**TUGAS HASHING**



**Dosen Pengampu :**

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**MATA KULIAH STRUKTUR DATA DAN ALGORITMA**

**UNIVERSITAS PENDIDIKAN GANESHA**

**SINGARAJA**

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1. **PERMASALAHAN**
2. Using the Linear Probing method, insert keys 32, 53, 22, 92, 17, 34, 24, 37, and 56 into a hash table of Tsize = 10
3. Using the Quadratic Probing method, insert keys 0, 15, 16, 20, 30, 25, 26, and 36 into a hash table of Tsize = 10
4. **PENYELESAIAN**

|  |  |
| --- | --- |
| Hash Index | Key |
| 0 | 10 |
| 1 |  |
| 2 | 32 |
| 3 | 53 |
| 4 | 22 |
| 5 | 92 |
| 6 | 34 |
| 7 | 17 |
| 8 | 24 |
| 9 | 37 |

1. **Linear Probing Method**

**Tsize**  = 10

**Keys(k)** = 32, 53, 22, 92, 17, 34, 24, 37, and 56

* h(32) = 2
* h(53) = 3
* h(22) = 2, collision with 32
  + h1 (22) = 3, collision with 53
  + h2 (22) = 4
* h(92) = 2, collision with 32
  + h1 (92) = 3, collision with 53
  + h2 (92) = 4, collision with 22
  + h3 (92) = 5
* h(17) = 7
* h(34) = 4, collision with 22

**Longest Hops : 5**

* + h1 (34) = 5, collision with 92
  + h2 (34) = 6
* h(24) = 4, collision with 22
  + h1 (24) = 5, collision with 92
  + h2 (24) = 6, collision with 34
  + h3 (24) = 7, collision with 17
  + h4 (24) = 8
* h(37) = 7, collision with 17
  + h1 (37) = 8, collision with 24
  + h2 (37) = 9
* h(56) = 6, collision with 34
  + h1 (56) = 7, collision with 17
  + h2 (56) = 8, collision with 24
  + h3 (56) = 9, collision with 37
  + h4 (56) = 0

1. **Quadratic Probing Method**

|  |  |
| --- | --- |
| Hash Index | Key |
| 0 | 0 |
| 1 | 20 |
| 2 | 36 |
| 3 |  |
| 4 | 30 |
| 5 | 15 |
| 6 | 16 |
| 7 | 26 |
| 8 |  |
| 9 | 25 |

**Tsize**  = 10

**Keys(k)** = 0, 15, 16, 20, 30, 25, 26, and 36

* h(0) = 0
* h(15) = 5
* h(16) = 6
* h(20) = 0, collision with 0
  + h1 (20) = 1
* h(30) = 0, collision with 0
  + h1 (30) = 1, collision with 20
  + h2 (30) = 4
* h(25) = 5, collision with 15
  + h1 (25) = 6, collision with 16
  + h2 (25) = 9

**Longest Hops : 5**

* h(26) = 6, collision with 16
  + h1 (26) = 7
* h(36) = 6, collision with 16
  + h1 (36) = 7, collision with 26
  + h2 (36) = 0, collision with 0
  + h1 (36) = 5, collision with 15
  + h1 (36) = 2