text{umur} \geq 20 \wedge \text{umur} \leq 25]$$

Nama	Dewasa (D)	Tinggi (T)
Budi	18	160
Ahmad	19	149
Rina	22	160
Yuli	20	145
Eka	21	155
Andi	19	158
Irvan	19	163

Nama	Dewasa (D)	Tinggi (T)	$D \cap T$
Budi	0	1	0
Ahmad	0	0	0
Rina	1	1	1
Yuli	1	0	0
Eka	1	1	1
Andi	0	1	0
Irvan	0	1	0

Vektor bit AND : DEWASA dan TINGGI

$$\mu_{A \cap B} = \min(\mu_A[x], \mu_B[y])$$

Union Himpunan Fuzzy

Tabel Kebenaran Operator Zadeh : OR

	0.00	0.25	0.50	0.75	1.00
0.00	0.00	0.25	0.50	0.75	1.00
0.25	0.25	0.25	0.50	0.75	1.00
0.50	0.50	0.50	0.50	0.75	1.00
0.75	0.75	0.75	0.75	0.75	1.00
1.00	1.00	1.00	1.00	1.00	1.00

Fungsi karakteristik himpunan fuzzy TINGGI **atau** DEWASA diberikan sebagai berikut :

$$\mu_{\text{TINGGI}[x]} = [\text{tinggi badan} \geq 150]$$

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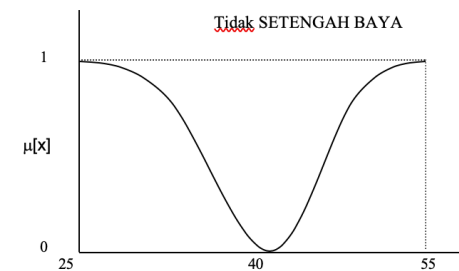
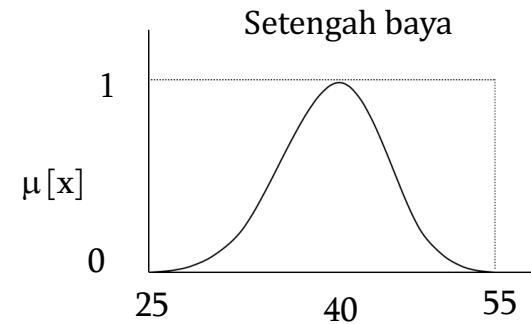
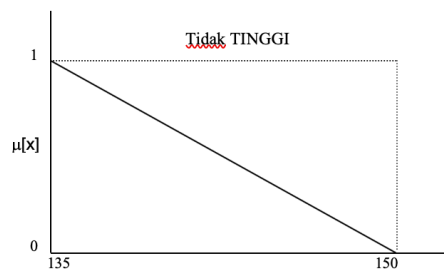
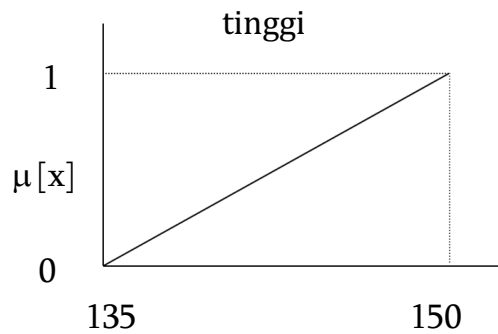
Nama	Dewasa (D)	Tinggi (T)	$D \cup T$
Budi	0	1	1
Ahmad	0	0	0
Rina	1	1	1
Yuli	1	0	1
Eka	1	1	1
Andi	0	1	1
Irvan	0	1	1

Vektor bit AND : DEWASA **atau** TINGGI

$$\mu_{A \cup B} = \max(\mu_A[x], \mu_B[y])$$

Komplemen (Negasi) Himpunan Fuzzy

$$\mu_{A'}[x] = 1 - \mu_A[x]$$



Diskusi

- Pemahaman Fuzzy Set
 - Operator Crisp
 - Operator Fuzzy
- Contoh kasus
 - OPERATOR AND
 - OPERATOR OR
 - NEGASI