

SQL Server

Wednesday, February 10, 2021 10:09 AM

Database

1.	Modify Name	Alter database <old_name> modify name=<new_Name> or exec sp_rename oldname,newname
2.	To Get Data Dictionary	In Query Area Select Table Name and press alt + F1 / sp_help
3.	To Allow Identity Column to supply value manually	SET Identity_Insert tablename ON; Note : Have to Supply Values like regular Insertion
4.	Check	Add constraint <nameofc> default(value) for column_name
5.	Default	Add constraint <nameofc> CHECK(expression)
6.	Options For Foreign Key Column	Set Null, Set Default, Cascade.
7.	To Reset Identity	DBCC CHECKIDENT(tblName,RESEED,seed value);
8.	To Get Current Identity Value	<ul style="list-style-type: none"> • Scope_Identity() : Of Particular Scope in Same Scope • @@identity () : Same Session but Across Every Scope • Ident_Current('tableName') : OF Particular Table. • Generally All With Select To Display Value
9.	To Get Distinct Value form Column	Select distinct column Name/s from tableName
10.	To Provide Condition (Filter or short)	Select columns from tableName where condition <ul style="list-style-type: none"> • For Not Equal to <> or != • Other Like =, >=, <=, =, >, < • IN : where column IN (Lists of Elements) - True for all Value Form List • NOT : where column NOT IN (Lists of Elements) - True for all apart from Value Form List or satisfy condition like NOT Between and NOT LIKE • BETWEEN :where column between value1 and value2 - for Ranging • LIKE: where column LIKE 'pattern' <ul style="list-style-type: none"> ◦ % : Like * in REGEX means zero or more occurrence ◦ _ : Like . In Regex means only one char ◦ [] : Like [] in regex any form this ◦ [^]: Like [^] in Regex not any from this • AND & OR : For Logical • IS NULL or IS NOT NULL : Compare Null Values
11.	For Sorting	Select * from column_name order by (column_name ASC /DESC)* <ul style="list-style-type: none"> • Default ASC
12.	To Retrieve few records of choice	Select top number . . .
13.	To Aggregate	Select . . . tableName group by columnName/es (Optional: Having=value) <ul style="list-style-type: none"> • Can Select or Operate Aggregate Functions Only or columnName/es By Which Aggregate. • Using Having We Can Get Particular Values only like Gender is Male • If Condition is there can use Where Having is Helpful to filter based on Value
14.	Types of Join	<ul style="list-style-type: none"> • Inner Join : Common of A and B • Left Join : Complete A + Null Where Not Matched With B • Right Join : Null Where Not Matched With A+ Complete B • Full Join : Complete A and B (Null Where Not Matched in A or B) • Cross Join : A * B = Each of A is Join With Each of B • Self Join: It is not any different type of join just a concept that if needed then can join same with itself
15.	To Replace Null Value	<ul style="list-style-type: none"> • ISNULL() function • Case Statement <ul style="list-style-type: none"> • Case when exp then value else value as ColnameToRepresent • COALESCE() function <ul style="list-style-type: none"> • Generally It Returns First No Null Values from Provided List of values
16.	To Combine the resultant data (Same Structure including data type)	<ul style="list-style-type: none"> • UNION <ul style="list-style-type: none"> • Remove Duplication after union data and before displaying • UNION ALL <ul style="list-style-type: none"> • Gather all data and Display.

17.	Stored Procedure	<ul style="list-style-type: none">• With Encryption before definition of stored procedure to stop retrieving definition.• sp_helptext to retrieve definition of stored procedure																														
18.	Basic String Functions	<ul style="list-style-type: none">• ASCII(char value) : Gives ASCII Value of character• Char (int value) : Character corresponds to the ASCII value• LTRIM(string), RTRIM(string), TRIM(string) : To Trim The Spaces for Left and Right side• LEN(string) : To get Length of String• LEFT/RIGHT(string, int): To Get Specified Char from string from left/right side• SubString(string, int, int) : Substring from string• Replicate(string, int times) : To Repeat String times• Space(int) : To Print Space int times• Lower(string) : String To Lower• Upper (string) : String To Upper• Reverse(string): To Reverse the String• CharIndex(char, string) : Returns First Occurrence of char in string, 0 if no• PatIndex (pattern, string) : Gives Index where First Occurrence of Pattern is matched, 0 if no• Replace (string, stringToReplace, ReplacementString) : To Replace Value• Stuff (string, startpos, length, replacement string) : Similar to Replace just way is different																														
19.	Date Time	<ul style="list-style-type: none">• Data Types:<ul style="list-style-type: none">• Time - 3 to 5• Date -3• SmallDateTime - 4• DateTime - 8• DateTime2 - 6 to 8• DateTimeOffset 8 to 10 (Includes Time Zone +/- hh:mm)• Difference is in Accuracy and size of storing 1day/ minute to, 0.0033s - 100 ns• Functions:<ol style="list-style-type: none">1. GETDATE / CURRENT_TIMESTAMP: Moreover Same2. SYSDATETIME / SYSDATETIMEOFFSET : Difference is just accuracy3. GETUTCDATE / SYSUTCDATETIME : To Get UTC based Time4. ISDATE() - if yes then 1 else 0 (Not Applicable for DateTime2 and offset so max nnn)5. DAY/ Month/ Year (Valid Date) : Return Particular Value6. DateName/ DatePart: (part, date): To Get More Details About Date in Name or Integer<table><tr><th>DatePart</th><th>Abbreviation</th></tr><tr><td>year</td><td>yy, yyyy</td></tr><tr><td>quarter</td><td>qq, q</td></tr><tr><td>month</td><td>mm, m</td></tr><tr><td>dayofyear</td><td>dy, y</td></tr><tr><td>day</td><td>dd, d</td></tr><tr><td>week</td><td>wk, ww</td></tr><tr><td>weekday</td><td>dw</td></tr><tr><td>hour</td><td>hh</td></tr><tr><td>minute</td><td>mi, n</td></tr><tr><td>second</td><td>ss, s</td></tr><tr><td>millisecond</td><td>ms</td></tr><tr><td>microsecond</td><td>mcs</td></tr><tr><td>nanosecond</td><td>ns</td></tr><tr><td>TZoffset</td><td>tz</td></tr></table><ol style="list-style-type: none">7. DateAdd (part,value,date)8. DateDiff (part,date1,date2)	DatePart	Abbreviation	year	yy, yyyy	quarter	qq, q	month	mm, m	dayofyear	dy, y	day	dd, d	week	wk, ww	weekday	dw	hour	hh	minute	mi, n	second	ss, s	millisecond	ms	microsecond	mcs	nanosecond	ns	TZoffset	tz
DatePart	Abbreviation																															
year	yy, yyyy																															
quarter	qq, q																															
month	mm, m																															
dayofyear	dy, y																															
day	dd, d																															
week	wk, ww																															
weekday	dw																															
hour	hh																															
minute	mi, n																															
second	ss, s																															
millisecond	ms																															
microsecond	mcs																															
nanosecond	ns																															
TZoffset	tz																															

20.	Cast and Convert	<ul style="list-style-type: none"> Both are Use to Convert One Data Type to Another <ul style="list-style-type: none"> CAST(column or value as datatype) Convert(datatype, column or value [style/format]) <ul style="list-style-type: none"> So Just Difference is Can Style Using Convert not By Cast Can Get Styles from MSDN styles for date Cast is More Preferable and Acceptable
21.	Mathematical Functions	<ul style="list-style-type: none"> There are Many functions and unlike String Can That from Programmability/Functions/System Functions/String or Mathematical Functions. RAND() : Return float between 0 and 1 and if provide seed always get same value, To Increase Range can increase multiplier. In ROUND function Third Para Tells Truncate or Round, Minus Places Tells Operation before Point
22.	Functions	<ul style="list-style-type: none"> Scaler Function Can Not Return text, Cursor, Timestamp Inline Tabled Value Function Returns Table and Not Have Begin and End otherwise It Will throw and Error (Returns Table). In Multi value Table function have to create table variable of Type Table with structure Definition ex: returns @TableName Table (col1 datatype. Col2 datatype.....), and it also need begin and end block, Just Have To write Return As Returns Table so have to treat like table. WITH SCHEMABINDING is helpful so that used table can not delectable until Function Is Referring That.
23.	Temporary Table	<ul style="list-style-type: none"> Local Temp Table's Scope and Life is till Particular Connection or In Case Of Stored Procedure till execution of Sp only, Can Possible Same Table From Other Connection. # for Local and ## for Global. Global Temp Table is till all connection not referring and Unique Across All Users
24.	Indexing	<ul style="list-style-type: none"> It is Very helpful as it increase scanning performance, as default table Scanning means row by row every place need to check or handle Sp_HelpIndex tablename : List Indices Types: <ul style="list-style-type: none"> Clustered : Only One To Store Data (Default PK) Non Clustered : As Many but store additional like index page Unique : To Make Unique Ex: Unique Constraint Non Unique : if Not Unique Then its is Not-Unique
25.	View	<ul style="list-style-type: none"> Just a Saved SQL Query or Can Say Virtual Table As View is not storing Data so we can Update Base Table form View Can Added Index to view But Main Thing is It is Generally Helpful in case of OLAP as not frequent changes are there in tables so. Can Not Have Order By Clause Not Applicable on Temp Tables
26.	Triggers	<ul style="list-style-type: none"> Type: <ul style="list-style-type: none"> DML : Fires on DML Events like Insert, Update and Delete. <ul style="list-style-type: none"> After: After Event Occurred <ul style="list-style-type: none"> Maintain Inserted(Inserted or After Update), Deleted(Deleted or Before Update) Table in trigger context only Instead: <ul style="list-style-type: none"> Specifically to solve operation on view in case of Multiple Tables. Update(Column Name) to Check User Updating That Column) DDL Logon
27.	Others	<ul style="list-style-type: none"> Select * into tablename from tablename, Insert into tblname select * tablename; While(Exists()) <ul style="list-style-type: none"> Begin End colname from tablename Delete from tblname join tblname2 on : Which Delete All Matched Rows Can Declare Table Variable and use it like table or temp table
28.	Derived Table	<ul style="list-style-type: none"> Select id name from () as tblname;
29.	Common Table Expression	<ul style="list-style-type: none"> With tblname(column list) as (select) query, tblname(column list) as select query, . , ,.... Is Useful Which immediate Follow by use of that. Can Change Base Table but if not multiple base then only can change CTE.
30.	PIVOTING	<ul style="list-style-type: none"> To Rotate Data one Dimension (Aggregation is Required)

Note :

- If we directly execute query then all queries got execute but By Selecting and Execute then we can execute selected Query from all list of query in Single Query Window.
- Best way to declare table with tbl prefix and stored procedure with sp prefix not by 'sp_'.
- As to give alias and if Column Name contain Space then [Column Name].
- Main DB Rule is Do Thing As Early as Possible.
- Union Combine the rows of table where as Join combine columns based on logical relationship.
- Inline Table Value Function is better in performance and sql treat as view, where as Multi Value is treat like Stored Procedure, as Value function can update table which getting from Function.
- Primary Key Uses Clustered and Unique Indexing To Become Unique.
- By Indexing Can Create Constraint.
- As SP, Functions and Views are From Table so signature is like
 - Create or alter proc/function/view name
Params if (In case of Functions, sp) and Return Type (In Case of function)
As
Begin // If Not Inline Table Value Function
 // code
 // return (In Case Of Function)
End
- In Case of Index and Trigger as are on Table so Signature is Like
 - Create {Type} INDEX / TRIGGER name
On <tblname or viename> {Colname}
{These Are for Index Only}
For Trigger Only #####
FOR <insert/delete/update>
As
Begin
End
- Raiserror to Throw Error in DB
- Scope of Variable also stored in DB not in memory
- View, Table value function

Observations:

- In Case of identity when Insert Statement executes then it increment the Identity counter first, so if in case Insert statement is throw an error then also identity counter no get decremented, and next successful will not stored on last stored record's identity + 1 instead of that identity + 1 + in between failed insert Statement. (Not Applicable For Compiling Query)
- If Default is Not Set And Set Default option as Insert Update Specification in FK then it gives NULL.
- As ASCII is till 256 so if provide more then that to char() it return NULL
- Length of Null String is Null same for LEFT and RIGHT, TRIMING functions, Replicate,
- If Date is Not Valid Format then Day, Month and Other will Not work.
- If Multiple Tables are involved in View or inline table value function then Insertion, Updating & deletion may throw error if multiple table get affected.
- String_AGG() function to aggregate strings and in case of pivot if want data which is varchar then min or max is fine.