

Lesson 6 - Introduction to SQL

From Lesson 1 recall,

- **What is a Database?**

Storage of data in tabular format (rows and columns). Used to store data for websites and applications such as videos, images, usernames, passwords. Similar to Excel. Each Column has a title and data type. And most of the times each table has a column that serves as a primary key.

- **What is SQL?**

Structured Query Language is used to access and manipulate a database. There are different variations of SQL, but we will stick to the SQL Server by Microsoft.

Example Table

id	first_name	last_name	country
1	Talha	Salman	Pakistan
2	Amad	Kazmi	Denmark
3	Talha	Salman	Turkey

Create a database

```
CREATE DATABASE talha_db;
```

If we try to create a database that is already present, an error will occur

Database 'talha_db' already exists. Choose a different database name.

Create a table

```
CREATE TABLE contacts (  
    first_name VARCHAR,  
    last_name VARCHAR,  
    phone_number int  
);
```

If we try to create a table that is already present, an error will occur

There is already an object named 'contacts' in the database.

Drop table

```
DROP TABLE contacts;
```

If the table does not exist, error will occur

Cannot drop the table 'contacts', because it does not exist or you do not have permission.

Drop database

```
DROP DATABASE talha_db;
```

If it is in use, following error occurs

Cannot drop database "talha_db" because it is currently in use.

If it does not exist, then

Cannot drop the database 'talha_db', because it does not exist or you do not have permission.

Insert data into a table

```
INSERT INTO contacts VALUES('Talha', 'Salman', 923065094501);  
  
INSERT INTO contacts VALUES('Amad', 'Kazmi', 4528343545);
```

```
INSERT INTO contacts(first_name, phone_number)
VALUES('Fasih', 923065012365);
```

(1 row affected)

(1 row affected)

(1 row affected)

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Selecting data

Select all columns.

```
SELECT * FROM contacts;
```

Select single column.

```
SELECT first_name FROM contacts;
```

Select multiple columns.

```
SELECT first_name, phone_number FROM contacts;
```