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Session 3: Table Operations and Transactions

> 💡 Course Outline:
>
>   1. Transaction
>   2. Alter Table
>   3. Update Query
>   4. Delete Query
>   5. Review sebelum quiz 🤩

> ❗ Nanti quiz yang dinilai adalah **QUERY** nya

▼ Transaction

```
🔒  BEGIN;

    COMMIT;

    ROLLBACK;
```

```
BEGIN; #untuk memulai transaction

#lakukan query DML (DDL autocommit)
UPDATE <Table> SET <Column> = <VALUE>; #contoh query DML

SELECT * FROM <Table>; #buat lihat perubahannya

ROLLBACK; / COMMIT; #buat undo/confirm perubahannya
```

▼ Alter Table

```
🔒  ALTER TABLE;

    ALTER OPTIONS;
```

Contoh Query Alter Table (1 alter):

```
ALTER TABLE <Table>;
ADD <Column> <Data Type>; #contoh alter options
```

Contoh Query Alter Table (2 Alter atau lebih):

```
ALTER TABLE <Table>;
ADD <Column> <Data Type>; #contoh alter options

ALTER TABLE <Table>;
DROP <Column>; #contoh alter options
```

#dst

▼ ADD COLUMN

```
ALTER TABLE users;
ADD Age INT; #contoh alter options

#kalau add 2 column atau lebih

ALTER TABLE users;
ADD Name VARCHAR(255),
ADD Age INT;
```

▼ ADD CONSTRAINT

```
ALTER TABLE <Table>;

#jenis jenis constraint
ADD CONSTRAINT <Constraint Name> UNIQUE (<Column>); #unique con
ADD CONSTRAINT <Constraint Name> CHECK (<Condition>); #check con
MODIFY <Column> <Datatype> NOT NULL; #not null constraint
ADD CONSTRAINT <Constraint Name>  PRIMARY KEY (<Column>); #prim
ADD CONSTRAINT <Constraint Name> FOREIGN KEY (<Column>)
REFERENCES <Refrence Table>(<Column>); #foreign key constraint

#contoh
ALTER TABLE users
ADD CONSTRAINT check_age CHECK (age >= 0 AND age <= 120);
```

‼️ REGEXP Symbols (yang biasanya dipakai)

- ^ : permulaan string

- $: akhir dari string

- . : karakter apapun

- [0-9] : digit apapun

- [a-z] : huruf apapun (bukan kapital)

- [^a-c : semua karakter kecuali a, b dan c

- + : 1 atau lebih dari sebelumnya

- {n} : berapa kali dipanggil

Contoh pemakaian:

'^SF[0-9]{2}$' → SF12 (angka berapapun bisa yang penting jumlahnya)

'^[0-9]+$' → Isi target columnya hanya angka

▼ RENAME COLUMN

```
ALTER TABLE <Table>;
CHANGE <Old Column Name> <New Column Name> <Datatype>;
```

▼ CHANGE COLUMN DATATYPE

```
ALTER TABLE <Table>;
MODIFY <Column> <New Datatype>;
```

▼ DROP COLUMN

```
ALTER TABLE <Table>;
DROP COLUMN <Column>;
```

▼ DROP CONSTRAINT

```
ALTER TABLE <Table>;

#jenis jenis drop
DROP PRIMARY KEY; #drop primary key
DROP FOREIGN KEY <Constraint Name>; #drop foreign key
DROP CHECK <Constraint Name>; #drop constraint
DROP INDEX <Column>; #drop unique
```

▼ Update Query

```
UPDATE <Table1>
[JOIN <Table2> ON <Table1> = <Table2>]
SET <Column1> = <VALUE1>, <Column2> = <VALUE2>
[WHERE <Column> = <VALUE>]
```

▼ Delete Query

```
DELETE FROM <Table1>
[WHERE <Column> = <VALUE>]

#delete pakai join

DELETE <Table1> [, <Table2>]
[JOIN <Table2> ON <Table1> = <Table2>]
FROM <Table1>
[WHERE <Column> = <VALUE>]
```
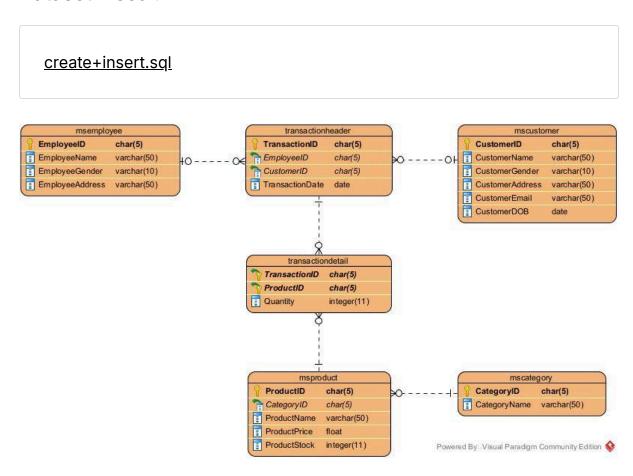
▼ Review

Materia and criteria:

Kriteria		Nilai
Criteria		*Score*
• **Create Table**		20
• **Insert Data**		20
• **Select Data**		40
• **Update/Delete Data**		20

Dataset + soal:

create+insert.sql

Soal review (Create + Insert + Select):

1. Create a Table named 'msrole' with the following description: (REGEXP)

   • RoleID, CHAR 5, Primary Key, RoleID must start with 'RL' followed by 3 numbers

- EmployeeID, CHAR 5, must not be null, refrenced from msemployee table

- RoleName, VARCHAR 50, must not be null

2. Insert this data into 'msemployee' table (INSERT)

- EmployeeID: EM016

- EmployeeName: Maxi Junior

- EmployeeGender: Male

- EmployeeAddress: 610 Binus University

3. Display EmployeeName and Transaction date for every employee that is male and have a transaction in March (SELECT, LIKE, MONTH)

Soal untuk sesi hari ini:

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