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Mata Kuliah : Penambangan Data

Kelompok : Ail. 43u61

Prodi : SI Teknik Informatika

## Pertemuan 12 Regresi

Tentukan persamaan regresi berikut

	Usia Mobil (x)	Harga Mobil (y)	$x^2$	$y^2$	xy	$xy^2$
1	5	85	25	7225	425	180625
2	4	103	16	10609	412	169744
3	6	70	36	4900	420	176400
4	5	82	25	6724	410	168100
5	5	89	25	7921	445	198025
6	5	98	25	9604	490	240100
7	6	66	36	4356	396	156816
8	6	95	36	9025	570	324900
9	2	169	4	28561	338	114244
10	7	70	49	4900	490	240100
11	7	48	49	2304	336	112896
$\Sigma$	58	975	326	96129	4732	2081950

→ Analisis Korelasi

$$\begin{aligned}
 r &= \frac{n \Sigma XY - \Sigma X \Sigma Y}{\sqrt{(n \Sigma x^2 - (\Sigma x)^2)(n \Sigma y^2 - (\Sigma y)^2)}} \\
 &= \frac{11 \cdot 4732 - 58 \cdot 975}{\sqrt{(11 \cdot 326 - (58)^2)(11 \cdot 96129 - (4732)^2)}} \\
 &= \frac{52052 - 56550}{\sqrt{(3586 - 3364)(1057419 - 950625)}} \\
 &= \frac{-4498}{\sqrt{23708268}} \\
 r &= -0,9237820881
 \end{aligned}$$

→ Regresi

$$y = a + bX$$

$$1) \bar{X} = \frac{58}{11} = 5,272727273$$

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$$2) \bar{y} = \frac{975}{11} = 88,63636364$$

$$3) b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

$$= \frac{11 \cdot 4732 - 58 \cdot 975}{11 \cdot 326 - (58)^2}$$

$$b = -20,26126126$$

$$4) a = \bar{y} - b\bar{x}$$

$$= (88,63636364) - (-20,26126126)(5,272727273)$$

$$a = 195,4684685$$

Persamaan Regresi

$$Y = a + bX$$

$$Y = 195,4684685 + (-20,26126126)X$$

## **Implementasi Python**

**Link GitHub :** <https://github.com/adeliaputriw/LinearRegression-43UG1-A11.2022.14426.git>

**Link GColab :**

[https://colab.research.google.com/drive/1IDCfb\\_F94fEYYbLxZG4YdGyEo5pje6OJ?usp=sharing](https://colab.research.google.com/drive/1IDCfb_F94fEYYbLxZG4YdGyEo5pje6OJ?usp=sharing)