Instance ID: SQLExpress

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sql notes;

>> sql server 2008 R2 is being used.

>> microsoft sql server management studio is being used to explore the databases. pubs database has been downloaded and loaded. it has tables like authors,

publishers, titles.

>> collection of realted data is known as database. DMBS is the software which creates, maintains and deletes the databases etc. Table has the realted data.

schema is set of rules, which the table has to be followed. it determines how the data to be stored, related etc.

>> columns, rows, datatypes

>> USE, SELECT, FROM.

USE db\_name

SELECT col\_name1, col\_name2 etc

FROM table\_name

>> ORDER BY col\_name --> This ORDER BY is being used to sort table. Default is ascending order. To sort descending , we need to specify DESC . we can sort by multiple column names. This will first sort the table by first column, and then the second column.

SELECT \* FROM TABLE\_NAME

ORDER BY col\_one, col\_two DESC;

>> Reserved words: some words are reserved words in sql and they might appear as a column name too. SQL Manager is smart enough to let you know that it is a reserved word by making it appear in blue color and still let you to refer as a column. If you want to specifically told that the word should be used as a column name, encolose it within square brackets. [col\_name]

>> WHERE --> To retrieve only those records from the table, which matches a specified condition. WHERE is being used to specifiy condition(s). Single quotes used to delineate a string. No need to enclose them if it is a numeric value.

'=' is used as one of the main operator.

WHERE col\_name = 'val';

WHERE clause has comes with various operators. '=' is one such operator. =, != or <>, <,<=,>, >=, BETWEEN, AND, OR, NOT, IS NULL, LIKE, IN

>> AND, OR can be used in WHERE clause where we want to specify more than one condition.

>>LIKE: . This is used along with wildcards to create a search pattern instead of searching for a specific match. This is used to filter the data. Actually it is a predicate (part of a statement)—an expression used with a clause to return a value of true or false. This operator has been used in the WHERE clause. This LIKE operator can be used along with the AND, OR, NOT etc operators too.

‘% %’ :

WHERE CITY LIKE ‘% %’ -- This matches any city which matches any number of charcters at the beginning of the name and any number of characters at the end of the name and atleast a space between them.

‘% % %’ : WHERE CITY LIKE ‘% % %’ -- this will match a string with any number of characters at the beginning, and a space followed by any number of characters and followed by a space and any number of characters.

>> IN: if you have more than one condition, AND, OR, NOT have been used. If you have more than 2 conditions, IN is being used to write a cumbersome free queries. WHERE col\_name IN (val1,val2, val3,etc)

>> IS: WHERE col\_name IS NULL. This will pull out the records where the state value is NULL.

>> Wild cards: They allow more flexibility in your queries, as they don’t require exact match. Wildcards will be used only with the string data types.

\* matches everything of column names

% matches any number of specified characters occurring any number of times. When filtering data, % serves as the same purpose as asterisk(\*)

\_ represents single character.

CHAR vs VARCHAR: You can always use CHAR when you have fixed length data type such as zip code, state abbreviation or a phone number. CHAR wil always allocates the maximum length of characters irrespective of whether they are used or not. VARCHAR will allocates just enough memory to hold the datatype.

NULL value: this indicates that no data has been entered.

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>> Aliases:

It is just another name for the column or for the table. it is used to enhance the readability. use cases are when creating a column out of a calculation, or when querying multiple tables. It’s a temporary name used for display output. col\_name AS "alias name" .

>> AS: AS is used to create an alias. Column can be created on the fly by making a calculation and using alias AS. Quotes are needed to be surrounded around the alias name. When querying multiple tables, you need to specify which column from which table is being used if the same column name exists in multiple tables. In this scenario AS – alias is very useful.

SELECT col\_name AS “new\_col\_name”;

>> Count Function: to get the total number of records, use this query.

SELECT COUNT (\*) FROM db\_name;

>> DISTINCT: to pull out unique records. SELECT DISTINCT col\_name

>> Aggregate functions. COUNT, AVG, SUM, MIN, MAX

>> CAST & CONVERT: the data that was there in the column is not suitable for the calculation that you intend to perform, we use data type conversion. CAST is the ANSI standard, and CONVERT is Microsoft based one. Convert has more functionality or ease of use.

>> GROUP BY: for the given column value, the aggregate of another column will be displayed using the GROUP BY function. It operates based on the aggragate functions like count, avg,min,max etc. The column name specified in the SELECT statment must appear in the GROUP BY clause.

>> HAVING Clause: this HAVING clause is being used with the GROUP BY clause as a filter. Grouped data can be filtered based on a condition. For this HAVING clause is being used. GROUP BY is used to group the data, in that HAVING is used as a filter just like WHERE is used like a filter on the rows.

>> OVER(PARTITION BY):

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>> Inner Joins: When querying multiple tables, we need to specify which columns need be matched to extract the information from both the tables in the WHERE clause.

>> ON

>> LEFT OUTER JOIN

>> RIGHT OUTER JOIN

>> SELF JOIN