

Date: \_\_\_\_\_  
No: \_\_\_\_\_

SQL:

Cmd: SQLcmd is " " <sup>for your device's name</sup>  
" use "Database Name"  
" go  
" write any queries  
" go

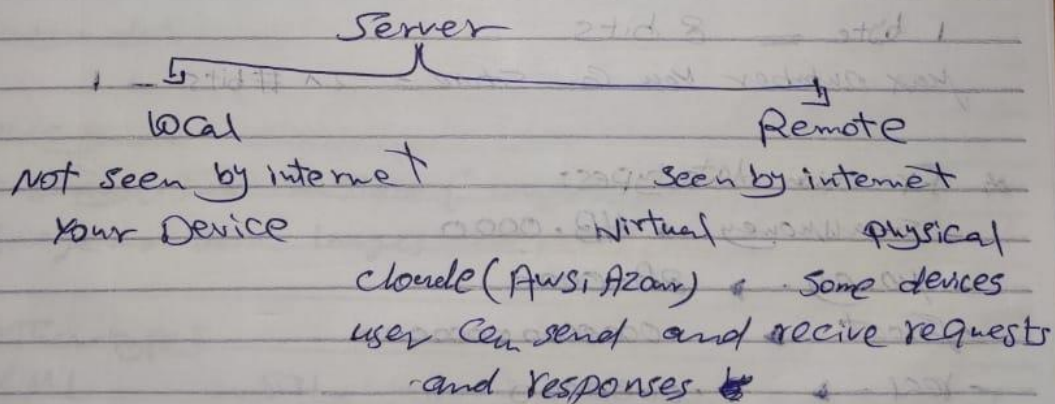
\* This is an old way to run SQL queries.

SQL Server:

- Authentication types:

- Windows authentication → Connect using your own device
- SQL Server authentication → Connect using Account given by your manager and you will have some permissions.

Note: if in the query file there is a "\*" beside the file name it means that this file is not saved yet.



\* Remote Desktop Connection

Connect any device using its IP address only if we have the permission to connect this device. ex if u are working on a company and you want to access your computer at the company from your home if you have the permission you will be able to do it.

\* Single Comment  $\rightarrow$  CTRL K + CTRL C

\* Uncomment single  $\rightarrow$  CTRL K + CTRL U

\* Data Types:\* Numeric data types:

- bit  $\rightarrow$  boolean 0 (False), 1 (True) unsigned
- tinyint  $\rightarrow$  1 Byte  $\rightarrow$  -127 : 127  $\rightarrow$  0 : 255
- smallint  $\rightarrow$  2 Byte  $\rightarrow$  -32768 : 32768  $\rightarrow$  0 : 65535
- int  $\rightarrow$  4 Byte
- bigint  $\rightarrow$  8 Byte

1 byte = 8 bits

max number you can store =  $2^{\text{#bits}} - 1$

\* Fraction data types:

- smallmoney  $\rightarrow$  4B.0000
- money  $\rightarrow$  8B.0000
- float  $\rightarrow$  .0000000000000000
- real  $\rightarrow$  .00000000



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- dec or decimal  $\rightarrow$  dec(5,2)  $\rightarrow$  total length  $\rightarrow$  # after point
- dec(5,2)  $\rightarrow$  123.45 ✓
- dec(5)  $\rightarrow$  12345 ✓

#### \* String data types:

- Char(n)  $\rightarrow$  Fixed length character (must = n)  $\rightarrow$  only English
- varchar(n)  $\rightarrow$  Variable length character (not n)
- nchar(n)  $\rightarrow$  like char but with unicode  $\rightarrow$  can store Arabic
- nvarchar(n)  $\rightarrow$  like varchar
- nvarchar(max)  $\rightarrow$  up to 2GB [can store Arabic]
- varchar(max)  $\rightarrow$  up to 2GB [can not store ar]

#### \* Datetime data types:

Format

- Date  $\rightarrow$  MM/dd/yyyy [depends on the server]
- time  $\rightarrow$  hh:mm:ss.123  $\rightarrow$  Default 3 for milliseconds
- time(5)  $\rightarrow$  5 digits for milliseconds
- smalldatetime  $\rightarrow$  MM/dd/yyyy hh:mm:ss
- datetime  $\rightarrow$  MM/dd/yyyy hh:mm:ss.123  $\rightarrow$  milliseconds
- datetime2(n)  $\rightarrow$  # of milliseconds  $\rightarrow$  الوقت بـ دقة
- datetimeoffset  $\rightarrow$  11/23/2020 10:30 + 2:00

#### \* Binary data types:

- Binary  $\rightarrow$  011011
- VarBinary(n)  $\rightarrow$  Can store [images, file, PDF] not preferred
- Image  $\rightarrow$  store images not preferred

#### \* Other types

##### - XML

- SQL Variant  $\rightarrow$  can store any types of data  
[int, decimal, nvarchar, datetime, BIT]

Variables:

2 types

Global

local

Exist by default

Created by developer

①②

③

select @@SERVERNAME

select @@version

Declare @age int

select @age

just be executed together

Building database using UI Called wizard

Database files:

mdf → main database file: contains all the information in a database like data of creation, user who created it, tables, columns, data types of columns [metadata]

ldf → log database file: records all the transactions and changes to the database except TRUNCATE table statement [backup]