

## Course duration

- 2 days

## Course Benefits

- Gain a deeper knowledge and understanding of Teradata SQL and how to write it.

## Course Outline

### 1. Basic SQL Functions

1. Introduction
2. SELECT \* (All Columns) in a Table
3. SELECT Specific Columns in a Table
4. Using the Best Form for Writing SQL
5. Commas in the Front or in the Back?
6. Place your Commas in front for better Debugging Capabilities
7. Sort the Data with the ORDER BY Keyword
8. ORDER BY Defaults to Ascending
9. Use the Name or the Number in your ORDER BY Statement
10. Two Examples of ORDER BY using Different Techniques
11. Changing the ORDER BY to Descending Order
12. NULL Values sort First in Ascending Mode (Default)
13. NULL Values sort Last in Descending Mode (DESC)
14. Major Sort vs. Minor Sorts
15. Multiple Sort Keys using Names vs. Numbers
16. Sorts are Alphabetical, NOT Logical
17. Using A CASE Statement to Sort Logically
18. How to ALIAS a Column Name
19. A Missing Comma can by Mistake become an Alias
20. The Title Command and Literal Data
21. Comments using Double Dashes are Single Line Comments
22. Comments for Multi-Lines
23. Comments for Multi-Lines as Double Dashes per Line
24. A Great Technique for Comments to Look for SQL Errors

### 2. The WHERE Clause

1. The WHERE Clause limits Returning Rows
2. Using a Column ALIAS throughout the SQL
3. Double Quoted Aliases are for Reserved Words and Spaces
4. Character Data needs Single Quotes in the WHERE Clause
5. Character Data needs Single Quotes, but Numbers Don't
6. NULL means UNKNOWN DATA so Equal (=) won't Work

7. Use IS NULL or IS NOT NULL when dealing with NULLs
  8. NULL is UNKNOWN DATA so NOT Equal won't Work
  9. Use IS NULL or IS NOT NULL when dealing with NULLs
  10. Using Greater Than OR Equal To (>=)
  11. Using GE as Greater Than or Equal To (>=)
  12. AND in the WHERE Clause
  13. Troubleshooting AND
  14. OR in the WHERE Clause
  15. Troubleshooting OR
  16. OR must utilize the Column Name Each Time
  17. Troubleshooting Character Data
  18. Using Different Columns in an AND Statement
  19. Quiz – How many rows will return?
  20. Answer to Quiz – How many rows will return?
  21. What is the Order of Precedence?
  22. Using Parentheses to change the Order of Precedence
  23. Using an IN List in place of OR
  24. The IN List is an Excellent Technique
  25. IN List vs. OR brings the same Results
  26. Using a NOT IN List
  27. A Technique for Handling Nulls with a NOT IN List
  28. An IN List with the Keyword ANY
  29. A NOT IN List with the Keywords NOT = ALL
  30. BETWEEN is Inclusive
  31. BETWEEN Works for Character Data
  32. LIKE uses Wildcards Percent '%' and Underscore '\_'
  33. LIKE command Underscore is Wildcard for one Character
  34. LIKE ALL means ALL conditions must be Met
  35. LIKE ANY means ANY of the Conditions can be Met
  36. IN ANSI Transaction Mode Case Matters
  37. In Teradata Transaction Mode Case Doesn't Matter
  38. LIKE Command Works Differently on Char Vs. Varchar
  39. Troubleshooting LIKE Command on Character Data
  40. Introducing the TRIM Command
  41. Quiz – Which Data is Left Justified and Which is Right?
  42. Numbers are Right Justified and Character Data is Left
  43. Answer – Which Data is Left Justified and Which is Right?
  44. An Example of Data with Left and Right Justification
  45. A Visual of CHARACTER Data vs. VARCHAR Data
  46. Use the TRIM command to remove spaces on CHAR Data
  47. TRIM Eliminates Leading and Trailing Spaces
  48. Escape Character in the LIKE Command changes Wildcards
  49. Escape Characters Turn off Wildcards in the LIKE Command
  50. Quiz – Turn off that Wildcard
  51. ANSWER – To Find that Wildcard
3. Distinct Vs. Group By
    1. The Distinct Command

2. Distinct vs. GROUP BY
3. Rules of Thumb for DISTINCT vs. GROUP BY
4. GROUP BY Vs. DISTINCT – Good Advice
5. Quiz – How many rows come back from the Distinct?
6. Answer – How many rows come back from the Distinct?
4. The TOP Command
  1. TOP Command
  2. TOP Command is brilliant when ORDER BY is used!
  3. The TOP Command WITH TIES
  4. How the TOP Command WITH TIES Decides
  5. The TOP Command will NOT work with Certain Commands
5. Review
  1. Testing Your Knowledge 1
  2. Testing Your Knowledge 2
  3. Testing Your Knowledge 3
  4. Testing Your Knowledge 4
  5. Testing Your Knowledge 5
  6. Testing Your Knowledge 6
  7. Testing Your Knowledge 7
6. HELP and SHOW
  1. Determining the Release of your Teradata System
  2. Basic HELP Commands
  3. Other HELP Commands
  4. HELP DATABASE
  5. HELP USER
  6. HELP TABLE
  7. Adding a Comment to a Table
  8. Adding a Comment to a View
  9. SELECT SESSION
  10. USER Information Functions
  11. HELP SESSION
  12. HELP SQL
  13. A HELP SQL Example
  14. Show Commands
  15. SHOW Table command for Table DDL
  16. SHOW View command for View Create Statement
  17. SHOW Macro command for Macro Create Statement
  18. SHOW Trigger command for Trigger Create Statement
7. Aggregation Function
  1. Quiz – You calculate the Answer Set in your own Mind
  2. Answer – You calculate the Answer Set in your own Mind
  3. The 3 Rules of Aggregation
  4. There are Five Aggregates
  5. Quiz – How many rows come back?
  6. Troubleshooting Aggregates
  7. GROUP BY when Aggregates and Normal Columns Mix
  8. GROUP BY Delivers one row per Group

9. GROUP BY Dept\_No or GROUP BY 1 the same thing
  10. Limiting Rows and Improving Performance with WHERE
  11. WHERE Clause in Aggregation limits unneeded Calculations
  12. Keyword HAVING tests Aggregates after they are Totaled
  13. Keyword HAVING is like an Extra WHERE Clause for Totals
  14. Getting the Average Values per Column
  15. Average Values per Column for All Columns in a Table
  16. Three types of Advanced Grouping
  17. GROUP BY Grouping Sets
  18. GROUP BY Rollup
  19. GROUP BY Rollup Result Set
  20. GROUP BY Cube
  21. GROUP BY CUBE Result Set
  22. Use the Nexus for all Groupings
  23. Testing Your Knowledge – Basic Aggregation
  24. Testing Your Knowledge – Multiple Aggregates
  25. Testing Your Knowledge- Group By
  26. Testing Your Knowledge – Using a Where Clause
  27. Testing Your Knowledge- Using Having
  28. Final Answer to Test Your Knowledge on Aggregates
8. Join Functions
1. A two-table join using Non-ANSI Syntax
  2. A two-table join using Non-ANSI Syntax with Table Alias
  3. Aliases and Fully Qualifying Columns
  4. A two-table join using ANSI Syntax
  5. Both Queries have the same Results and Performance
  6. Quiz – Can You Finish the Join Syntax?
  7. Answer to Quiz – Can You Finish the Join Syntax?
  8. Quiz – Can You Find the Error?
  9. Answer to Quiz – Can You Find the Error?
  10. Quiz – Which rows from both tables Won't Return?
  11. Answer to Quiz – Which rows from both tables Won't Return?
  12. LEFT OUTER JOIN
  13. LEFT OUTER JOIN Brings Back All Rows in the Left Table
  14. RIGHT OUTER JOIN
  15. RIGHT OUTER JOIN Brings Back All Rows in the RIGHT Table
  16. FULL OUTER JOIN
  17. FULL OUTER JOIN Brings Back All Rows in All Tables
  18. Which Tables are the Left and which are the Right?
  19. Answer - Which Tables are the Left and which are the Right?
  20. INNER JOIN with Additional AND Clause
  21. ANSI INNER JOIN with Additional AND Clause
  22. ANSI INNER JOIN with Additional WHERE Clause
  23. OUTER JOIN with Additional WHERE Clause
  24. OUTER JOIN with Additional AND Clause
  25. Results from OUTER JOIN with Additional AND Clause
  26. Quiz – Why is this considered an INNER JOIN?

27. The DREADED Product Join
28. Result Set of the DREADED Product Join
29. The Horrifying Cartesian Product Join
30. The ANSI Cartesian Join will ERROR
31. Quiz – Do these Joins Return the Same Answer Set?
32. Answer – Do these Joins Return the Same Answer Set?
33. The CROSS JOIN
34. The CROSS JOIN Answer Set
35. The Self Join
36. The Self Join with ANSI Syntax
37. Quiz – Will both queries bring back the same Answer Set?
38. Answer – Will both queries bring back the same Answer Set?
39. Quiz – Will both queries bring back the same Answer Set?
40. Answer – Will both queries bring back the same Answer Set?
41. How would you Join these two tables?
42. How would you Join these two tables? You Can't Yet!
43. An Associative Table is a Bridge that Joins Two Tables
44. Quiz – Can you Write the 3-Table Join?
45. Answer to Quiz – Can you Write the 3-Table Join?
46. Quiz – Can you Write the 3-Table Join to ANSI Syntax?
47. Answer – Can you Write the 3-Table Join to ANSI Syntax?
48. Quiz – Can you Place the ON Clauses at the End?
49. Answer – Can you Place the ON Clauses at the End?
50. The 5-Table Join – Logical Insurance Model
51. Quiz - Write a Five Table Join Using ANSI Syntax
52. Answer - Write a Five Table Join Using ANSI Syntax
53. Quiz - Write a Five Table Join Using ANSI Syntax
54. Answer - Write a Five Table Join Using ANSI Syntax
55. Quiz - Write a Five Table Join Using Non-ANSI Syntax
56. Answer - Write a Five Table Join Using Non-ANSI Syntax
57. Quiz – Re-Write this putting the ON clauses at the END
58. Answer – Re-Write this putting the ON clauses at the END
59. The Nexus Query Chameleon Writes the SQL for Users

## 9. Date Functions

1. Date, Time, and Current\_Timestamp Keywords
2. Dates are stored internally as INTEGERS from a Formula
3. Displaying Dates for INTEGERDATE and ANSIDATE
4. DATEFORM
5. Changing the DATEFORM in Client Utilities such as BTEQ
6. Date, Time, and Timestamp Recap
7. Timestamp Differences
8. Finding the Number of Hours between Timestamps
9. Troubleshooting Timestamp
10. Add or Subtract Days from a date
11. A Summary of Math Operations on Dates
12. Using a Math Operation to find your Age in Years
13. Find What Day of the week you were Born

14. The ADD\_MONTHS Command
  15. Using the ADD\_MONTHS Command to Add 1 Year
  16. Using the ADD\_MONTHS Command to Add 5 Years
  17. The EXTRACT Command
  18. EXTRACT from DATES and TIME
  19. CURRENT\_DATE and EXTRACT or Current\_Date and Math
  20. CAST the Date of January 1, 2011 and the Year 1800
  21. The System Calendar
  22. Using the System Calendar in Its Simplest Form
  23. How to really use the Sys\_Calendar.Calendar
  24. Storing Dates Internally
  25. Storing Time Internally
  26. Storing TIME with TIME\_ZONE Internally
  27. Storing Timestamp Internally
  28. Storing Timestamp with TIME\_ZONE Internally
  29. Storing Date, Time, and Timestamp with Zone Internally
  30. Time Zones
  31. Setting Time Zones
  32. Seeing your Time Zone
  33. Creating a Sample Table for Time Zone Examples
  34. Inserting Rows in the Sample Table for Time Zone Examples
  35. Selecting the Data from our Time Zone Table
  36. Normalizing our Time Zone Table with a CAST
  37. Intervals for Date, Time and Timestamp
  38. Interval Data Types and the Bytes to Store Them
  39. The Basics of a Simple Interval
  40. Troubleshooting the Basics of a Simple Interval
  41. Interval Arithmetic Results
  42. A Date Interval Example
  43. A Time Interval Example
  44. A - DATE Interval Example
  45. A Complex Time Interval Example using CAST
  46. A Complex Time Interval Example using CAST
  47. The OVERLAPS Command
  48. An OVERLAPS Example that Returns No Rows
  49. The OVERLAPS Command using TIME
  50. The OVERLAPS Command using a NULL Value
10. Format Functions
    1. The FORMAT Command
    2. The Basics of the FORMAT Command
    3. Quiz – How will the Date Appear after Formatting
    4. Answer to Quiz – How will the Date Appear after Formatting
    5. Quiz – How will the Date Appear after Formatting
    6. Answer to Quiz – How will the Date Appear after Formatting
    7. Formatting with MMM for the Abbreviated Month
    8. Answer to Quiz – How will the Date Appear after Formatting
    9. Formatting with MMMM for the Full Month Name

10. Formatting with MMMM for the Full Month
  11. Formatting with DDD for the Julian Day
  12. Formatting with DDD for the Julian Day
  13. Formatting with EEE or EEEE for the Day of the Week
  14. EEEE for the Abbreviated or Full Day of the Week
  15. Placing Spaces inside your Formatting Commands with a B
  16. Formatting Spaces with B or b
  17. Formatting with 9
  18. Formatting with 9 Results
  19. Troubleshooting when Formatted Data Overflows
  20. Troubleshooting when Formatted Data Overflows
  21. Formatting with X or x
  22. Formatting with Z
  23. Formatting with Z Visual
  24. Formatting with 9
  25. Formatting with 9 Visual
  26. Formatting with \$
  27. Formatting with \$ Visual
  28. Formatting with \$ and Commas
  29. Formatting with \$ and Commas Visual
  30. Formatting with \$ and Commas and 9
  31. Formatting with \$ and Commas and 9 with Zero Dollars
  32. A Great Formatting Example
  33. A Great Formatting Example for Day, Month, and Year
  34. A Trick to get SQL Assistant to Format Data
  35. Using the CASESPECIFIC (CS) Command in Teradata Mode
  36. Using NOT CASESPECIFIC (CS) in ANSI Mode
  37. Using the LOWER Command
  38. Using the UPPER Command
11. OLAP Functions
1. On-Line Analytical Processing (OLAP) or Ordered Analytics
  2. Cumulative Sum (CSUM) Command and how OLAP Works
  3. OLAP Commands always Sort (ORDER BY) in the Command
  4. Calculate the Cumulative Sum (CSUM) after Sorting the Data
  5. The OLAP Major Sort Key
  6. The OLAP Major Sort Key and the Minor Sort Key(s)
  7. Troubleshooting OLAP – My Data isn't coming back correct
  8. GROUP BY in Teradata OLAP Syntax Resets on the Group
  9. CSUM the Number 1 to get a Sequential Number
  10. A Single GROUP BY Resets each OLAP with Teradata Syntax
  11. A Better Choice – The ANSI Version of CSUM
  12. The ANSI Version of CSUM – The Sort Explained
  13. The ANSI CSUM – Rows Unbounded Preceding Explained
  14. The ANSI CSUM – Making Sense of the Data
  15. The ANSI CSUM – Making Even More Sense of the Data
  16. The ANSI CSUM – The Major and Minor Sort Key(s)
  17. The ANSI CSUM – Getting a Sequential Number

18. Troubleshooting the ANSI OLAP on a GROUP BY
19. The ANSI OLAP – Reset with a PARTITION BY Statement
20. PARTITION BY only Resets a Single OLAP not ALL of them
21. The Moving SUM (MSUM) and Moving Window
22. How the Moving Sum is calculated
23. How the Sort works for Moving SUM (MSUM)
24. GROUP BY in the Moving SUM does a Reset
25. Quiz – Can you make the Advanced Calculation in your mind?
26. Answer to Quiz for the Advanced Calculation in your mind?
27. Quiz – Write that Teradata Moving Average in ANSI Syntax
28. Both the Teradata Moving SUM and ANSI Version
29. The ANSI Moving Window is Current Row and Preceding
30. How ANSI Moving Average Handles the Sort
31. Quiz – How is that Total Calculated?
32. Answer to Quiz – How is that Total Calculated?
33. Moving SUM every 3-rows Vs. a Continuous Average
34. Partition BY Resets an ANSI OLAP
35. The Moving Average (MAVG) and Moving Window
36. How the Moving Average is calculated
37. How the Sort works for Moving Average (MAVG)
38. GROUP BY in the Moving Average does a Reset
39. Quiz – Can you make the Advanced Calculation in your mind?
40. Answer to Quiz for the Advanced Calculation in your mind?
41. Quiz – Write that Teradata Moving Average in ANSI Syntax
42. Both the Teradata Moving Average and ANSI Version
43. The ANSI Moving Window is Current Row and Preceding
44. How ANSI Moving Average Handles the Sort
45. Quiz – How is that Total Calculated?
46. Answer to Quiz – How is that Total Calculated?
47. Quiz – How is that 4th Row Calculated?
48. Answer to Quiz – How is that 4th Row Calculated?
49. Moving Average every 3-rows Vs. a Continuous Average
50. Partition BY Resets an ANSI OLAP
51. The Moving Difference (MDIFF)
52. Moving Difference (MDIFF) Visual
53. Moving Difference using ANSI Syntax
54. Moving Difference using ANSI Syntax with Partition By
55. Trouble Shooting the Moving Difference (MDIFF)
56. Using the RESET WHEN Option in Teradata (V13)
57. How Many Months per Product\_ID has Revenue Increased?
58. The RANK Command
59. How to get Rank to Sort in Ascending Order
60. Two ways to get Rank to Sort in Ascending Order
61. RANK using ANSI Syntax Defaults to Ascending Order
62. Getting RANK using ANSI Syntax to Sort in DESC Order
63. RANK () OVER and PARTITION BY
64. RANK () OVER and QUALIFY



65. RANK () OVER and PARTITION BY with a QUALIFY
  66. QUALIFY and WHERE
  67. Quiz – How can you simplify the QUALIFY Statement
  68. Answer to Quiz – Can you simplify the QUALIFY Statement
  69. The QUALIFY Statement without Ties
  70. The QUALIFY Statement with Ties
  71. The QUALIFY Statement with Ties Brings back Extra Rows
  72. Mixing Sort Order for QUALIFY Statement
  73. Quiz – What Caused the RANK to Reset?
  74. Answer to Quiz – What Caused the RANK to Reset?
  75. Quiz – Name those Sort Orders
  76. Answer to Quiz – Name those Sort Orders
  77. PERCENT\_RANK () OVER
  78. PERCENT\_RANK () OVER with 14 rows in Calculation
  79. PERCENT\_RANK () OVER with 21 rows in Calculation
  80. Quiz – What Cause the Product\_ID to Reset
  81. Answer to Quiz – What Causes the Product\_ID to Reset
  82. Answer to Quiz – What Causes the Product\_ID to Reset
  83. COUNT OVER for a Sequential Number
  84. Troubleshooting COUNT OVER
  85. Quiz – What caused the COUNT OVER to Reset?
  86. Answer to Quiz – What caused the COUNT OVER to Reset?
  87. The MAX OVER Command
  88. MAX OVER with PARTITION BY Reset
  89. Troubleshooting MAX OVER
  90. The MIN OVER Command
  91. Troubleshooting MIN OVER
  92. Finding a Value of a Column in the Next Row with MIN
  93. Finding a Value of a Date in the Next Row with MIN
  94. Finding Gaps between Dates
  95. The CSUM for Each Product\_ID for the First 3 Days
  96. Quiz – Fill in the Blank
  97. Answer to Quiz – Fill in the Blank
  98. The Row\_Number Command
  99. Quiz – How did the Row\_Number Reset?
  100. Quiz – How did the Row\_Number Reset?
  101. Row\_Number with Qualify to get the Typical Rows per Value
  102. A Second Typical Rows per Value Query on Sale\_Date
  103. Testing Your Knowledge
  104. Testing Your Knowledge
  105. Testing Your Knowledge
  106. Testing Your Knowledge
  107. Testing Your Knowledge
  108. Testing Your Knowledge
12. The Quantile Function
    1. The Quantile Function and Syntax
    2. A Quantile Example

3. A Quantile Example using DESC Mode
  4. QUALIFY to find Products in the top Partitions
  5. QUALIFY to find Products in the top Partitions Sorted DESC
  6. QUALIFY to find Products in the top Partitions Sorted ASC
  7. QUALIFY to find Products in top Partitions with Tiebreaker
  8. Using Tertiles (Partitions of Four)
  9. How Quantile Works
13. Temporary Tables
1. There are three types of Temporary Tables
  2. CREATING A Derived Table
  3. Naming the Derived Table
  4. Aliasing the Column Names in the Derived Table
  5. Most Derived Tables Are Used To Join To Other Tables
  6. Multiple Ways to Alias the Columns in a Derived Table
  7. Our Join Example with a Different Column Aliasing Style
  8. Column Aliasing Can Default for Normal Columns
  9. CREATING a Derived Table using the WITH Command
  10. Our Join Example With the WITH Syntax
  11. The Same Derived Query shown Three Different Ways
  12. Quiz - Answer the Questions
  13. Answer to Quiz - Answer the Questions
  14. Clever Tricks on Aliasing Columns in a Derived Table
  15. A Derived Table lives only for the lifetime of a single query
  16. An Example of Two Derived Tables in a Single Query
  17. WITH RECURSIVE Derived Table
  18. Defining the WITH Recursive Derived Table
  19. Looping Through the WITH Recursive Derived Table
  20. Looping Through the WITH Recursive Derived Table
  21. Looping Through the WITH Recursive Derived Table
  22. Looping Through the WITH Recursive Derived Table
  23. Looping Through the WITH Recursive Derived Table
  24. Creating a Volatile Table
  25. You Populate a Volatile Table with an INSERT/SELECT
  26. The Three Steps to Use a Volatile Table
  27. Why Would You Use the ON COMMIT DELETE ROWS?
  28. The HELP Volatile Table Command Shows your Volatiles
  29. A Volatile Table with a Primary Index
  30. The Joining of Two Tables Using a Volatile Table
  31. You Can Collect Statistics on Volatile Tables
  32. The New Teradata V14 Way to Collect Statistics
  33. Four Examples of Creating a Volatile Table Quickly
  34. Four Advanced Examples of Creating a Volatile Table Quickly
  35. Creating Partitioned Primary Index (PPI) Volatile Tables
  36. Using a Volatile Table to Get Rid of Duplicate Rows
  37. Using a Simple Global Temporary Table
  38. Two Brilliant Techniques for Global Temporary Tables
  39. The Joining of Two Tables Using a Global Temporary Table

40. CREATING A Global Temporary Table
14. Sub-query Functions
  1. An IN List is much like a Subquery
  2. An IN List Never has Duplicates – Just like a Subquery
  3. An IN List Ignores Duplicates
  4. The Subquery
  5. How a Basic Subquery Works
  6. The Final Answer Set from the Subquery
  7. Quiz- Answer the Difficult Question
  8. Answer to Quiz- Answer the Difficult Question
  9. Should you use a Subquery of a Join?
  10. Quiz- Write the Subquery
  11. Answer to Quiz- Write the Subquery
  12. Quiz- Write the More Difficult Subquery
  13. Answer to Quiz- Write the More Difficult Subquery
  14. Quiz- Write the Subquery with an Aggregate
  15. Answer to Quiz- Write the Subquery with an Aggregate
  16. Quiz- Write the Correlated Subquery
  17. Answer to Quiz- Write the Correlated Subquery
  18. The Basics of a Correlated Subquery
  19. The Top Query always runs first in a Correlated Subquery
  20. The Bottom Query runs last in a Correlated Subquery
  21. Quiz- Who is coming back in the Final Answer Set?
  22. Answer- Who is coming back in the Final Answer Set?
  23. Correlated Subquery Example vs. a Join with a Derived Table
  24. Quiz- A Second Chance to Write a Correlated Subquery
  25. Answer - A Second Chance to Write a Correlated Subquery
  26. Quiz- A Third Chance to Write a Correlated Subquery
  27. Answer - A Third Chance to Write a Correlated Subquery
  28. Quiz- Last Chance to Write a Correlated Subquery
  29. Answer – Last Chance to Write a Correlated Subquery
  30. Correlated Subquery that Finds Duplicates
  31. Quiz- Write the NOT Subquery
  32. Answer to Quiz- Write the NOT Subquery
  33. Quiz- Write the Subquery using a WHERE Clause
  34. Answer - Write the Subquery using a WHERE Clause
  35. Quiz- Write the Subquery with Two Parameters
  36. Answer to Quiz- Write the Subquery with Two Parameters
  37. How the Double Parameter Subquery Works
  38. More on how the Double Parameter Subquery Works
  39. Quiz – Write the Triple Subquery
  40. Answer to Quiz – Write the Triple Subquery
  41. Quiz – How many rows return on a NOT IN with a NULL?
  42. How to handle a NOT IN with Potential NULL Values
  43. IN is equivalent to =ANY
  44. Using a Correlated Exists
  45. How a Correlated Exists matches up

46. The Correlated NOT Exists
47. The Correlated NOT Exists Answer Set
48. Quiz – How many rows come back from this NOT Exists?
49. Answer – How many rows come back from this NOT Exists?
15. Substrings and Positioning Functions
  1. The CHARACTERS Command Counts Characters
  2. The CHARACTERS Command – Spaces can Count too
  3. The CHARACTERS Command and Char (20) Data
  4. Troubleshooting the CHARACTERS Command
  5. TRIM for Troubleshooting the CHARACTERS Command
  6. CHARACTERS and CHARACTER\_LENGTH equivalent
  7. OCTET\_LENGTH
  8. The TRIM Command trims both Leading and Trailing Spaces
  9. Trim and Trailing is Case Sensitive
  10. Trim and Trailing works if Case right
  11. Trim Combined with the CHARACTERS Command
  12. How to TRIM only the Trailing Spaces
  13. How to TRIM Trailing Letters
  14. How to TRIM Trailing Letters and use CHARACTER\_Length
  15. The SUBSTRING Command
  16. How SUBSTRING Works with NO ENDING POSITION
  17. Using SUBSTRING to move Backwards
  18. How SUBSTRING Works with a Starting Position of -1
  19. How SUBSTRING Works with an Ending Position of 0
  20. An Example using SUBSTRING, TRIM and CHAR Together
  21. SUBSTRING and SUBSTR are equal, but use different syntax
  22. The POSITION Command finds a Letters Position
  23. The POSITION Command is brilliant with SUBSTRING
  24. Quiz – Name that SUBSTRING Starting and For Length
  25. The POSITION Command is brilliant with SUBSTRING
  26. Quiz – Name that SUBSTRING Starting and For Length
  27. Answer to Quiz – Name that Starting and For Length
  28. Answer to Quiz – Name that Starting and For Length
  29. Using the SUBSTRING to Find the Second Word On
  30. Quiz – Why did only one Row Return
  31. Answer to Quiz – Why Did only one Row Return
  32. Concatenation
  33. Concatenation and SUBSTRING
  34. Four Concatenations Together
  35. Troubleshooting Concatenation
16. Interrogating the Data
  1. Quiz – What would the Answer be?
  2. Answer to Quiz – What would the Answer be?
  3. The NULLIFZERO Command
  4. Quiz – Fill in the Blank Values in the Answer Set
  5. Answer to Quiz – Fill in the Blank Values in the Answer Set
  6. Answer to Quiz – Fill in the Blank Values in the Answer Set

7. Quiz – Fill in the Answers for the NULLIF Command
  8. Quiz – Fill in the Answers for the NULLIF Command
  9. The ZEROIFNULL Command
  10. Answer to the ZEROIFNULL Question
  11. The COALESCE Command
  12. The COALESCE Answer Set
  13. The Coalesce Quiz
  14. Answers to the Coalesce Quiz
  15. The Basics of CAST (Convert and Store)
  16. Some Great CAST (Convert and Store) Examples
  17. Some Great CAST (Convert and Store) Examples
  18. Some Great CAST (Convert and Store) Examples
  19. A Teradata Extension – The Implied Cast
  20. The Basics of the CASE Statements
  21. The Basics of the CASE Statement shown visually
  22. Valued Case vs. Searched Case
  23. Quiz - Valued Case Statement
  24. Answer - Valued Case Statement
  25. Quiz - Searched Case Statement
  26. Answer - Searched Case Statement
  27. Quiz - When NO ELSE is present in CASE Statement
  28. Answer - When NO ELSE is present in CASE Statement
  29. When an ELSE is present in CASE Statement
  30. When NO ELSE is present in CASE Statement
  31. When an Alias is NOT used in a CASE Statement
  32. When an Alias is NOT used in a CASE Statement
  33. When NO ELSE is present in CASE Statement
  34. Combining Searched Case and Valued Case
  35. A Trick for getting a Horizontal Case
  36. Nested Case
  37. Put a CASE in the ORDER BY
17. View Functions
1. Creating a Simple View
  2. Basic Rules for Views
  3. How to Modify a View
  4. Exceptions to the ORDER BY Rule inside a View
  5. How to Get HELP with a View
  6. Views sometimes CREATED for Formatting or Row Security
  7. Another Way to Alias Columns in a View CREATE
  8. Resolving Aliasing Problems in a View CREATE
  9. Resolving Aliasing Problems in a View CREATE
  10. Resolving Aliasing Problems in a View CREATE
  11. CREATING Views for Complex SQL such as Joins
  12. WHY certain columns need Aliasing in a View
  13. Aggregates on View Aggregates
  14. Locking Row for Access
  15. Creating Views for Temporal Tables

16. Altering a Table
17. Altering a Table after a View has been created
18. A View that errors After an ALTER
19. Troubleshooting a View
20. Updating Data in a Table through a View
21. Maintenance Restrictions on a Table through a View
18. Macro Functions
  1. The 14 rules of Macros
  2. CREATING and EXECUTING a Simple Macro
  3. Multiple SQL Statements inside a Macro
  4. Complex Joins inside a Macro
  5. Passing an INPUT Parameter to a Macro
  6. Troubleshooting a Macro with INPUT Parameters
  7. Troubleshooting a Macro with INPUT Parameters
  8. An UPDATE Macro with Two Input Parameters
  9. Executing a Macro with Named (Not Positional) Parameters
  10. Troubleshooting a Macro
19. Set Operators Functions
  1. Rules of Set Operators
  2. INTERSECT Explained Logically
  3. INTERSECT Explained Logically
  4. UNION Explained Logically
  5. UNION Explain

## Class Materials

Each student will receive a comprehensive set of materials, including course notes and all the class examples.