

MANAJEMEN BASIS DATA CLIENT SERVER

28/11/2024

NAMA: NURUL RIZKINA KALSUM BATUBARA

NIM: 2205181072

KELAS: TRPL-5C

Optimasi Query dengan Indeks dan EXPLAIN

Tabel rooms

- Indeks pada kolom type untuk mempercepat pencarian berdasarkan tipe kamar

```
✓ MySQL returned an empty result set (i.e. zero rows)

CREATE INDEX idx_room_type ON rooms (type);

[ Edit inline ] [ Edit ] [ Create PHP code ]
```

- Sebelum Indexing:

Your SQL query has been executed successfully.

```
EXPLAIN SELECT * FROM rooms WHERE type = 'Deluxe';
```

[Edit inline] [Edit] [Skip Explain SQL] [Analyze Explain at mariadb.org] [Create PHP code]

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	rooms	NULL	ALL	NULL	NULL	NULL	NULL	20	10.00	Using where

- Setelah indexing:

Your SQL query has been executed successfully.

```
EXPLAIN SELECT * FROM rooms WHERE type = 'Deluxe';
```

[Edit inline] [Edit] [Skip Explain SQL] [Analyze Explain at mariadb.org] [Create PHP code]

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	rooms	NULL	ref	idx_room_type	idx_room_type	203	const	1	100.00	NULL

Table customer

- Indeks pada kolom email untuk mempercepat pencarian berdasarkan email customer

```
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0000 seconds.)

CREATE INDEX idx_customer_email ON customers (email);

[ Edit inline ] [ Edit ] [ Create PHP code ]
```

- Sebelum Indexing:

```
Your SQL query has been executed successfully.

EXPLAIN SELECT * FROM customers WHERE email = 'kiki@gmail.com';

[ Edit inline ] [ Edit ] [ Skip Explain SQL ] [ Analyze Explain at mariadb.org ] [ Create PHP code ]
```

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	customers	NULL	ALL	NULL	NULL	NULL	NULL	10	10.00	Using where

- Setelah indexing:

```
Your SQL query has been executed successfully.

EXPLAIN SELECT * FROM customers WHERE email = 'kiki@gmail.com';

[ Edit inline ] [ Edit ] [ Skip Explain SQL ] [ Analyze Explain at mariadb.org ] [ Create PHP code ]
```

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	customers	NULL	ref	idx_customer_email	idx_customer_email	403	const	1	100.00	NULL

Tabel reservations

- Indeks pada kolom check_in dan check_out untuk pencarian berdasarkan rentang waktu

```
✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0631 seconds.)

CREATE INDEX idx_reservation_checkin_checkout ON reservations (check_in, check_out);

[ Edit inline ] [ Edit ] [ Create PHP code ]
```

- Sebelum Indexing:

```
Your SQL query has been executed successfully.

EXPLAIN SELECT * FROM reservations WHERE check_in >= '2024-01-01' AND check_out <= '2024-01-15';

[ Edit inline ] [ Edit ] [ Skip Explain SQL ] [ Analyze Explain at mariadb.org ] [ Create PHP code ]
```

- Setelah Indexing:

Your SQL query has been executed successfully.

```
EXPLAIN SELECT * FROM reservations WHERE check_in >= '2024-01-01' AND check_out <= '2024-01-15';
```

[Edit inline] [Edit] [Skip Explain SQL] [Analyze Explain at mariadb.org] [Create PHP code]

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	reservations	NULL	ALL	idx_reservation_checkin_checkout	NULL	NULL	NULL	10	33.33	Using where

Tabel payments

- Indeks pada kolom reservation_id untuk mempercepat pencarian pembayaran berdasarkan ID reservasi

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0265 seconds.)

```
CREATE INDEX idx_payment_reservation_id ON payments (reservation_id);
```

[Edit inline] [Edit] [Create PHP code]

- Sebelum Indexing:

Your SQL query has been executed successfully.

```
EXPLAIN SELECT * FROM payments WHERE reservation_id = 1;
```

[Edit inline] [Edit] [Skip Explain SQL] [Analyze Explain at mariadb.org] [Create PHP code]

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	payments	NULL	ref	reservation_id	reservation_id	5	const	1	100.00	NULL

- Setelah indexing:

Your SQL query has been executed successfully.

```
EXPLAIN SELECT * FROM payments WHERE reservation_id = 1;
```

[Edit inline] [Edit] [Skip Explain SQL] [Analyze Explain at mariadb.org] [Create PHP code]

Extra options

id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
1	SIMPLE	payments	NULL	ref	idx_payment_reservation_id	idx_payment_reservation_id	5	const	1	100.00	NULL

Link Database:

<https://drive.google.com/file/d/14L3W14-Va1YQsuo1XwnWD7fq07ZuWnIA/view?usp=sharing>