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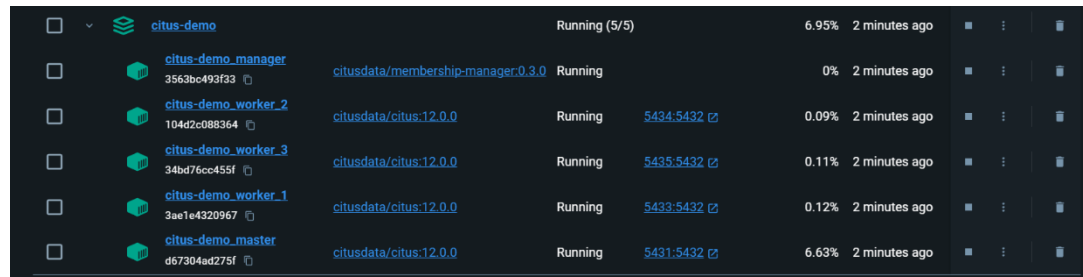
Kelas/Batch : Data Engineering 4

Part 2 – Columnar Database

1. Jalankan citus di computer local dengan menggunakan docker compose

JAWAB :

```
rismanovic@LAPTOP-U6LIFQ61:~/unit2$ cd citus-demo
rismanovic@LAPTOP-U6LIFQ61:~/unit2/citus-demo$ docker compose up -d
WARN[0000] /home/rismanovic/unit2/citus-demo/docker-compose.yml: 'version' is obsolete
[+] Running 6/6
✔ Network citus-demo_postgres-network Created 0.1s
✔ Container citus-demo_master Started 1.1s
✔ Container citus-demo_manager Started 1.6s
✔ Container citus-demo_worker_3 Started 2.4s
✔ Container citus-demo_worker_1 Started 2.4s
✔ Container citus-demo_worker_2 Started 2.4s
rismanovic@LAPTOP-U6LIFQ61:~/unit2/citus-demo$
```



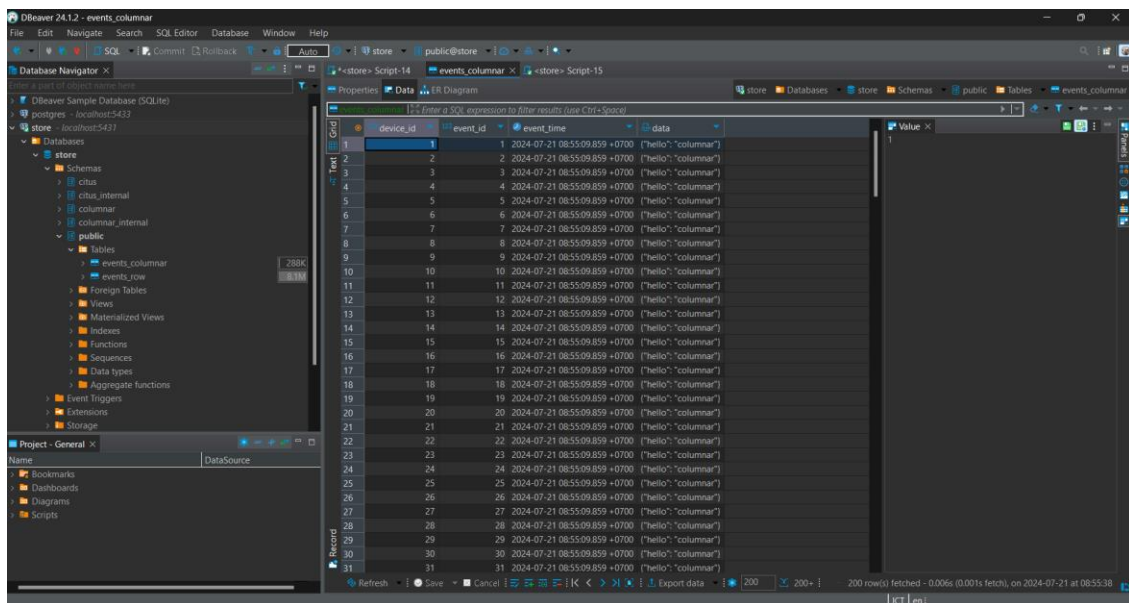
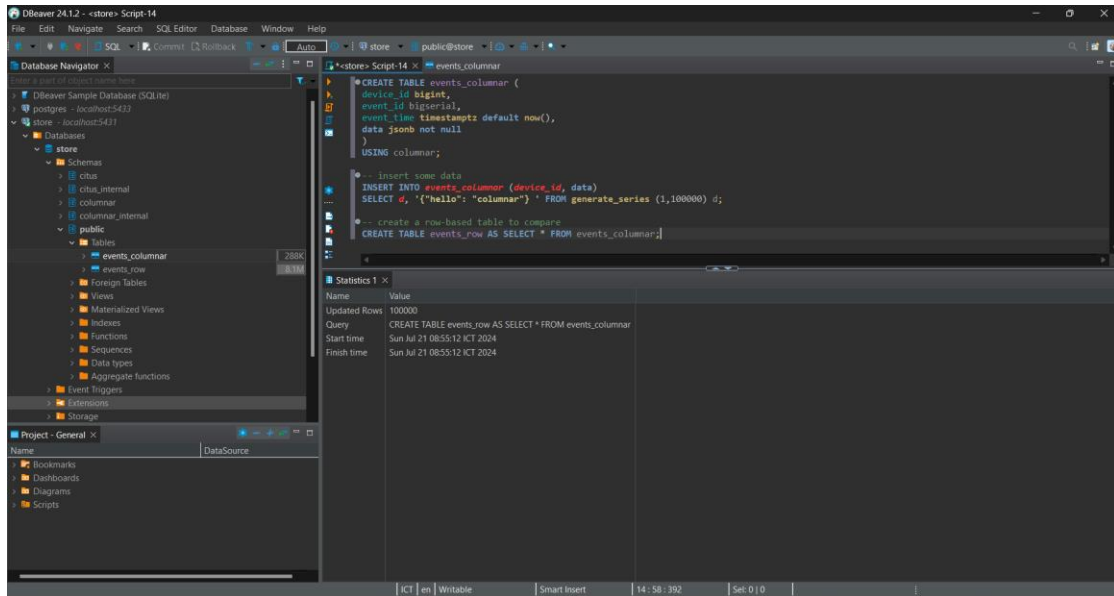
2. Tuliskan perintah untuk membuat tabel columnar dan tabel biasa

```
*<store> Script-14 × events_columnar

CREATE TABLE events_columnar (
  device_id bigint,
  event_id bigserial,
  event_time timestamptz default now(),
  data jsonb not null
)
USING columnar;

-- create a row-based table to compare
CREATE TABLE events_row AS SELECT * FROM events_columnar;
```

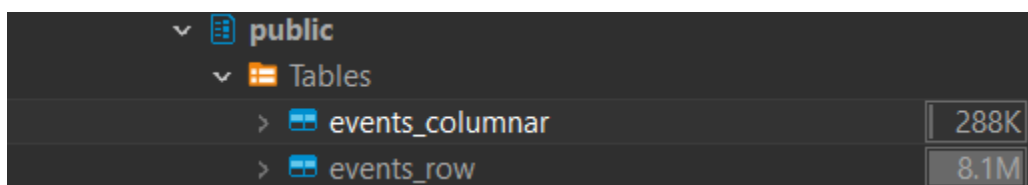
3. Masukkan 100 baris data ke dalam tabel biasa dan tabel columnar



4. Tampilkan perbedaan ukuran antara tabel biasa dan tabel columnar

JAWAB :

Perbedaan ukuran antara tabel biasa dan tabel columnar :



```

○ rismanovic@LAPTOP-U6LIFQGI:~/unit2/citus-demo$ docker exec -it citus-demo_master psql -U postgres -d store
psql (15.3 (Debian 15.3-1.pgdg120+1))
Type "help" for help.

store=# \d+

```

		List of relations					
Schema	Name	Type	Owner	Persistence	Access method	Size	Description
public	citus_schemas	view	postgres	permanent		0 bytes	
public	citus_tables	view	postgres	permanent		0 bytes	
public	events_columnar	table	postgres	permanent	columnar	288 kB	
public	events_columnar_event_id_seq	sequence	postgres	permanent		8192 bytes	
public	events_row	table	postgres	permanent	heap	8288 kB	

```

(5 rows)

```

5. Tuliskan kesimpulannya

JAWAB :

Tabel biasa memiliki ukuran yang jauh lebih besar daripada tabel columnar dikarenakan tabel biasa menyimpan data pada baris (row) sedangkan tabel columnar memiliki ukuran data yang kecil karena data disimpan pada kolom (columnar)