

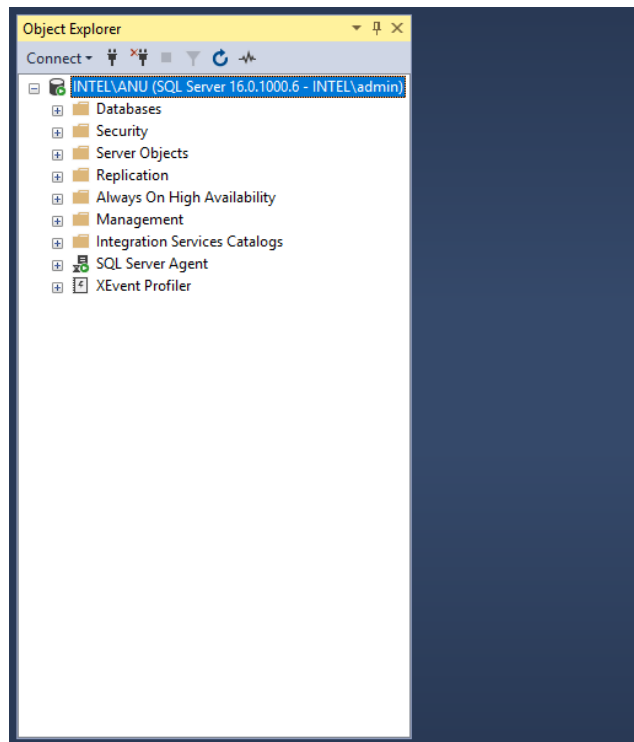
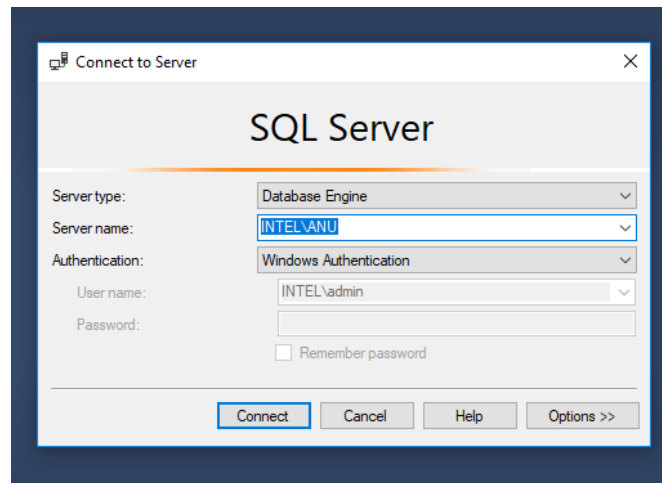
# Assignment 1 - Introduction to SQL

## Problem Statement:

Consider yourself to be Sam who is a student at a prestigious university. You have enrolled for the SQL course and it is your first semester.

## Tasks to be performed:

1. Install MS SQL Server



2. Give the difference between Char and Varchar data type.

Sl. No	Char Data Type	Varchar Data Type
1.	The space allocated to the char data type is same irrespective of their length.	Varchar data type allocates variable spaces according to the word length.
2.	It stores the character strings of fixed length.	It stores the character strings of variable length.
3.	Example: gender char(1)	Example: name varchar(20)

3. Explain the types of SQL Commands.

SQL commands are of 5 sections. They are

#### 1) DDL – Data Definition Language

It deals with the structure of the table. It's basically like adding a column, removing the column, deleting the table, rename the table name.

a) Create

```
-- Create Command - Creates a table
create table Employee(
    Empid int,
    FirstName varchar(20),
    LastName varchar(30),
    City char(255),
    Department varchar(30),
    DateofJoining date,
    Salary decimal(8,2)
);
```

b) Alter

```
-- Alter Command - used to modify the database objects in the table
1) Alter
-- Alter alter command
alter table Employee alter column Salary int
alter table Employee alter column FirstName varchar(30)
2) Add
-- Alter Add Command
alter table Employee add Gender text
3) Rename
-- Alter Rename Command
sp_rename 'Employee.Gender', 'Gen'
4) Drop
-- Alter Drop Command
alter table Employee drop column Gen
```

c) Rename

```
-- Rename - used to rename the table
sp_rename Employee, Emp_tbl
select * from Employee
select * from Emp_tbl
```

d) Drop

```
-- Drop Command - used to drop the table
drop table Emp_tbl
```

e) Truncate

```
-- Truncate Command - removes the data from the table
truncate table Employee
```

## 2) DML – Data Manipulation Language

When accessing the data inside the table, DML is used.

a) Insert

```
-- Insert Command - inserts values into the table
insert into Employee values
(102, 'Rini', 'Roy', 'Chennai', 'Biomedical', '2020-08-07', 25000.50),
(103, 'Jeena', 'Mathew', 'Mumbai', 'Data Science', '2021-12-03', 50000.50),
(104, 'Neha', 'Dupiya', 'Banglore', 'Computer Science', '2022-12-05', 45000.50),
(105, 'Reema', 'Khanna', 'TVM', 'Communications', '2023-06-19', 15000.50)
insert into Employee(Empid, FirstName, Department) values (106, 'Hardiya', 'IT')
insert into Employee(Empid, FirstName, Department) values (107, 'Chippy', 'IT'),
(108, '', 'DBA')
```

b) Update

```
-- Update Command - used to update the data in the table
update Employee set City = 'Ernakulam' where FirstName = 'Reema'
```

c) Delete

```
-- Delete Command - deletes records from table
delete from Employee where FirstName = 'Chippy'
```

## 3) DRL – Data Retrieval Language

It is the most important command that is used to extract the data.

a) Select

```
select * from Employee
```

## 4) TCL – Transaction Control Language

Whatever query is written, is TCL

a) Commit – commit, in order to save the particular transaction.

b) Rollback – undo the transaction.

c) Savepoint – checkpoints between the transaction's that are created.

## DCL – Data Control Language

It's basically used by DBA.

a) Grant – grant permission's or privilege's to certain set of users.

b) Revoke – remove the permissions or privileges from the users

4. Explain NVarchar and Nchar.

Both Nchar and Nvarchar are similar to char and varchar data types but, they can use only english data, whereas regional data can be used in both Nchar and NVarchar data type.