

Date :
No:

SESSION 4 → SQL Server

→ SQL Server (Local & Remote)

- * Server → (Global static IP) Permissions
↳ Can any user access

* Comment

— single line comment (زوكيل)
/* Multiline */ Ctrl + R, Ctrl + U

- * Data Types → Type (نوع)
↓ Size (حجم)

① numeric DataType

→ bit (Boolean Values) 0, 1

→ tinyint (1 byte = 8 bits) 127
Sign 11 bits و احتمال رقم واحد

→ smallint (2 byte)

→ int (4 byte)

→ bigint (8 byte)

② Fraction DataType

→ smallmoney 4B.0000 (4 # after Point)
byte

→ money 8B.0000 (8 byte, 4)

→ real .0000000 (7 # after Point)

→ float (15 # after Point)

→ dec (decimal is DI & Validation)

* float not flexible, so take space in memory, you may not need

Date: _____

No.:

unicode (عالي الجودة) (اللغة الروسية)

Ahmed, 181

* Var (dynamic VariableType)

↳ Variable: name of Memory

location is called variable

* $\text{dec}(5, 2) = 11100_2$ (عند كتابة أرقام اثنية في المجموعات، العدد 5 يكتب كـ 101، العدد 2 يكتب كـ 010)

String Data Type

- ① Char (10) Fixed length
Gives fixed and small length
 - ② VarChar (10) Variable length
10 is Max length
 - ③ nChar (10) Fix length + unicode
 - ④ nVarChar (10) Variable length + unicode
 - ⑤ nVarChar (Max) Up to 2GB
→ Max is ~~adjustable~~
 - ⑥ VarChar (Max)

[ex]

Ahmed

Char(10) Ali

10

VarChar(10) Ali

3

Date : Truncation
No. : TRANSACTION (DDL, DML)

* If you not specific length of Data type Take default size
Text → Char(1) → : char take 1 byte

* Type of Foreign Key must same type of Primary Key

* SQL not sensitive
+ TABLES Same Table Same TABLE

FName Varchar(20) default 'Ahmed'
Is null not null if default value is null
default value is null : Is it allowed
(SQL below Value is allowed)

ID int PrimaryKey identity (1,1)
dynamic ID is used & can't be used Identity
Set Identity (1,1)
First Value ↳ Increment by 10

[Address] Varchar(50)

Name (All fields are required)
Ref SQL Statement (alias) (Original word Column name is used frequently)

Foreign Key

SUPERID int references EMPLOYEE (ID)

FK

T(PR)

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To Show Design Diagrams From Code Database

↳ Database diagrams

↓ Click new DB Diagrams

↳ select Tables ↳ to show relation between these tables.

→ If you have Composite Key

Location Var char(20),
FK → DeptId int references DeptId

CompositeKey → Primary Key (location, DeptId)

→ Alter (edit Table)

{ (Alter, add) , (Alter, Alter),
(Alter, Drop) }

Alter Employees

Add Foreign Key (Dept Id) references
Department(number)

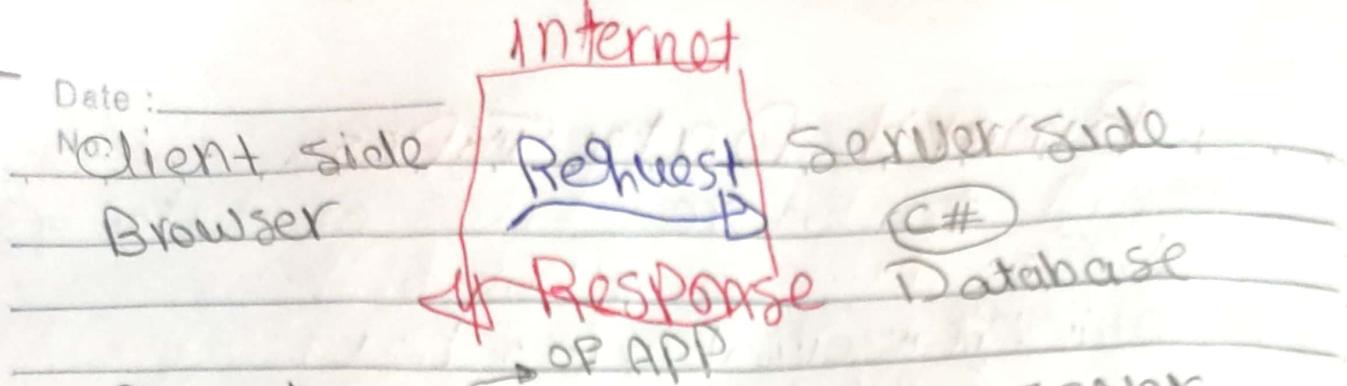
~~Alter Employees~~

① Alter Table employees
add Test int

then

② Alter Table employees
Alter column Test varChar(20)
// Change Data Type of column
Test.

③ Alter Table employees
drop column Test



→ Database Must have to server to can deal with it.

→ local server create on MY device to work on database.

Datatype Date / Time

① Date MM / dd / yyyy (4bits)

Month → 2 bits

② Time hh:mm:ss . milisecond → default = 3

③ Time(5) → milisecond = 5 ms h m

④ small date + time (date + time)
in this type second = 00

⑤ dateTime Date + Time
ms = default = 3

⑥ dateTime 2(4) ① + ③

⑦ dateTime offset TimeZone

date + time → from

(time) العالى الموقتية time zone
ex: 11/3/2023 10:20 +2:00 TimeZone

Binary Data TYPES

Using to store Files or data as

① Binary 01000100

② Image

③ Var Binary (10)

* اخزن الفايل كبينري او يمروق وفقاً لـ
ـ بناء داتابايس Binary بـ مذكرة ويعبر عن
ـ عيون دعمون لـ SQL اعنى عيون كده
ـ تلاده تنا بنزفخ الـ files او اعادى وبنخل
ـ سارع الفايل Path ist C#

* another Data TYPES

→ XML (اوساس Tag | Table دايم)
ـ ستركتوري للـ OF XML

→ SQL-Variant

ـ نوع ديناميكي مثل DT Var وـ
ـ المخزن فيه Runtime

SQL Variant $x = 5$ (int)
 $x = Ahmed$ (string)

* SQL Variant not \rightarrow SQL files is \rightarrow custom date

Date :
No. :

* Variables → 2 Types

① Global Variables

Built-in Variables in SQL Server

@@ → use to using global

Ex:

Print @@version

@@servername

* In SQL correctly run each query by → after write query
select query & run result in result set
result in result set

② Local Variables

Create Variable on My DataBase

@ name of local Variable

Ex:

~~declare~~ declare @Name char(10)
name var

* You must run all query's before result
like query (first) (no use) like result

Ex:

declare @name char(10) = 'Ali'

Print @name // Ali

Set @Name = 'Mohamed XXX M' //

Print @name

// Mohamed XXX

note length is fixed

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No:

* When Create Database You have

MDF

Main Database File

IS Primary File

Store all Tables

With all info

[] US

LDF

Log Database File

Store all

Transactions

Excep. of check

insert

update

Delete

* SQL Categories

(Structure Query language)

① Microsoft → Transact-SQL

→ DDL (Data Definition Lang)

Metadata & Structure

(Create Tables, Create View,

Create Fun, Alter, Drop, Select into)

→ DML (Data Manipulation Lang)

Data (Insert, Update, Delete, Merge)

→ DC (Data Control Lang)

Security & Permission

(Grant, Deny, Revoke)

→ DQL (Data Query Lang)

Display → (Select + Agg Fun,

Grouping, Union, Joins, Sub Queries)

→ TSQL (Transaction Control Lang)

Execution (Begin Transaction, Commit,

Rollback)

Date :

No:

* DDL

Structures defined

Create

* Code

① Create database name

② use database

③ Create Table name

(
name of column type of column constraint
constraint just like it is no exists
space, (like lies) add to it)

→ If you have weak entity

① Make Foreign Key (Strong PK)

② Primary Key → Composite from
Primary Key of Strong Entity

* Partial Key not Foreign Key
↳ in Weak entity

Ex 1 Make

Foreign Key with Strong entity

EId int references Employee(Id),

Name Varchar(20),

↳ Partial Key

Primary Key (EId, Name)

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→ Wizard

From Database → Right Click
Choose new database

* DML (Data Model)

Insert

① Single row in Table

→ Put Values by same order of Tables

SQL

Insert Into Employees

Values ('Ahmed', 'Nasser', 'M', null, null, null, null, null)

(~~Id~~ → Identity (Primary Key) ~~First name~~ ~~Last name~~ ~~Gender~~)

② Specific columns with values

Insert Into Employees (Gender, Fname, Lname)

Values ('M', 'Nasser', 'Ahmed')

(~~Id~~ → Default (Primary Key))

null → the ~~Id~~ is a ~~Column~~ (is up)

↓ null → ~~Column~~ is ~~Column~~ (is up)

and null → set , instead ~~Column~~ (is up)

ERROR

* You have attribute IS
PK & FK at same time

Date : _____

// to add constraint to table

Alter Table Employees
add Foreign Key (Dep_Id) reference
Department (Id)

// to remove constraint from table

Alter Table Employees
Drop constraint [(take name of constraint
= From copy from keys)]

* Drop

To delete database

→ Drop Database name

// ensure you in Database of this

→ Drop Table name of Table

delete Table

→ To delete column

Alter Table Employee

drop column name of column

DML →

① Insert → ① Single row in Table
→ ② Specific Columns

→ ③ all rows by using Row constructor

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③ Row Constructor

insert # of rows

into columns | Values | Rows (أمثلة لـ insert into ... values)

Ex:

Insert Into Employees

Values ('Hend', 'Ali', 'F', '11-22-1999', null, null),
('Ahmed', 'Mohamed', 'M', '22-1-1980', null, null),
('Hana', 'Ahmed', 'F', '10-2-1988', null, null),
('Hassan', 'Mounir', 'M', '1-9-1960', null, null)

ويكتب كالتالي (columns) في SET

التي تكتب

Ex Insert Into Employees (Fname, Lname)

Values ('Ahmed', 'Ali'), ('Hend', 'Ali'),
('Hassnaa', 'Mounir')

② Update

Update Table Name

Set Fname = 'Ali'

Where Id = 1 Condition (القيمة التي تكتب في Column)

Ali, Fname (القيم التي تكتب في Column)

of Id = 1 (row التي تغيرها)

Ex

Alter Table Employee IM (Columns)

Add Salary Money

Update Employees

Set Salary = 5000

Where Gender = 'M'

ذاته

لذلك

Salary = 5,000

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③ Delete

Delete From Employees

//Delete all rows in employees

Delete From Employees

Where Gender = 'F'

F : حذف جنس F : حذف كل الارقام