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## Praktikum 10

Bahasan Pertemuan : HBASE.

1. Bandingkan performa read/write dengan Hive di praktikum modul sebelumnya, manakah yang relative lebih cepat?

Secara umum, HBase memiliki performa yang lebih cepat dalam operasi read dan write data jika dibandingkan dengan Hive. HBase dirancang untuk menyediakan akses langsung ke data dengan model penyimpanan NoSQL yang berbasis kolom. Ini memungkinkan akses langsung ke data dengan memanfaatkan struktur indeks yang dioptimalkan.

2. Buat sebuah tabel UserProfiles dari suatu data sebagai berikut:

| Rowkey    | details     |                  |     | activity   |       |          |
|-----------|-------------|------------------|-----|------------|-------|----------|
|           | location    | name             | age | lastlogin  | posts | follower |
| UserID001 |             | John Smith       | 32  |            | 25    | 500      |
| UserID002 | New York    | Sarah Johnson    | 28  | 2023-05-12 | 50    | 1000     |
| UserID003 | Los Angeles | Michael Anderson | 45  | 2023-05-13 | 10    | 250      |

Dari tabel di atas, apa perintah untuk menampilkan:

- a. Nama user yang berlokasi di New York  
*scan 'tpd\_ns:UserProfiles', {FILTER => SingleColumnValueFilter.new(Bytes.toBytes('details'), Bytes.toBytes('location'), CompareFilter::CompareOp.valueOf('EQUAL'), BinaryComparator.new(Bytes.toBytes('New York')))}*

```
hbase(main):023:0> scan 'tpd_ns:UserProfiles', {FILTER => SingleColumnValueFilter.new(Bytes.toBytes('details'), Bytes.toBytes('location'), CompareFilter::CompareOp.valueOf('EQUAL'), BinaryComparator.new(Bytes.toBytes('New York')))}
ROW
UserID001      column=activity:follower, timestamp=1684734951408, value=500
UserID001      column=activity:posts, timestamp=1684734951375, value=25
UserID001      column=details:age, timestamp=1684734951346, value=32
UserID001      column=details:name, timestamp=1684734951319, value=John Smith
UserID002      column=activity:follower, timestamp=1684734951569, value=1000
UserID002      column=activity:lastlogin, timestamp=1684734951528, value=2023-05-12
UserID002      column=activity:posts, timestamp=1684734951546, value=50
UserID002      column=details:age, timestamp=1684734951511, value=28
UserID002      column=details:location, timestamp=1684734951457, value=New York
UserID002      column=details:name, timestamp=1684734951467, value=Sarah Johnson
2 row(s)
Took 0.0775 seconds
hbase(main):024:0>
```

- b. Nama dan last login user yang melakukan posting lebih dari 20 kali

```
scan 'tpd_ns:UserProfiles', {FILTER => SingleColumnValueFilter.new(Bytes.toBytes('activity'), Bytes.toBytes('posts'), CompareFilter::CompareOp.valueOf('GREATER'), BinaryComparator.new(Bytes.toBytes('20')))}
```

```
hbase(main):024:0> scan 'tpd_ns:UserProfiles', {FILTER => SingleColumnValueFilter.new(Bytes.toBytes('activity'), Bytes.toBytes('posts'), CompareFilter::CompareOp.valueOf('GREATER'), BinaryComparator.new(Bytes.toBytes('20')))}
ROW
UserID001
UserID001
UserID001
UserID001
UserID002
UserID002
UserID002
UserID002
UserID002
UserID002
2 row(s)
Took 0.0152 seconds
hbase(main):025:0>
```

```
COLUMN=CELL
column=activity:follower, timestamp=1684734951408, value=500
column=activity:posts, timestamp=1684734951375, value=25
column=details:age, timestamp=1684734951346, value=32
column=details:name, timestamp=1684734951319, value=John Smith
column=activity:follower, timestamp=1684734951569, value=1000
column=activity:lastlogin, timestamp=1684734951528, value=2023-05-12
column=activity:posts, timestamp=1684734951546, value=50
column=details:age, timestamp=1684734951511, value=28
column=details:location, timestamp=1684734951457, value=New York
column=details:name, timestamp=1684734951487, value=Sarah Johnson
```

### 3. Hasil pekerjaan praktikum berupa dokumentasi:

- a. Screenshot tabel employee dan snapshot yang dibuat pada kegiatan praktikum

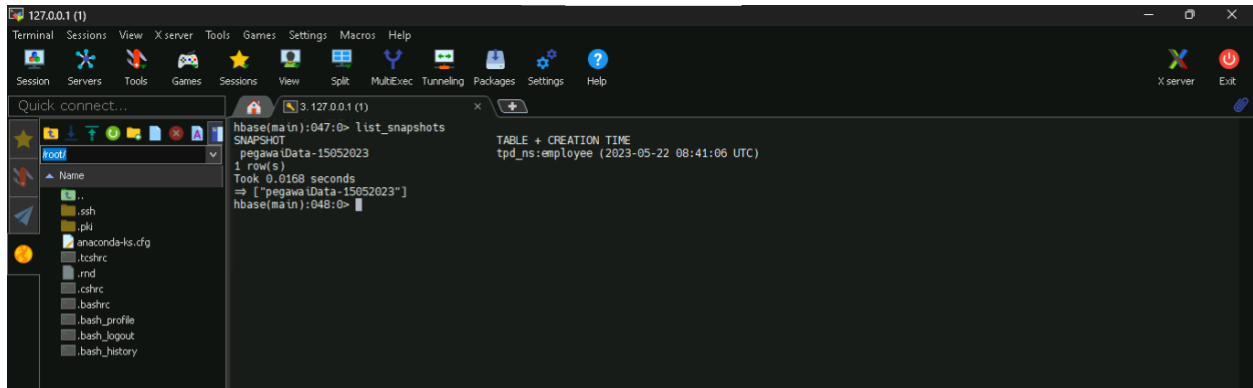
- List table

```
hbase(main):012:0> list
TABLE
ATLAS_ENTITY_AUDIT_EVENTS
atlas_janus
tpd_ns:UserProfiles
tpd_ns:employee
tpd_ns:new_employee
5 row(s)
Took 0.0364 seconds
=> ["ATLAS_ENTITY_AUDIT_EVENTS", "atlas_janus", "tpd_ns:UserProfiles", "tpd_ns:employee", "tpd_ns:new_employee"]
hbase(main):013:0>
```

- Isi tabel employee

```
hbase(main):048:0> scan 'tpd_ns:employee'
COLUMN=CELL
1
column=personal data:city, timestamp=1684744455825, value=bandung
column=personal data:name, timestamp=1684744377958, value=andi
1
column=professional data:designation, timestamp=1684744378902, value=manager
column=professional data:salary, timestamp=1684744378918, value=50000
2
column=personal data:name, timestamp=1684744455089, value=desti
column=professional data:salary, timestamp=1684744455108, value=15000
2 row(s)
Took 0.0466 seconds
hbase(main):049:0>
```

## - List snapshots



## b. Screenshot tabel, perintah, dan hasil query penugasan nomor 2

