



Teradata SQL Class Outline

Basic SQL Functions

Introduction

SELECT * (All Columns) in a Table

SELECT Specific Columns in a Table

Using the Best Form for Writing SQL

Commas in the Front or in the Back?

Place your Commas in front for better Debugging Capabilities

Sort the Data with the ORDER BY Keyword

ORDER BY Defaults to Ascending

Use the Name or the Number in your ORDER BY Statement

Two Examples of ORDER BY using Different Techniques

Changing the ORDER BY to Descending Order

NULL Values sort First in Ascending Mode (Default)

NULL Values sort Last in Descending Mode (DESC)

Major Sort vs. Minor Sorts

Multiple Sort Keys using Names vs. Numbers

Sorts are Alphabetical, NOT Logical

Using A CASE Statement to Sort Logically

How to ALIAS a Column Name

A Missing Comma can by Mistake become an Alias

The Title Command and Literal Data

Comments using Double Dashes are Single Line Comments

Comments for Multi-Lines

Comments for Multi-Lines as Double Dashes per Line

A Great Technique for Comments to Look for SQL Errors

The WHERE Clause

The WHERE Clause limits Returning Rows

Using a Column ALIAS throughout the SQL

Double Quoted Aliases are for Reserved Words and Spaces

Character Data needs Single Quotes in the WHERE Clause

Character Data needs Single Quotes, but Numbers Don't

NULL means UNKNOWN DATA so Equal (=) won't Work

Use IS NULL or IS NOT NULL when dealing with NULLs

NULL is UNKNOWN DATA so NOT Equal won't Work

Use IS NULL or IS NOT NULL when dealing with NULLs

Using Greater Than OR Equal To (>=)

Using GE as Greater Than or Equal To (>=)

AND in the WHERE Clause

Troubleshooting AND

OR in the WHERE Clause

Troubleshooting OR

OR must utilize the Column Name Each Time

Troubleshooting Character Data

Using Different Columns in an AND Statement

Quiz – How many rows will return?

Answer to Quiz – How many rows will return?

What is the Order of Precedence?

Using Parentheses to change the Order of Precedence

Using an IN List in place of OR

The IN List is an Excellent Technique

IN List vs. OR brings the same Results

Using a NOT IN List

A Technique for Handling Nulls with a NOT IN List

An IN List with the Keyword ANY

A NOT IN List with the Keywords NOT = ALL

BETWEEN is Inclusive

BETWEEN Works for Character Data

LIKE uses Wildcards Percent '%' and Underscore '_'

LIKE command Underscore is Wildcard for one Character

LIKE ALL means ALL conditions must be Met

LIKE ANY means ANY of the Conditions can be Met

IN ANSI Transaction Mode Case Matters

In Teradata Transaction Mode Case Doesn't Matter

LIKE Command Works Differently on Char Vs. Varchar

Troubleshooting LIKE Command on Character Data

Introducing the TRIM Command

Quiz – Which Data is Left Justified and Which is Right?

Numbers are Right Justified and Character Data is Left

Answer – Which Data is Left Justified and Which is Right?

An Example of Data with Left and Right Justification

A Visual of CHARACTER Data vs. VARCHAR Data

Use the TRIM command to remove spaces on CHAR Data

TRIM Eliminates Leading and Trailing Spaces

Escape Character in the LIKE Command changes Wildcards

Escape Characters Turn off Wildcards in the LIKE Command

Quiz – Turn off that Wildcard

ANSWER – To Find that Wildcard

Distinct Vs. Group By

The Distinct Command

Distinct vs. GROUP BY

Rules of Thumb for DISTINCT vs. GROUP BY

GROUP BY Vs. DISTINCT – Good Advice

Quiz – How many rows come back from the Distinct?

Answer – How many rows come back from the Distinct?

The TOP Command

TOP Command

TOP Command is brilliant when ORDER BY is used!

The TOP Command WITH TIES

How the TOP Command WITH TIES Decides

The TOP Command will NOT work with Certain Commands

Review

Testing Your Knowledge 1

Testing Your Knowledge 2

Testing Your Knowledge 3

Testing Your Knowledge 4

Testing Your Knowledge 5

Testing Your Knowledge 6

Testing Your Knowledge 7

HELP and SHOW

Determining the Release of your Teradata System

Basic HELP Commands

Other HELP Commands

HELP DATABASE

HELP USER

HELP TABLE

Adding a Comment to a Table

Adding a Comment to a View

SELECT SESSION

USER Information Functions

HELP SESSION

HELP SQL

A HELP SQL Example

Show Commands

SHOW Table command for Table DDL

SHOW View command for View Create Statement

SHOW Macro command for Macro Create Statement

SHOW Trigger command for Trigger Create Statement

Aggregation Function

Quiz – You calculate the Answer Set in your own Mind

Answer – You calculate the Answer Set in your own Mind

The 3 Rules of Aggregation

There are Five Aggregates

Quiz – How many rows come back?

Troubleshooting Aggregates

GROUP BY when Aggregates and Normal Columns Mix

GROUP BY Delivers one row per Group

GROUP BY Dept_No or GROUP BY 1 the same thing

Limiting Rows and Improving Performance with WHERE
WHERE Clause in Aggregation limits unneeded Calculations
Keyword HAVING tests Aggregates after they are Totaled
Keyword HAVING is like an Extra WHERE Clause for Totals
Getting the Average Values per Column
Average Values per Column for All Columns in a Table
Three types of Advanced Grouping
GROUP BY Grouping Sets
GROUP BY Rollup
GROUP BY Rollup Result Set
GROUP BY Cube
GROUP BY CUBE Result Set
Use the Nexus for all Groupings
Testing Your Knowledge – Basic Aggregation
Testing Your Knowledge – Multiple Aggregates
Testing Your Knowledge- Group By
Testing Your Knowledge – Using a Where Clause
Testing Your Knowledge- Using Having
Final Answer to Test Your Knowledge on Aggregates

Join Functions

A two-table join using Non-ANSI Syntax
A two-table join using Non-ANSI Syntax with Table Alias
Aliases and Fully Qualifying Columns
A two-table join using ANSI Syntax
Both Queries have the same Results and Performance
Quiz – Can You Finish the Join Syntax?
Answer to Quiz – Can You Finish the Join Syntax?
Quiz – Can You Find the Error?

Answer to Quiz – Can You Find the Error?

Quiz – Which rows from both tables Won't Return?

Answer to Quiz – Which rows from both tables Won't Return?

LEFT OUTER JOIN

LEFT OUTER JOIN Brings Back All Rows in the Left Table

RIGHT OUTER JOIN

RIGHT OUTER JOIN Brings Back All Rows in the RIGHT Table

FULL OUTER JOIN

FULL OUTER JOIN Brings Back All Rows in All Tables

Which Tables are the Left and which are the Right?

Answer - Which Tables are the Left and which are the Right?

INNER JOIN with Additional AND Clause

ANSI INNER JOIN with Additional AND Clause

ANSI INNER JOIN with Additional WHERE Clause

OUTER JOIN with Additional WHERE Clause

OUTER JOIN with Additional AND Clause

Results from OUTER JOIN with Additional AND Clause

Quiz – Why is this considered an INNER JOIN?

The DREADED Product Join

Result Set of the DREADED Product Join

The Horrifying Cartesian Product Join

The ANSI Cartesian Join will ERROR

Quiz – Do these Joins Return the Same Answer Set?

Answer – Do these Joins Return the Same Answer Set?

The CROSS JOIN

The CROSS JOIN Answer Set

The Self Join

The Self Join with ANSI Syntax

Quiz – Will both queries bring back the same Answer Set?

Answer – Will both queries bring back the same Answer Set?

Quiz – Will both queries bring back the same Answer Set?

Answer – Will both queries bring back the same Answer Set?

How would you Join these two tables?

How would you Join these two tables? You Can't Yet!

An Associative Table is a Bridge that Joins Two Tables

Quiz – Can you Write the 3-Table Join?

Answer to Quiz – Can you Write the 3-Table Join?

Quiz – Can you Write the 3-Table Join to ANSI Syntax?

Answer – Can you Write the 3-Table Join to ANSI Syntax?

Quiz – Can you Place the ON Clauses at the End?

Answer – Can you Place the ON Clauses at the End?

The 5-Table Join – Logical Insurance Model

Quiz - Write a Five Table Join Using ANSI Syntax

Answer - Write a Five Table Join Using ANSI Syntax

Quiz - Write a Five Table Join Using ANSI Syntax

Answer - Write a Five Table Join Using ANSI Syntax

Quiz - Write a Five Table Join Using Non-ANSI Syntax

Answer - Write a Five Table Join Using Non-ANSI Syntax

Quiz –Re-Write this putting the ON clauses at the END

Answer –Re-Write this putting the ON clauses at the END

The Nexus Query Chameleon Writes the SQL for Users.

Date Functions

Date, Time, and Current_Timestamp Keywords

Dates are stored internally as INTEGERS from a Formula

Displaying Dates for INTEGERDATE and ANSIDATE

DATEFORM

Changing the DATEFORM in Client Utilities such as BTEQ

Date, Time, and Timestamp Recap
Timestamp Differences
Finding the Number of Hours between Timestamps
Troubleshooting Timestamp
Add or Subtract Days from a date
A Summary of Math Operations on Dates
Using a Math Operation to find your Age in Years
Find What Day of the week you were Born
The ADD_MONTHS Command
Using the ADD_MONTHS Command to Add 1 Year
Using the ADD_MONTHS Command to Add 5 Years
The EXTRACT Command
EXTRACT from DATES and TIME
CURRENT_DATE and EXTRACT or Current_Date and Math
CAST the Date of January 1, 2011 and the Year 1800
The System Calendar
Using the System Calendar in Its Simplest Form
How to really use the Sys_Calendar.Calendar
Storing Dates Internally
Storing Time Internally
Storing TIME with TIME_ZONE Internally
Storing Timestamp Internally
Storing Timestamp with TIME_ZONE Internally
Storing Date, Time, and Timestamp with Zone Internally
Time Zones
Setting Time Zones
Seeing your Time Zone
Creating a Sample Table for Time Zone Examples
Inserting Rows in the Sample Table for Time Zone Examples

Selecting the Data from our Time Zone Table
Normalizing our Time Zone Table with a CAST
Intervals for Date, Time and Timestamp
Interval Data Types and the Bytes to Store Them
The Basics of a Simple Interval
Troubleshooting the Basics of a Simple Interval
Interval Arithmetic Results
A Date Interval Example
A Time Interval Example
A - DATE Interval Example
A Complex Time Interval Example using CAST
A Complex Time Interval Example using CAST
The OVERLAPS Command
An OVERLAPS Example that Returns No Rows
The OVERLAPS Command using TIME
The OVERLAPS Command using a NULL Value

Format Functions

The FORMAT Command
The Basics of the FORMAT Command
Quiz – How will the Date Appear after Formatting
Answer to Quiz – How will the Date Appear after Formatting
Quiz – How will the Date Appear after Formatting
Answer to Quiz – How will the Date Appear after Formatting
Formatting with MMM for the Abbreviated Month
Answer to Quiz – How will the Date Appear after Formatting
Formatting with MMMM for the Full Month Name
Formatting with MMMM for the Full Month
Formatting with DDD for the Julian Day

Formatting with DDD for the Julian Day
Formatting with EEE or EEEE for the Day of the Week
EEEE for the Abbreviated or Full Day of the Week
Placing Spaces inside your Formatting Commands with a B
Formatting Spaces with B or b
Formatting with 9
Formatting with 9 Results
Troubleshooting when Formatted Data Overflows
Troubleshooting when Formatted Data Overflows
Formatting with X or x
Formatting with Z
Formatting with Z Visual
Formatting with 9
Formatting with 9 Visual
Formatting with \$
Formatting with \$ Visual
Formatting with \$ and Commas
Formatting with \$ and Commas Visual
Formatting with \$ and Commas and 9
Formatting with \$ and Commas and 9 with Zero Dollars
A Great Formatting Example
A Great Formatting Example for Day, Month, and Year
A Trick to get SQL Assistant to Format Data
Using the CASESPECIFIC (CS) Command in Teradata Mode
Using NOT CASESPECIFIC (CS) in ANSI Mode
Using the LOWER Command
Using the UPPER Command

OLAP Functions

On-Line Analytical Processing (OLAP) or Ordered Analytics
Cumulative Sum (CSUM) Command and how OLAP Works
OLAP Commands always Sort (ORDER BY) in the Command
Calculate the Cumulative Sum (CSUM) after Sorting the Data
The OLAP Major Sort Key
The OLAP Major Sort Key and the Minor Sort Key(s)
Troubleshooting OLAP – My Data isn't coming back correct
GROUP BY in Teradata OLAP Syntax Resets on the Group
CSUM the Number 1 to get a Sequential Number
A Single GROUP BY Resets each OLAP with Teradata Syntax
A Better Choice – The ANSI Version of CSUM
The ANSI Version of CSUM – The Sort Explained
The ANSI CSUM – Rows Unbounded Preceding Explained
The ANSI CSUM – Making Sense of the Data
The ANSI CSUM – Making Even More Sense of the Data
The ANSI CSUM – The Major and Minor Sort Key(s)
The ANSI CSUM – Getting a Sequential Number
Troubleshooting the ANSI OLAP on a GROUP BY
The ANSI OLAP – Reset with a PARTITION BY Statement
PARTITION BY only Resets a Single OLAP not ALL of them
The Moving SUM (MSUM) and Moving Window
How the Moving Sum is calculated
How the Sort works for Moving SUM (MSUM)
GROUP BY in the Moving SUM does a Reset
Quiz – Can you make the Advanced Calculation in your mind?
Answer to Quiz for the Advanced Calculation in your mind?
Quiz – Write that Teradata Moving Average in ANSI Syntax
Both the Teradata Moving SUM and ANSI Version
The ANSI Moving Window is Current Row and Preceding

How ANSI Moving Average Handles the Sort

Quiz – How is that Total Calculated?

Answer to Quiz – How is that Total Calculated?

Moving SUM every 3-rows Vs. a Continuous Average

Partition BY Resets an ANSI OLAP

The Moving Average (MAVG) and Moving Window

How the Moving Average is calculated

How the Sort works for Moving Average (MAVG)

GROUP BY in the Moving Average does a Reset

Quiz – Can you make the Advanced Calculation in your mind?

Answer to Quiz for the Advanced Calculation in your mind?

Quiz – Write that Teradata Moving Average in ANSI Syntax

Both the Teradata Moving Average and ANSI Version

The ANSI Moving Window is Current Row and Preceding

How ANSI Moving Average Handles the Sort

Quiz – How is that Total Calculated?

Answer to Quiz – How is that Total Calculated?

Quiz – How is that 4th Row Calculated?

Answer to Quiz – How is that 4th Row Calculated?

Moving Average every 3-rows Vs. a Continuous Average

Partition BY Resets an ANSI OLAP

The Moving Difference (MDIFF)

Moving Difference (MDIFF) Visual

Moving Difference using ANSI Syntax

Moving Difference using ANSI Syntax with Partition By

Trouble Shooting the Moving Difference (MDIFF)

Using the RESET WHEN Option in Teradata (V13)

How Many Months per Product_ID has Revenue Increased?

The RANK Command

How to get Rank to Sort in Ascending Order

Two ways to get Rank to Sort in Ascending Order

RANK using ANSI Syntax Defaults to Ascending Order

Getting RANK using ANSI Syntax to Sort in DESC Order

RANK () OVER and PARTITION BY

RANK () OVER and QUALIFY

RANK () OVER and PARTITION BY with a QUALIFY

QUALIFY and WHERE

Quiz – How can you simplify the QUALIFY Statement

Answer to Quiz – Can you simplify the QUALIFY Statement

The QUALIFY Statement without Ties

The QUALIFY Statement with Ties

The QUALIFY Statement with Ties Brings back Extra Rows

Mixing Sort Order for QUALIFY Statement

Quiz – What Caused the RANK to Reset?

Answer to Quiz – What Caused the RANK to Reset?

Quiz – Name those Sort Orders

Answer to Quiz – Name those Sort Orders

PERCENT_RANK () OVER

PERCENT_RANK () OVER with 14 rows in Calculation

PERCENT_RANK () OVER with 21 rows in Calculation

Quiz – What Cause the Product_ID to Reset

Answer to Quiz – What Causes the Product_ID to Reset

Answer to Quiz – What Causes the Product_ID to Reset

COUNT OVER for a Sequential Number

Troubleshooting COUNT OVER

Quiz – What caused the COUNT OVER to Reset?

Answer to Quiz – What caused the COUNT OVER to Reset?

The MAX OVER Command

MAX OVER with PARTITION BY Reset

Troubleshooting MAX OVER

The MIN OVER Command

Troubleshooting MIN OVER

Finding a Value of a Column in the Next Row with MIN

Finding a Value of a Date in the Next Row with MIN

Finding Gaps between Dates

The CSUM for Each Product_ID for the First 3 Days

Quiz – Fill in the Blank

Answer to Quiz – Fill in the Blank

The Row_Number Command

Quiz – How did the Row_Number Reset?

Quiz – How did the Row_Number Reset?

Row_Number with Qualify to get the Typical Rows per Value

A Second Typical Rows per Value Query on Sale_Date

Testing Your Knowledge

Testing Your Knowledge

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Testing Your Knowledge

The Quantile Function

The Quantile Function and Syntax

A Quantile Example

A Quantile Example using DESC Mode

QUALIFY to find Products in the top Partitions

QUALIFY to find Products in the top Partitions Sorted DESC

QUALIFY to find Products in the top Partitions Sorted ASC

QUALIFY to find Products in top Partitions with Tiebreaker

Using Tertiles (Partitions of Four)

How Quantile Works

Temporary Tables

There are three types of Temporary Tables

CREATING A Derived Table

Naming the Derived Table

Aliasing the Column Names in the Derived Table

Most Derived Tables Are Used To Join To Other Tables

Multiple Ways to Alias the Columns in a Derived Table

Our Join Example with a Different Column Aliasing Style

Column Aliasing Can Default for Normal Columns

CREATING a Derived Table using the WITH Command

Our Join Example With the WITH Syntax

The Same Derived Query shown Three Different Ways

Quiz - Answer the Questions

Answer to Quiz - Answer the Questions

Clever Tricks on Aliasing Columns in a Derived Table

A Derived Table lives only for the lifetime of a single query

An Example of Two Derived Tables in a Single Query

WITH RECURSIVE Derived Table

Defining the WITH Recursive Derived Table

Looping Through the WITH Recursive Derived Table

Looping Through the WITH Recursive Derived Table

Looping Through the WITH Recursive Derived Table

Looping Through the WITH Recursive Derived Table

Creating a Volatile Table

You Populate a Volatile Table with an INSERT/SELECT

The Three Steps to Use a Volatile Table

Why Would You Use the ON COMMIT DELETE ROWS?

The HELP Volatile Table Command Shows your Volatiles
A Volatile Table with a Primary Index
The Joining of Two Tables Using a Volatile Table
You Can Collect Statistics on Volatile Tables
The New Teradata V14 Way to Collect Statistics
Four Examples of Creating a Volatile Table Quickly
Four Advanced Examples of Creating a Volatile Table Quickly
Creating Partitioned Primary Index (PPI) Volatile Tables
Using a Volatile Table to Get Rid of Duplicate Rows
Using a Simple Global Temporary Table
Two Brilliant Techniques for Global Temporary Tables
The Joining of Two Tables Using a Global Temporary Table
CREATING A Global Temporary Table

Sub-query Functions

An IN List is much like a Subquery
An IN List Never has Duplicates – Just like a Subquery
An IN List Ignores Duplicates
The Subquery
How a Basic Subquery Works
The Final Answer Set from the Subquery
Quiz- Answer the Difficult Question
Answer to Quiz- Answer the Difficult Question
Should you use a Subquery of a Join?
Quiz- Write the Subquery
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Quiz- Write the More Difficult Subquery
Answer to Quiz- Write the More Difficult Subquery
Quiz- Write the Subquery with an Aggregate

Answer to Quiz- Write the Subquery with an Aggregate

Quiz- Write the Correlated Subquery

Answer to Quiz- Write the Correlated Subquery

The Basics of a Correlated Subquery

The Top Query always runs first in a Correlated Subquery

The Bottom Query runs last in a Correlated Subquery

Quiz- Who is coming back in the Final Answer Set?

Answer- Who is coming back in the Final Answer Set?

Correlated Subquery Example vs. a Join with a Derived Table

Quiz- A Second Chance to Write a Correlated Subquery

Answer - A Second Chance to Write a Correlated Subquery

Quiz- A Third Chance to Write a Correlated Subquery

Answer - A Third Chance to Write a Correlated Subquery

Quiz- Last Chance to Write a Correlated Subquery

Answer – Last Chance to Write a Correlated Subquery

Correlated Subquery that Finds Duplicates

Quiz- Write the NOT Subquery

Answer to Quiz- Write the NOT Subquery

Quiz- Write the Subquery using a WHERE Clause

Answer - Write the Subquery using a WHERE Clause

Quiz- Write the Subquery with Two Parameters

Answer to Quiz- Write the Subquery with Two Parameters

How the Double Parameter Subquery Works

More on how the Double Parameter Subquery Works

Quiz – Write the Triple Subquery

Answer to Quiz – Write the Triple Subquery

Quiz – How many rows return on a NOT IN with a NULL?

How to handle a NOT IN with Potential NULL Values

IN is equivalent to =ANY

Using a Correlated Exists

How a Correlated Exists matches up

The Correlated NOT Exists

The Correlated NOT Exists Answer Set

Quiz – How many rows come back from this NOT Exists?

Answer – How many rows come back from this NOT Exists?

Substrings and Positioning Functions

The CHARACTERS Command Counts Characters

The CHARACTERS Command – Spaces can Count too

The CHARACTERS Command and Char (20) Data

Troubleshooting the CHARACTERS Command

TRIM for Troubleshooting the CHARACTERS Command

CHARACTERS and CHARACTER_LENGTH equivalent

OCTET_LENGTH

The TRIM Command trims both Leading and Trailing Spaces

Trim and Trailing is Case Sensitive

Trim and Trailing works if Case right

Trim Combined with the CHARACTERS Command

How to TRIM only the Trailing Spaces

How to TRIM Trailing Letters

How to TRIM Trailing Letters and use CHARACTER_Length

The SUBSTRING Command

How SUBSTRING Works with NO ENDING POSITION

Using SUBSTRING to move Backwards

How SUBSTRING Works with a Starting Position of -1

How SUBSTRING Works with an Ending Position of 0

An Example using SUBSTRING, TRIM and CHAR Together

SUBSTRING and SUBSTR are equal, but use different syntax

The POSITION Command finds a Letters Position
The POSITION Command is brilliant with SUBSTRING
Quiz – Name that SUBSTRING Starting and For Length
The POSITION Command is brilliant with SUBSTRING
Quiz – Name that SUBSTRING Starting and For Length
Answer to Quiz – Name that Starting and For Length
Answer to Quiz – Name that Starting and For Length
Using the SUBSTRING to Find the Second Word On
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Answer to Quiz – Why Did only one Row Return
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Concatenation and SUBSTRING
Four Concatenations Together
Troubleshooting Concatenation

Interrogating the Data

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Answer to Quiz – What would the Answer be?
The NULLIFZERO Command
Quiz – Fill in the Blank Values in the Answer Set
Answer to Quiz – Fill in the Blank Values in the Answer Set
Answer to Quiz – Fill in the Blank Values in the Answer Set
Quiz – Fill in the Answers for the NULLIF Command
Quiz – Fill in the Answers for the NULLIF Command
The ZEROIFNULL Command
Answer to the ZEROIFNULL Question
The COALESCE Command
The COALESCE Answer Set
The Coalesce Quiz

Answers to the Coalesce Quiz

The Basics of CAST (Convert and Store)

Some Great CAST (Convert and Store) Examples

Some Great CAST (Convert and Store) Examples

Some Great CAST (Convert and Store) Examples

A Teradata Extension – The Implied Cast

The Basics of the CASE Statements

The Basics of the CASE Statement shown visually

Valued Case vs. Searched Case

Quiz - Valued Case Statement

Answer - Valued Case Statement

Quiz - Searched Case Statement

Answer - Searched Case Statement

Quiz - When NO ELSE is present in CASE Statement

Answer - When NO ELSE is present in CASE Statement

When an ELSE is present in CASE Statement

When NO ELSE is present in CASE Statement

When an Alias is NOT used in a CASE Statement

When an Alias is NOT used in a CASE Statement

When NO ELSE is present in CASE Statement

Combining Searched Case and Valued Case

A Trick for getting a Horizontal Case

Nested Case

Put a CASE in the ORDER BY

View Functions

Creating a Simple View

Basic Rules for Views

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Exceptions to the ORDER BY Rule inside a View
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Views sometimes CREATED for Formatting or Row Security
Another Way to Alias Columns in a View CREATE
Resolving Aliasing Problems in a View CREATE
Resolving Aliasing Problems in a View CREATE
Resolving Aliasing Problems in a View CREATE
CREATING Views for Complex SQL such as Joins
WHY certain columns need Aliasing in a View
Aggregates on View Aggregates
Locking Row for Access
Creating Views for Temporal Tables
Altering a Table
Altering a Table after a View has been created
A View that errors After an ALTER
Troubleshooting a View
Updating Data in a Table through a View
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Macro Functions

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CREATING and EXECUTING a Simple Macro
Multiple SQL Statements inside a Macro
Complex Joins inside a Macro
Passing an INPUT Parameter to a Macro
Troubleshooting a Macro with INPUT Parameters
Troubleshooting a Macro with INPUT Parameters
An UPDATE Macro with Two Input Parameters
Executing a Macro with Named (Not Positional) Parameters

Troubleshooting a Macro

Set Operators Functions

Rules of Set Operators

INTERSECT Explained Logically

INTERSECT Explained Logically

UNION Explained Logically

UNION Explained Logically

UNION ALL Explained Logically

UNION Explained Logically

EXCEPT Explained Logically

EXCEPT Explained Logically

Minus Explained Logically

Minus Explained Logically

Testing Your Knowledge

Testing Your Knowledge

An Equal Amount of Columns in both SELECT List

Columns in the SELECT list should be from the same Domain

The Top Query handles all Aliases

The Bottom Query does the ORDER BY (a Number)

Great Trick: Place your Set Operator in a Derived Table

UNION vs. UNION ALL

UNION vs. UNION ALL Example

Using UNION ALL and Literals

A Great Example of how EXCEPT works

USING Multiple SET Operators in a Single Request

Changing the Order of Precedence with Parentheses

Using UNION ALL for speed in Merging Data Sets

Using UNION to be same as GROUP BY GROUPING SETS

Using UNION to be same as GROUP BY ROLLUP

Using UNION to be the same as GROUP BY Cube

Using UNION to be same as GROUP BY Cube

Using UNION to be same as GROUP BY Cube

Creating Tables, Secondary Indexes, and Join Indexes

Creating a Table with a Unique Primary Index

Creating a Table with a Non-Unique Primary Index

Creating a Table without entering a Primary Index

Creating a Table with NO Primary Index

Creating a Set Table

Creating a Multiset Table

Creating a Set Table with a Unique Primary Index

Creating a Set Table with a Unique Secondary Index

Creating a Table with an UPI and USI

Creating a Table with a Multicolumn Primary Index

Creating a Unique Secondary Index (USI) after a table is created

Creating a Non-Unique Secondary Index (NUSI) after a table is created

Creating a Value-Ordered NUSI

Data Types

Data Types Continued

Data Types Continued

Major Data Types and the number of Bytes they take up

Making an exact copy a Table

Making a NOT-So-Exact Copy a Table

Copying a Table

Troubleshooting Copying and Changing the Primary Index

Copying only specific columns of a table

Copying a Table and Keeping the Statistics

Copying a Table with Statistics
Copying a table Structure with NO Data but Statistics
Creating a Table with Fallback
Creating a Table with No Fallback
Creating a Table with a Before Journal
Creating a Table with a Dual Before Journal
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Creating a Table with a Dual After Journal
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Why Use Journaling?
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Example of how a Queue Table Works
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Creating a PPI Table with RANGE_N Partitioning per Day
Creating a PPI Table with RANGE_N Partitioning per Month
A Visual of One Year of Data with Range_N per Month
Creating a PPI Table with RANGE_N Partitioning per Week

A Clever Range_N Option
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A Visual of Case_N Partitioning
Number of PPI Partitions Allowed
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Combining Older Data and Newer Data in PPI
A Visual for Combining Older Data and Newer Data in PPI
Multi-Level Partitioning Combining Range_N and Case_N
A Visual of Multi-Level Partitioning
NON-Unique Primary Indexes (NUPI) in PPI
PPI Table with a Unique Primary Index (UPI)
Tricks for Non-Unique Primary Indexes (NUPI)
A Brilliant Technique for a Unique Secondary Index
A Brilliant Technique for a Non-Unique Secondary Index
Character Based PPI for RANGE_N
Character-Based PPI for CASE_N
Dates and Character-Based Multi-Level PPI
TIMESTAMP Partitioning
Using CURRENT_DATE to define a PPI
ALTER to CURRENT_DATE the next year
ALTER to CURRENT_DATE with Save
Altering a PPI Table to Add or Drop Partitions
Deleting a Partition
Deleting a Partition and saving its contents
Using the PARTITION Keyword in your SQL
SQL for RANGE_N
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SQL – User Defined Functions (UDF)
User Defined Functions

Creating a Multi-Table Join Index
Visual of a Join Index
Outer Join Multi-Table Join Index
Visual of a Left Outer Join Index
Compressed Multi-Table Join Index
Creating a Single-Table Join Index
Compressed Single-Table Join Index
Aggregate Join Index
Sparse Join Index
A Global Multi-Table Join Index
Creating a Hash Index

Data Manipulation Language (DML)

INSERT Syntax # 1
INSERT Example with Syntax 1
INSERT Syntax # 2
INSERT Example with Syntax 2
INSERT Example with Syntax 3
Using NULL for Default Values
INSERT/SELECT Command
INSERT/SELECT Example using All Columns (*)
INSERT/SELECT Example with Less Columns
INSERT/SELECT to Build a Data Mart
Fast Path INSERT/SELECT
NOT quite the Fast Path INSERT/SELECT
UNION for the Fast Path INSERT/SELECT
BTEQ for the Fast Path INSERT/SELECT
The UPDATE Command Basic Syntax
Two UPDATE Examples

Subquery UPDATE Command Syntax

Example of Subquery UPDATE Command

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Example of an UPDATE Join Command

Fast Path UPDATE

The DELETE Command Basic Syntax

Two DELETE Examples to DELETE ALL Rows in a Table

A DELETE Example Deleting only Some of the Rows

Subquery and Join DELETE Command Syntax

Example of Subquery DELETE Command

Example of Join DELETE Command

Fast Path DELETE

Fast Path DELETE Example # 1

Fast Path DELETE Example # 2

Fast Path DELETE Example # 3

MERGE INTO

MERGE INTO Example that Matches

MERGE INTO Example that does NOT Match

OReplace

Stored Procedure Functions

Stored Procedures vs. Macros

Creating a Stored Procedure

How you CALL a Stored Procedure

Label all BEGIN and END statements except the first ones

How to Declare a Variable

How to Declare a Variable and then SET the Variable

An IN Variable is passed to the Procedure during the CALL

The IN, OUT and INOUT Parameters

Using IF inside a Stored Procedure

Example of two Stored Procedures with different techniques

Using Loops in Stored Procedures

You can Name the First Begin and End if you choose

Using Keywords LEAVE vs. UNTIL for LEAVE vs. REPEAT

Stored Procedure Basic Assignment

Answer - Stored Procedure Basic Assignment

Stored Procedure Advanced Assignment

Answer - Stored Advanced Assignment

Trigger Functions

The Fundamentals of Triggers

CREATING A Trigger

FOR EACH STATEMENT vs. FOR EACH ROW

Using ORDER when Similar Triggers Exist

Math Functions

What is the Order of Precedents?

What is the Answer to this Math Question?

What is the Answer to this Math Question?

What is the Answer to this Math Question?

Sample

The SAMPLE Function and Syntax

SAMPLE Function Examples

A SAMPLE Example that asks for Multiple Samples

A SAMPLE Example with the SAMPLEID

A SAMPLE Example WITH REPLACEMENT

A SAMPLE Example with Four 10% Samples
A Randomized SAMPLE
A SAMPLE with Conditional Logic
Aggregates and A SAMPLE using a Derived Table
Random Number Generator
Using Random to SELECT a Percentage of Rows
Using Random and Aggregations

Statistical Aggregate Functions

The Stats Table
The KURTOSIS Function
A Kurtosis Example
The SKEW Function
A SKEW Example
The STDDEV_POP Function
A STDDEV_POP Example
The STDDEV_SAMP Function
A STDDEV_SAMP Example
The VAR_POP Function
A VAR_POP Example
The VAR_SAMP Function
A VAR_SAMP Example
The CORR Function
A CORR Example
Another CORR Example so you can compare
The COVAR_POP Function
A COVAR_POP Example
Another COVAR_POP Example so you can Compare
The REGR_INTERCEPT Function

A REGR_INTERCEPT Example

Another REGR_INTERCEPT Example so you can compare

The REGR_SLOPE Function

A REGR_SLOPE Example

Another REGR_SLOPE Example so you can compare

Using GROUP BY

No Having Clause vs. Use of HAVING

Explain

EXPLAIN Keywords

EXPLAIN Keywords Continued

Explain Example – Full Table Scan

Explain Example – Unique Primary Index (UPI)

Explain Example – Non-Unique Primary Index (NUPI)

Explain Example – Unique Secondary Index (USI)

Explain Example – Redistributed to All-AMPs

Explain Example – Row Hash Match Scan

Explain Example – Duplicated on All-AMPs

Explain Example –Low Confidence

Explain Example – High Confidence

Explain Example – Product Join

Explain Example – BMSMS

Explain Terminology for Partitioned Primary Index Tables

Explain Example – From a Single Partition

Explain Example – From N Partitions

Explain Example – Partitions and Current_Date

Collect Statistics

The Teradata Parsing Engine (Optimizer) is Cost Based

The Purpose of Collect Statistics

When Teradata Collects Statistics, it creates a Histogram

The Interval of the Collect Statistics Histogram

Histogram Quiz

Answers to Histogram Quiz

What to COLLECT STATISTICS On?

Why Collect Statistics?

How do you know if Statistics were collected on a Table?

A Huge Hint that No Statistics Have Been Collected

The Basic Syntax for COLLECT STATISTICS

COLLECT STATISTICS Examples for a better Understanding

The New Teradata V14 Way to Collect Statistics

Where Does Teradata Keep the Collected Statistics?

The Official Syntaxes for COLLECT STATISTICS

How to Recollect STATISTICS on a Table

Teradata Always Does a Random AMP Sample

Random Sample is kept in the Table Header in FSG Cache

Multiple Random AMP Samplings

How a Random AMP gets a Table Row count

Random AMP Estimates for NUSI Secondary Indexes

USI Random AMP Samples are Not Considered

There's No Random AMP Estimate for Non-Indexed Columns

Summary of the PE Plan if No Statistics Were Collected

Stale Statistics Detection and Extrapolation

Extrapolation for Future Dates

How to Copy a Table with Data and the Statistics?

COLLECT STATISTICS Directly From another Table

How to Copy a Table with NO Data and the Statistics?

When to COLLECT STATISTICS Using only a SAMPLE

Examples of COLLECT STATISTICS Using only a SAMPLE

Examples of COLLECT STATISTICS for V14

How to Collect Statistics on a PPI Table on the Partition

Teradata V12 and V13 Statistics Enhancements

Teradata V14 Statistics Enhancements

Teradata V14 Summary Statistics

Teradata V14 MaxValueLength

Teradata V14 MaxIntervals

Teradata V14 Sample N Percent

Teradata Statistics Wizard

Hashing Functions

Hashing Functions on Teradata

The HASHROW Function

The HASHROW Function in a real-world Example

The HASHBUCKET Function

The HASHBUCKET Function in a real-world Example

The HASHAMP Function

The HASHAMP Function in a real-world Example

A Great HASHAMP Function for Large Tables

The HASHBAKAMP Function

A Real-World HASBAKHAMP Function Example

A Great way to see distribution for Primary and Fallback rows

BTEQ – Batch Teradata Query

BTEQ – Batch Teradata Query Tool

How to Logon to BTEQ in Interactive Mode

Running Queries in BTEQ in Interactive Mode

BTEQ Commands vs. BTEQ SQL Statements

WITH BY Command for Subtotals
WITH Command for a Grand Total
WITH and WITH BY Together for Subtotals and Grand Totals
How to Logon to BTEQ in a SCRIPT
Running Queries in BTEQ through a Batch Script
Running a BTEQ Batch Script through the Command Prompt
Running a BTEQ Batch Script through the Run Command
Using Nexus to Build Your BTEQ Scripts
Using Nexus to Build Your BTEQ Scripts
Using BTEQ Scripts to IMPORT Data
What Keywords Mean in a BTEQ Script
Creating a BTEQ IMPORT for a Comma Separated Value File
Four Great Examples/Ways to Run a Teradata BTEQ Script
BTEQ Export – Four types of Export Variations
Creating a BTEQ Export Script in Record Mode
Creating a BTEQ Export Script in Report Mode
The Appearance of Record Mode Vs Report Mode Data
Using Report Mode to Create a Comma Separated Report
Creating a BTEQ IMPORT for a Comma Separated Value File
Using Multiple Sessions in BTEQ
BTEQ Fast Path Inserts
BTEQ Can Use Conditional Logic
Using a BTEQ Export and Setting a Limit In a UNIX System

Top SQL Commands Cheat Sheet

SELECT All Columns from a Table and Sort
Select Specific Columns and Limiting the Rows
Changing your Default Database
Keywords that describe you

Select TOP Rows in a Rank Order
A Sample number of rows
Getting a Sample Percentage of rows
Find Information about a Database
Find information about a Table
Using Aggregates
Performing a Join
Performing a Join using ANSI Syntax
Using Date, Time and Timestamp
Using Date Functions
Using the System Calendar
Using the System Calendar in a Query
Formatting Data
Using Rank
Using a Derived Table
Using a Subquery
Correlated Subquery
Using Substring
Basic CASE Statement
Advanced CASE Statement
Using an Access Lock in your SQL
Collect Statistics
CREATING a Volatile Table with a Primary Index
CREATING a Volatile Table that is Partitioned (PPI)
CREATING a Volatile Table that is deleted after the Query
Finding the Typical Rows per Value for specific column
Finding out how much Space you have
How much Space you have Per AMP
Finding your Space

Finding Space Skew in Tables in a Database

Finding the Number of rows per AMP for a Column

Finding Account Information

Ordered Analytics

