You've got the power

INTRODUCTION TO SQL SERVER

SQL

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CRUD operations

CREATE

- Databases, Tables or views

- Users, permissions, and security groups

READ

- Example: `SELECT` statements

UPDATE

- Amend existing database records

DELETE

CREATE

- `CREATE TABLE` `unique table name`

- (column name, data type, size)

```
CREATE TABLE test_table(
    test_date date,
    test_name varchar(20),
    test_int int
)
```

A few considerations when creating a table

- Table and column names

- Type of data each column will store

- Size or amount of data stored in the column

Data types

Dates:

- date (`YYYY-MM-DD`), datetime (`YYYY-MM-DD hh:mm:ss`)

- time

Numeric:

- integer, decimal, float

- bit (`1` = `TRUE` , `0` = `FALSE` . Also accepts `NULL` values)

Strings:

- `char` , `varchar` , `nvarchar`

Let's create some tables!

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INSERT

```
INSERT INTO table_name
```

```
INSERT INTO table_name (col1, col2, col3)
```

```
INSERT INTO table_name (col1, col2, col3)
VALUES
  ('value1', 'value2', value3)
```

INSERT SELECT

```sql
INSERT INTO table_name (col1, col2, col3)
SELECT
  column1,
  column2,
  column3
FROM other_table
WHERE
  -- conditions apply
```

- Don't use `SELECT *`

- Be specific in case table structure changes

UPDATE

```
UPDATE table
SET column = value
WHERE
  -- Condition(s);
```

- Don't forget the `WHERE` clause!

```
UPDATE table
SET
  column1 = value1,
  column2 = value2
WHERE
  -- Condition(s);
```

DELETE

```
DELETE
FROM table
WHERE
  -- Conditions
```

- Test beforehand!

```
TRUNCATE TABLE table_name
```

- Clears the entire table at once

Let's INSERT, UPDATE, and DELETE!

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Declare yourself

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Variables

```
SELECT *
FROM artist
WHERE name = 'AC/DC';
```

Now change the query for another artist:

```
SELECT *
FROM artist
WHERE name = 'U2';
```

To avoid repetition, create a variable:

```
SELECT *
FROM artist
WHERE name = @my_artist;
```

DECLARE

```
DECLARE @
```

Integer variable:

```
DECLARE @test_int INT
```

Varchar variable:

```
DECLARE @my_artist VARCHAR(100)
```

SET

Integer variable:

```
DECLARE @test_int INT


SET @test_int = 5
```

Assign value to `@my_artist` :

```
DECLARE @my_artist  varchar(100)


SET @my_artist = 'AC/DC'
```

```sql
DECLARE @my_artist varchar(100)
DECLARE @my_album varchar(300);


SET @my_artist = 'AC/DC'
SET @my_album  = 'Let There Be Rock' ;


SELECT --
FROM --
WHERE artist = @my_artist
AND album = @my_album;
```

```sql
DECLARE @my_artist varchar(100)
DECLARE @my_album varchar(300);


SET @my_artist = 'U2'
SET @my_album  = 'Pop' ;


SELECT --
FROM --
WHERE artist = @my_artist
AND album = @my_album;
```

Temporary tables

```sql
SELECT
  col1,
  col2,
  col3 INTO #my_temp_table
FROM my_existing_table
WHERE
  -- Conditions
```

- `#my_temp_table` exists until connection or session ends

```sql
-- Remove table manually
DROP TABLE #my_temp_table
```

Let's declare some variables!

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Congratulations!

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What we learned...

- Selecting: `SELECT`

- Ordering: `ORDER BY`

- Filtering: `WHERE` and `HAVING`

- Aggregating: `SUM`, `COUNT`, `MIN`, `MAX` and `AVG`

- Text manipulation: `LEFT`, `RIGHT`, `LEN` and `SUBSTRING`

What we learned (II)...

- `GROUP BY`

- `INNER JOIN` , `LEFT JOIN` , `RIGHT JOIN`

- `UNION` and `UNION ALL`

- Create, Read, Update and Delete (CRUD)

- Variables

- Temporary tables

Next Steps

- Intermediate SQL Server

- Joining Data in SQL

Congratulations!

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