Nama : Johanes Alberto Siahaan

NIM : 211401043

LAB : 5

**MANUAL DARI SOAL UAS**

Text : JAJOHANAOASHEJOHANESSHNASAJOHANESSHAJOHAJOHANESSHN

Pattern : JOHANESSHN

**Jawaban :**

**MEMBUAT TABLE KMPNEXT**

Length pattern = m = 10

x = JOHANESSHN

**Buat Table KMP Next**

* **Buat index 0 berisi -1**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 |  |  |  |  |  |  |  |  |  |

i = 0; m = 10; j = - 1

Karena i < m **terpenuhi** namun j > -1 tidak terpenuhi, sehingga i dan j ditambah 1

sehingga i = 1; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[1] = 0

* **Buat index 1 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 |  |  |  |  |  |  |  |  |

i = 1; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 2; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[2] = 0

* **Buat index 2 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 |  |  |  |  |  |  |  |

i = 2; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 3; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[3] = 0

* **Buat index 3 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 |  |  |  |  |  |  |

i = 3; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 4; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[4] = 0

* **Buat index 4 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 | 0 |  |  |  |  |  |

i = 4; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 5; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[5] = 0

* **Buat index 5 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |

i = 5; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 6; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[6] = 0

* **Buat index 6 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |

i = 6; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 7; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[7] = 0

* **Buat index 7 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |

i = 7; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 8; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[8] = 0

* **Buat index 8 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

i = 8; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 9; j = 0

Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[9] = 0

* **Buat index 9 berisi 0**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N |
| -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

i = 10; m = 10; j = 0

Karena i < m dan x[i] != x[j] **terpenuhi,** maka j = KMPNext[0] = -1 dan i dan j ditambah 1

sehingga i = 10; j = 0

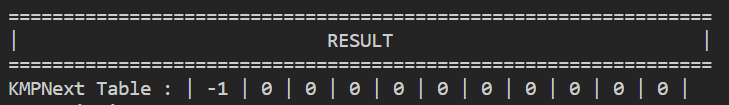
Karena x[i] != x[j], sehingga KMPNext[i] = j => KMPNext[10] = 0

Karena x[i] tidak ada, maka buat tanda -

**HASIL TABEL KMP NEXT**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | N | - |
| -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |  |  |

**BUKTI SAMA DENGAN YANG DI PROGRAM**

****

Langkah selanjutnya adalah melakukan String Matching

1. **TAHAP STRING MATCHING (JIKA DITEMUKAN KATA PADA TEXT)**

Text : JAJOHANAOASHEJOHANESSHNASAJOHANESSHAJOHAJOHANESSHN

Pattern : JOHANESSHN

Note :

* Jika sama akan diberi warna hijau
* Jika berbeda akan diberi warna merah
* Tabel KMPNext berada di atas

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | H | A | J | O | H | A | N | E | S | S | H | N |
| J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index ke 0 telah sama, namun pada index ke 1 tidak sama, sehingga pattern akan digeser sebanyak i – KMPNext[i] = 1 – 0 = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | H | A | J | O | H | A | N | E | S | S | H | N |
|  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama, sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | H | A | J | O | H | A | N | E | S | S | H | N |
|  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4 sama, namun pada index ke 5 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 4 – 0 = 4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 sama, **SEHINGGA DITEMUKAN PADA INDEX KE 13** dan digeser sebanyak i – KMPNext[i] = 10 – 0 = 10

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8, sama, namun pada index ke 9 tidak sama, sehingga digeser sebanyak i – KMPNext[i] = 9 – 0 = 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |

Pada index 0 tidak sama sehingga pattern akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |

Pada index 0, 1 sama, namun pada index 2 tidak sama, sehingga akan digeser sebanyak i – KMPNext[i] = 2 – 0 = 2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |

Pada index 0 sama, namun pada index 1 tidak sama, sehingga akan digeser sebanyak i – KMPNext[i] = 1 – 0 = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |

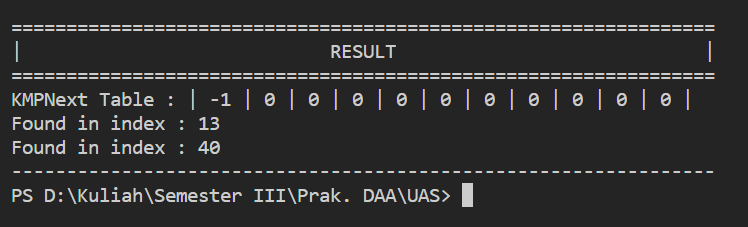
Pada index 0 sama, namun pada index 1 tidak sama, sehingga akan digeser sebanyak i – KMPNext[i] = 0 – (-1) = 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | A | J | O | H | A | N | A | O | A | S | H | E | J | O | H | A | N | E | S | S | H | N | A | S | A | J | O | H | A | N | E | S | S | H | A | J | O | J | A | J | O | H | A | N | E | S | S | H | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 sama, **SEHINGGA DITEMUKAN PADA INDEX KE 40** dan Panjang text sudah habis, sehingga perulangan diberhentikan

**KESIMPULAN : DITEMUKAN 2X KATA JOHANESSHN PADA JAJOHANAOASHEJOHANESSHNASAJOHANESSHAJOHAJOHANESSHN YAITU PADA INDEX KE 13 DAN 40**

**BUKTI PADA PROGRAM :**

****

1. **TAHAP STRING MATCHING (JIKA TIDAK DITEMUKAN KATA PADA TEXT)**

Text : JOHANESSHJOHANESSHJOHANESSHJOHANESSHJOHANESSHJOHAN

Pattern : JOHANESSHN

Note :

* Jika sama akan diberi warna hijau
* Jika berbeda akan diberi warna merah
* Tabel KMPNext berada di atas

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N |
| J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8 sama, namun pada index 9 tidak sama, sehingga digeser sebanyak i – KMPNext[i] = 9 – 0 = 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N |
|  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8 sama, namun pada index 9 tidak sama, sehingga digeser sebanyak i – KMPNext[i] = 9 – 0 = 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8 sama, namun pada index 9 tidak sama, sehingga digeser sebanyak i – KMPNext[i] = 9 – 0 = 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |  |  |  |  |  |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8 sama, namun pada index 9 tidak sama, sehingga digeser sebanyak i – KMPNext[i] = 9 – 0 = 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N | E | S | S | H | N |  |  |  |  |

Pada index 0, 1, 2, 3, 4, 5, 6, 7, 8 sama, namun pada index 9 tidak sama, sehingga digeser sebanyak i – KMPNext[i] = 9 – 0 = 9

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N | E | S | S | H | J | O | H | A | N |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | J | O | H | A | N |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| E | S | S | H | N |

Sudah melewati batas index text, sehingga perulangan diberhentikan

**KESIMPULAN TIDAK DITEMUKAN JOHANESSHN PADA JOHANESSHJOHANESSHJOHANESSHJOHANESSHJOHANESSHJOHAN**

**BUKTI PADA PROGRAM :**

