**Contoh data kasus.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID\_kasus** | **P/H** | **G1** | **G2** | **G3** | **G4** | **G5** | **G6** | **G7** | **G8** | **G45** | **G46** | **G47** | **G67** | **G68** | **G69** | **G70** | **Solusi** |
| K1 | H1 | ✔ | ✔ | ✔ |  |  |  |  |  |  |  |  |  |  |  |  | Solusi 1 |
| K2 | H1 | ✔ | ✔ |  | ✔ |  |  |  |  |  |  |  |  |  |  |  | Solusi 2 |
| K3 | H1 |  |  | ✔ |  | ✔ |  |  |  |  |  |  |  |  |  |  | Solusi 3 |
| K4 | H2 |  |  |  |  |  | ✔ | ✔ | ✔ |  |  |  |  |  |  |  | Solusi 4 |
| K5 | H2 |  |  |  |  |  |  | ✔ | ✔ |  |  |  |  |  |  |  | Solusi 5 |
| K6 | P13 |  |  |  |  |  |  |  |  |  |  |  | ✔ | ✔ | ✔ |  | Solusi 6 |
| K7 | P13 |  |  |  |  |  |  |  |  |  |  |  | ✔ |  |  | ✔ | Solusi 7 |
| K8 | P13 |  |  |  |  |  |  |  |  |  |  |  |  |  | ✔ | ✔ | Solusi 8 |
| K9 | P6 |  |  |  |  |  |  |  |  | ✔ | ✔ |  |  |  |  |  | Solusi 9 |
| K10 | P6 |  |  |  |  |  |  |  |  | ✔ | ✔ | ✔ |  |  |  |  | Solusi 10 |

**Data Baru:** [G6, G6,7 G8]

**Proses Indexing:**

Menghitung peluang Hama dan Penyakit.

1. P(H1) = (3 + 1) / (10 + 1) = 0.3
2. P(H2) = (2 +1) / (10 + 1) = 0.2
3. P(P13) = (3 + 1) / (10 + 1) = 0.3
4. P(P6) = (2 + 1) / (10 + 1) = 0.2

Mengitung peluang Hama dan penyakit berdasarkan gejala

H1:

G1:

* P(H1 | G1 = 0) = (1 + 1) / (3 + 1) = 0.5
* P(H1 | G1 = 1) = (2 + 1) / (3 + 1) = 0.75

G2:

* P(H1 | G2=0) = (1 + 1) / (3 + 1) = 0.5
* P(H1 | G2=1) = (2 + 1) / (3 + 1) = 0.75

G3:

* P(H1 | G3=0) = (1 + 1) / (3 + 1) = 0.5
* P(H1 | G3=1) = (2 + 1) / (3 + 1) = 0.75

G4:

* P(H1 | G4=0) = (2 + 1) / (3 + 1) = 0.75
* P(H1 | G4=1) = (1 + 1) / (3 + 1) = 0.5

G5:

* P(H1 | G5=0) = (2 + 1) / (3 + 1) = 0.75
* P(H1 | G5=1) = (1 + 1) / (3 + 1) = 0.5

G6:

* P(H1 | G6=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G6=1) = (0 + 1) / (3 + 1) = 0.25

G7:

* P(H1 | G7=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G7=1) = (0 + 1) / (3 + 1) = 0.25

G8:

* P(H1 | G8=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G8=1) = (0 + 1) / (3 + 1) = 0.25

G45:

* P(H1 | G45=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G45=1) = (0 + 1) / (3 + 1) = 0.25

G46:

* P(H1 | G46=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G46=1) = (0 + 1) / (3 + 1) = 0.25

G47:

* P(H1 | G47=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G47=1) = (0 + 1) / (3 + 1) = 0.25

G67:

* P(H1 | G67=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G67=1) = (0 + 1) / (3 + 1) = 0.25

G68:

* P(H1 | G68=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G68=1) = (0 + 1) / (3 + 1) = 0.25

G69:

* P(H1 | G69=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G69=1) = (0 + 1) / (3 + 1) = 0.25

G70:

* P(H1 | G70=0) = (3 + 1) / (3 + 1) = 1
* P(H1 | G70=1) = (0 + 1) / (3 + 1) = 0.25

H2:

G1:

* P(H2 | G1=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G1=1) = (0 + 1) / (2 + 1) = 0.3333

G2:

* P(H2 | G2=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G2=1) = (0 + 1) / (2 + 1) = 0.3333

G3:

* P(H2 | G3=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G3=1) = (0 + 1) / (2 + 1) = 0.3333

G4:

* P(H2 | G4=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G4=1) = (0 + 1) / (2 + 1) = 0.3333

G5:

* P(H2 | G5=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G5=1) = (0 + 1) / (2 + 1) = 0.333

G6:

* P(H2 | G6=0) = (1 + 1) / (2 + 1) = 0.6666
* P(H2 | G6=1) = (1 + 1) / (2 + 1) = 0.6666

G7:

* P(H2 | G7=0) = (0 + 1) / (2 + 1) = 0.3333
* P(H2 | G7=1) = (2 + 1) / (2 + 1) = 1

G8:

* P(H2 | G8=0) = (0 + 1) / (2 + 1) = 0.3333
* P(H2 | G8=1) = (2 + 1) / (2 + 1) = 1

G45:

* P(H2 | G45=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G45=1) = (0 + 1) / (2 + 1) = 0.3333

G46:

* P(H2 | G46=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G46=1) = (0 + 1) / (2 + 1) = 0.3333

G47:

* P(H2 | G47=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G47=1) = (0 + 1) / (2 + 1) = 0.3333

G67:

* P(H2 | G67=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G67=1) = (0 + 1) / (2 + 1) = 0.3333

G68:

* P(H2 | G68=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G68=1) = (0 + 1) / (2 + 1) = 0.3333

G69:

* P(H2 | G69=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G69=1) = (0 + 1) / (2 + 1) = 0.3333

G70:

* P(H2 | G70=0) = (2 + 1) / (2 + 1) = 1
* P(H2 | G70=1) = (0 + 1) / (2 + 1) = 0.3333

P6:

G1:

* P(P6 | G1 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G1 = 1) = (0 + 1) / (2 + 1) = 0.3333

G2:

* P(P6 | G2 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G2 = 1) = (0 + 1) / (2 + 1) = 0.3333

G3:

* P(P6 | G3 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G3 = 1) = (0 + 1) / (2 + 1) = 0.3333

G4:

* P(P6 | G4 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G4 = 1) = (0 + 1) / (2 + 1) = 0.3333

G5:

* P(P6 | G5 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G5 = 1) = (0 + 1) / (2 + 1) = 0.3333

G6:

* P(P6 | G6 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G6 = 1) = (0 + 1) / (2 + 1) = 0.3333

G7:

* P(P6 | G7 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G7 = 1) = (0 + 1) / (2 + 1) = 0.3333

G8:

* P(P6 | G8 = 0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G8 = 1) = (0 + 1) / (2 + 1) = 0.3333

G45:

* P(P6 | G45 = 0) = (0 + 1) / (2 + 1) = 0.3333
* P(P6 | G45 = 1) = (2 + 1) / (2 + 1) = 1

G46:

* P(P6 | G46 = 0) = (0 + 1) / (2 + 1) = 0.3333
* P(P6 | G46 = 1) = (2 + 1) / (2 + 1) = 1

G47:

* P(P6 | G47=0) = (1 + 1) / (2 + 1) = 1
* P(P6 | G47=1) = (1 + 1) / (2 + 1) = 0.3333

G67:

* P(P6 | G67=0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G67=1) = (0 + 1) / (2 + 1) = 0.3333

G68:

* P(P6 | G68=0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G68=1) = (0 + 1) / (2 + 1) = 0.3333

G69:

* P(P6 | G69=0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G69=1) = (0 + 1) / (2 + 1) = 0.3333

G70:

* P(P6 | G70=0) = (2 + 1) / (2 + 1) = 1
* P(P6 | G70=1) = (0 + 1) / (2 + 1) = 0.3333

P13:

G1:

* P(P13 | G1 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G1 = 1) = (0 + 1) / (3 + 1) = 0.25

G2:

* P(P13 | G2 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G2 = 1) = (0 + 1) / (3 + 1) = 0.25

G3:

* P(P13 | G3 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G3 = 1) = (0 + 1) / (3 + 1) = 0.25

G4:

* P(P13 | G4 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G4 = 1) = (0 + 1) / (3 + 1) = 0.25

G5:

* P(P13 | G5 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G5 = 1) = (0 + 1) / (3 + 1) = 0.25

G6:

* P(P13 | G6 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G6 = 1) = (0 + 1) / (3 + 1) = 0.25

G7:

* P(P13 | G7 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G7 = 1) = (0 + 1) / (3 + 1) = 0.25

G8:

* P(P13 | G8 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G8 = 1) = (0 + 1) / (3 + 1) = 0.25

G45:

* P(P13 | G45 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G45 = 1) = (0 + 1) / (3 + 1) = 0.25

G46:

* P(P13 | G46 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G46 = 1) = (0 + 1) / (3 + 1) = 0.25

G47:

* P(P13 | G47 = 0) = (3 + 1) / (3 + 1) = 1
* P(P13 | G47 = 1) = (0 + 1) / (3 + 1) = 0.25

G67:

* P(P13 | G67 = 0) = (1 + 1) / (3 + 1) = 0.5
* P(P13 | G67 = 1) = (2 + 1) / (3 + 1) = 0.75

G68:

* P(P13 | G68 = 0) = (2 + 1) / (3 + 1) = 0.75
* P(P13 | G68 = 1) = (1 + 1) / (3 + 1) = 0.5

G69:

* P(P13 | G69 = 0) = (1 + 1) / (3 + 1) = 0.5
* P(P13 | G69 = 1) = (2 + 1) / (3 + 1) = 0.75

G70:

* P(P13 | G70 = 0) = (1 + 1) / (3 + 1) = 0.5
* P(P13 | G70 = 1) = (2 + 1) / (3 + 1) = 0.75

**Menghitung peluang tiap penyakit/hama berdasarkan kasus baru.**

1. P(H1 | G6, G67, G8) = P(H1) \* P(H1 | G1=0) \* P(H1 | G2=0) \* P(H1 | G3=0)

\* P(H1 | G4=0) \* P(H1 | G5=0) \* P(H1 | G6=1)

\* P(H1 | G7=0) \* P(H1 | G8=0) \* P(H1 | G45=0)

\* P(H1 | G45=0) \* P(H1 | G46=0) \* P(H1 | G47=0)

\* P(H1 | G67=1) \* P(H1 | G68=0) \* P(H1 | G69=0)

\* P(H1 | G70=0)

= 0.3 \* 0.5 \* 0.5 \* 0.5 \* 0.75\* 0.75 \* 0.25 \* 1 \* 0.25 \* 1 \*

1 \* 1 \* 1 \* \* 1 \* 1 \* 1

= 0.001318359375

1. P(H2 | G6, G67, G8) = P(H2) \* P(H2 | G1=0) \* P(H2 | G2=0) \* P(H2 | G3=0)

\* P(H2 | G4=0) \* P(H2 | G5=0) \* P(H2 | G6=1)

\* P(H2 | G7=0) \* P(H2 | G8=0) \* P(H2 | G45=0)

\* P(H2 | G45=0) \* P(H2 | G46=0) \* P(H2 | G47=0)

\* P(H2 | G67=1) \* P(H2 | G68=0) \* P(H2 | G69=0)

\* P(H2 | G70=0)

= 0.2 \* 1 \* 1 \* 1 \* 1 \* 1 \* 0.6666 \* 0.3333 \* 1 \* 1 \*

1 \* 1 \* 1 \* 1 \* 1 \* 1

= 0.0444444444444445

1. P(P6 | G6, G67, G8) = P(P13) \* P(P13 | G1=0) \* P(P13 | G2=0) \* P(P13 | G3=0)

\* P(P6 | G4=0) \* P(P6 | G5=0) \* P(6 | G6=1)

\* P(P6 | G7=0) \* P(P6 | G8=0) \* P(P6 | G45=0)

\* P(P6 | G45=0) \* P(P6 | G46=0) \* P(P6 | G47=0)

\* P(P6 | G67=1) \* P(P6 | G68=0) \* P(P6 | G69=0)

\* P(P6 | G70=0)

= 0.3 \* 1 \* 1 \* 1 \* 1 \* 1 \* 0.25 \* 1 \* 0.25 \* 1 \* 1 \* 1 \* 0.5 \* 0.75 \*

\* 0.5 \* 0.5

= 0.0017578125

1. P(P13 | G6, G67, G8) = P(P13) \* P(P13 | G1=0) \* P(P13 | G2=0) \* P(P13 | G3=0)

\* P(P13 | G4=0) \* P(P13 | G5=0) \* P(P13 | G6=1)

\* P(P13 | G7=0) \* P(P13 | G8=0) \* P(P13 | G45=0)

\* P(P13 | G45=0) \* P(P13 | G46=0) \* P(P13 | G47=0)

\* P(P13 | G67=1) \* P(P13 | G68=0) \* P(P13 | G69=0)

\* P(P13 | G70=0)

= 0.2 \* 1 \* 1 \* 1 \* 1 \* 1 \* 0.3333 \* 1 \* 0.3333 \* 0.3333 \* 0.3333

\* 0.6666 \* 1 \* 1 \* 1 \* 1

= 0.00164609053497942

Peluang terbesar adalah H2.

**Proses Retrieve**

Selanjutnya akan dihitung similaritas kasus baru dengan kasus lama pada data dalam kelas H2.