

NAMA: NANDA PRAYOGI

NIM: A11.2021.13505

MATA KULIAH: SISTEM TEMU KEMBALI INFORMASI

KELOMPOK: A11.4703

STATUS: LATIHAN SOAL MINGGU KE-9

| | | TEKS | CLASS |
|-----------|----|--|----------|
| TARAINING | D1 | Sepakbola PSIS tahun ini semakin indah. | Olahraga |
| | D2 | Presiden Indonesia menaikkan harga BBM. | Politik |
| | D3 | Partai politik Indonesia berburu suara. | Politik |
| | D4 | Timnas Indonesia gagal juara AFC | Olahraga |
| TESTING | D5 | Presiden menaikkan gaji Timnas Indonesia | ? |

- Jika dokumen-dokumen teks diatas diklasifikasikan ke dalam dua kelas yaitu Class 1 (Olahraga) = D1&D4 dan Class 2 (Politik) = D2&D3
- Pertanyaan : Menggunakan k-NN, dengan nilai K=3, Tentukan kelas dari D5!

LANGKAH 1a:

Melakukan tokenisasi, stop world removal, stemming.

| Dokumen | Term yang Mewakili Dokumen | Class |
|---------|-------------------------------------|----------|
| D1 | sepakbola psis tahun indah | Olahraga |
| D2 | presiden indonesia naik harga bbm | Politik |
| D3 | partai politik indonesia buru suara | Politik |
| D4 | timnas indonesia gagal juara afc | Olahraga |
| D5 | presiden naik gaji timnas indonesia | ? |

LANGKAH 1b:

| | tf | | | | | | idf | Wdt=tf.idf | | | | |
|------|----|----|----|----|----|-----|------------|------------|----|----|----|----|
| Term | D1 | D2 | D3 | D4 | D5 | d f | log(n/d f) | D1 | D2 | D3 | D4 | D5 |

| | | | | | | | | | | | | |
|-----------|---|---|---|---|---|---|---------|---------|---------|---------|---------|---------|
| sepakbola | 1 | | | | | 1 | 0,69897 | 0,69897 | 0 | 0 | 0 | 0 |
| psis | 1 | | | | | 1 | 0,69897 | 0,69897 | 0 | 0 | 0 | 0 |
| tahun | 1 | | | | | 1 | 0,69897 | 0,69897 | 0 | 0 | 0 | 0 |
| indah | 1 | | | | | 1 | 0,69897 | 0,69897 | 0 | 0 | 0 | 0 |
| presiden | | 1 | | | 1 | 2 | 0,39794 | 0 | 0,39794 | 0 | 0 | 0,39794 |
| indonesia | | 1 | 1 | 1 | 1 | 4 | 0,09691 | 0 | 0,09691 | 0,09691 | 0,09691 | 0,09691 |
| naik | | 1 | | | 1 | 2 | 0,39794 | 0 | 0,39794 | 0 | 0 | 0,39794 |
| harga | | 1 | | | | 1 | 0,69897 | 0 | 0,69897 | 0 | 0 | 0 |
| bbm | | 1 | | | | 1 | 0,69897 | 0 | 0,69897 | 0 | 0 | 0 |
| partai | | | 1 | | | 1 | 0,69897 | 0 | 0 | 0,69897 | 0 | 0 |
| politik | | | 1 | | | 1 | 0,69897 | 0 | 0 | 0,69897 | 0 | 0 |
| buru | | | 1 | | | 1 | 0,69897 | 0 | 0 | 0,69897 | 0 | 0 |
| suara | | | 1 | | | 1 | 0,69897 | 0 | 0 | 0,69897 | 0 | 0 |
| timnas | | | | 1 | 1 | 2 | 0,39794 | 0 | 0 | 0 | 0,39794 | 0,39794 |
| gagal | | | | 1 | | 1 | 0,69897 | 0 | 0 | 0 | 0,69897 | 0 |
| juara | | | | 1 | | 1 | 0,69897 | 0 | 0 | 0 | 0,69897 | 0 |
| afc | | | | 1 | | 1 | 0,69897 | 0 | 0 | 0 | 0,69897 | 0 |
| gaji | | | | | 1 | 1 | 0,69897 | 0 | 0 | 0 | 0 | 0,69897 |

LANGKAH 2a:

| WD5*Wdi | | | |
|---------|----------|----------|----------|
| D1 | D2 | D3 | D4 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0,158356 | 0 | 0 |
| 0 | 0,009392 | 0,009392 | 0,009392 |
| 0 | 0,158356 | 0 | 0 |
| 0 | 0 | 0 | 0 |

| | | | |
|---|----------|----------|----------|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0,158356 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0,326104 | 0,009392 | 0,167748 |

LANGKAH 2b:

| Panjang Vektor | | | | |
|----------------|----------|----------|----------|----------|
| D1 | D2 | D3 | D4 | D5 |
| 0,488559 | 0 | 0 | 0 | 0 |
| 0,488559 | 0 | 0 | 0 | 0 |
| 0,488559 | 0 | 0 | 0 | 0 |
| 0,488559 | 0 | 0 | 0 | 0 |
| 0 | 0,158356 | 0 | 0 | 0,158356 |
| 0 | 0,009392 | 0,009392 | 0,009392 | 0,009392 |
| 0 | 0,158356 | 0 | 0 | 0,158356 |
| 0 | 0,488559 | 0 | 0 | 0 |
| 0 | 0,488559 | 0 | 0 | 0 |
| 0 | 0 | 0,488559 | 0 | 0 |
| 0 | 0 | 0,488559 | 0 | 0 |
| 0 | 0 | 0,488559 | 0 | 0 |
| 0 | 0 | 0,488559 | 0 | 0 |
| 0 | 0 | 0 | 0,158356 | 0,158356 |
| 0 | 0 | 0 | 0,488559 | 0 |
| 0 | 0 | 0 | 0,488559 | 0 |
| 0 | 0 | 0 | 0,488559 | 0 |
| 0 | 0 | 0 | 0 | 0,488559 |
| 1,954236 | 1,303222 | 1,963628 | 1,633425 | 0,973019 |
| 1,397939 | 1,141587 | 1,401295 | 1,278055 | 0,986417 |

LANGKAH 2c:

$$\text{Cos}(D5,D1) = \frac{0}{0,986417*1,397939} = 0$$

$$\text{Cos}(D5,D2) = \frac{0,3261}{0,986417*1,141587} = \mathbf{0,289588}$$

$$\text{Cos}(D5,D3) = \frac{0,009392}{0,986417*1,401295} = 0,006795$$

$$\text{Cos}(D5,D4) = \frac{0,167747}{0,986417*1,278055} = 0,133059$$

| | | | |
|----|----------|----------|----------|
| D1 | D2 | D3 | D4 |
| 0 | 0,289588 | 0,006795 | 0,133059 |

LANGKAH 3:

| | | | |
|----------|----------|----------|----|
| 1 | 2 | 3 | 4 |
| D2 | D4 | D3 | D1 |
| 0,289588 | 0,133059 | 0,006795 | 0 |

LANGKAH 4:

| | | |
|---------|----------|---------|
| D2 | D4 | D3 |
| POLITIK | OLAHRAGA | POLITIK |

D5 TERKLASIFIKASI KE KELAS POLITIK