

Referensi Cepat MySQL

Database, tabel, CRUD, join, indeks, pengguna

Koneksi

Command Line

```
mysql -u root -p
mysql -u user -p -h 127.0.0.1 -P 3306
mysql -u user -p mydb < dump.sql
```

Connection String

```
mysql://user:password@host:3306/dbname
mysql -u user -p -e "SELECT VERSION();"
```

Perintah Status

```
STATUS;
SHOW VARIABLES LIKE 'port';
SHOW PROCESSLIST;
```

Database & Tabel

Operasi Database

```
CREATE DATABASE mydb CHARACTER SET utf8mb4;
SHOW DATABASES;
USE mydb;
DROP DATABASE mydb;
```

Operasi Tabel

```
CREATE TABLE users (
  id INT AUTO_INCREMENT PRIMARY KEY,
  name VARCHAR(100) NOT NULL,
  email VARCHAR(255) UNIQUE,
  created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);
```

Info Tabel

```
SHOW TABLES;
DESCRIBE users;
SHOW CREATE TABLE users;
```

Ubah Tabel

```
ALTER TABLE users ADD COLUMN age INT;
ALTER TABLE users MODIFY COLUMN name VARCHAR(200);
ALTER TABLE users DROP COLUMN age;
ALTER TABLE users RENAME TO customers;
```

Tipe Data

Numerik

INT	Integer 4-byte (-2M hingga 2M)
BIGINT	Integer 8-byte
DECIMAL(p, s)	Numerik tepat (mis. DECIMAL(10,2))
FLOAT / DOUBLE	Bilangan pecahan perkiraan
BOOLEAN	Alias untuk TINYINT(1)

String

VARCHAR(n)	String panjang variabel hingga n karakter
TEXT	Teks hingga 65 KB
MEDIUMTEXT	Teks hingga 16 MB
CHAR(n)	String panjang tetap, diisi padding
ENUM('a', 'b')	Satu nilai dari kumpulan yang ditentukan

Tanggal & Waktu

DATE	YYYY-MM-DD
DATETIME	YYYY-MM-DD HH:MM:SS
TIMESTAMP	Datetime yang disimpan dalam UTC
TIME	HH:MM:SS
JSON	Tipe dokumen JSON native

CRUD

Insert

```
INSERT INTO users (name, email)
VALUES ('Alice', 'alice@example.com');

INSERT INTO users (name, email) VALUES
('Bob', 'bob@example.com'),
('Carol', 'carol@example.com');
```

Select

```
SELECT * FROM users WHERE id = 1;
SELECT name, email FROM users
ORDER BY name LIMIT 10 OFFSET 20;
```

Update

```
UPDATE users SET email = 'new@example.com'
WHERE id = 1;
UPDATE users SET active = 0
WHERE last_login < '2025-01-01';
```

Delete

```
DELETE FROM users WHERE id = 1;
TRUNCATE TABLE users; -- fast, resets AUTO_INCREMENT
```

Upsert

```
INSERT INTO users (id, name, email)
VALUES (1, 'Alice', 'a@example.com')
ON DUPLICATE KEY UPDATE
name = VALUES(name), email = VALUES(email);
```

Join

Tipe Join

INNER JOIN	Baris yang cocok di kedua tabel
LEFT JOIN	Semua baris kiri + yang cocok di kanan
RIGHT JOIN	Semua baris kanan + yang cocok di kiri
CROSS JOIN	Produk kartesian
SELF JOIN	Tabel bergabung dengan dirinya sendiri

Contoh Join

```
SELECT u.name, o.total
FROM users u
INNER JOIN orders o ON u.id = o.user_id;

SELECT e.name, m.name AS manager
FROM employees e
LEFT JOIN employees m ON e.manager_id = m.id;
```

Indeks

Buat & Hapus

```
CREATE INDEX idx_name ON users(name);
CREATE UNIQUE INDEX idx_email ON users(email);
CREATE INDEX idx_composite
  ON orders(user_id, created_at);
DROP INDEX idx_name ON users;
```

Indeks Fulltext

```
ALTER TABLE posts ADD FULLTEXT(title, body);
SELECT * FROM posts
WHERE MATCH(title, body) AGAINST('mysql');
```

Info Indeks

```
SHOW INDEX FROM users;
EXPLAIN SELECT * FROM users WHERE name = 'Alice';
```

Fungsi

Fungsi String

CONCAT(a, b)	Gabungkan string
SUBSTRING(s, pos, len)	Ekstrak substring
UPPER(s) / LOWER(s)	Ubah huruf
TRIM(s)	Hapus spasi di awal/akhir
LENGTH(s)	Panjang string dalam byte
REPLACE(s, from, to)	Ganti kemunculan

Fungsi Tanggal

NOW()	Datetime saat ini
CURDATE()	Tanggal saat ini
DATE_ADD(d, INTERVAL n DAY)	Tambah interval ke tanggal
DATEDIFF(d1, d2)	Selisih dalam hari
DATE_FORMAT(d, fmt)	Format tanggal (mis. '%Y-%m-%d')

Fungsi Agregasi

```
SELECT COUNT(*), AVG(price), SUM(qty),
  MIN(price), MAX(price)
FROM products
GROUP BY category HAVING COUNT(*) > 5;
```

Pengguna & Izin

Manajemen Pengguna

```
CREATE USER 'app'@'localhost'
IDENTIFIED BY 'secret';
ALTER USER 'app'@'localhost'
IDENTIFIED BY 'newsecret';
DROP USER 'app'@'localhost';
```

Grant

```
GRANT ALL ON mydb.* TO 'app'@'localhost';
GRANT SELECT, INSERT ON mydb.users
TO 'reader'@'%';
REVOKE INSERT ON mydb.users
FROM 'reader'@'%';
FLUSH PRIVILEGES;
```

Lihat Izin

```
SHOW GRANTS FOR 'app'@'localhost';
SELECT user, host FROM mysql.user;
```

Backup & Restore

mysqldump

```
mysqldump -u root -p mydb > backup.sql
mysqldump -u root -p --all-databases > all.sql
mysqldump -u root -p mydb users > users.sql
```

Restore

```
mysql -u root -p mydb < backup.sql
mysql -u root -p -e "SOURCE /path/backup.sql"
```

Binary Log

```
SHOW BINARY LOGS;
SHOW BINLOG EVENTS IN 'binlog.000001';
mysqlbinlog binlog.000001 | mysql -u root -p
```

Pola Umum

Pagination

```
SELECT * FROM users
ORDER BY id LIMIT 20 OFFSET 40; -- page 3
```

Referensi Cepat MySQL

Transaksi

```
START TRANSACTION;
UPDATE accounts SET balance = balance - 100
WHERE id = 1;
UPDATE accounts SET balance = balance + 100
WHERE id = 2;
COMMIT; -- or ROLLBACK;
```

Insert Kondisional

```
INSERT IGNORE INTO users (email, name)
VALUES ('a@ex.com', 'Alice');
-- skips if email already exists (UNIQUE)
```

Variabel & Prepared Statement

```
SET @name = 'Alice';
PREPARE stmt FROM
'SELECT * FROM users WHERE name = ?';
EXECUTE stmt USING @name;
DEALLOCATE PREPARE stmt;
```