**Zettel 3**

Duc

Mohsen

**Aufgabe 3.1**

Annahme: Wir haben N Datensätze

a/ TID mit 10% der Daten umgespeichert wurden

Min = 45 Zugriffe

Max = (N + N\*0.1) Zugriffe

b/DBK

Min = 45 Zugirffe

Max = N Zugriffe

c/B+ Baum mit Höher 3

Min = 45 + 3 Zugriffe

Max = N + 3 Zugriffe

**Aufgabe 3.2**

Run length Encoding

|  |  |  |
| --- | --- | --- |
| Value | Start\_pos | Run\_length |
| 1 | 1 | 2 |
| 5 | 3 | 2 |
| 7 | 5 | 3 |
| 13 | 8 | 1 |
| 20 | 9 | 1 |
| 33 | 10 | 2 |
| 13 | 12 | 1 |
| 23 | 13 | 1 |
| 20 | 14 | 1 |
| 5 | 15 | 1 |

Differential Encoding

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | 1 | 1 | | 1 | 0 | | 5 | 4 | | 5 | 0 | | 5 | 0 | | 7 | 2 | | 7 | 0 | | 7 | 0 | | 13 | 5 | | 13 | 0 | | 20 | 7 | | 20 | 0 | | 23 | 3 | | 33 | 10 | | 33 | 0 | | sortiert | |  |  | | --- | --- | | 1 | 1 | | 1 | 0 | | 5 | 4 | | 5 | 0 | | 7 | 2 | | 7 | 0 | | 7 | 0 | | 13 | 6 | | 20 | 7 | | 33 | 13 | | 33 | 0 | | 13 | -20 | | 23 | 10 | | 20 | -3 | | 5 | -15 | | nicht sortiert |

Bit Vektor Encoding

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | 1 | … | 5 | … | 7 | … | 13 | … | 20 | … | 23 | … | 33 |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 33 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 33 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 20 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |