Teradata 14 Certification Exams Objectives

The high level objectives represent the general content areas. The more detailed information below the objective indicates representative topic areas. All Teradata 14 functions and features that fall within the stated objective areas are eligible topics on an exam.

TE0-143 Teradata 14 Physical Design and Implementation

- Physical Database Design Overview
  - Describe the inputs, outputs, and objectives for physical database design.
  - Determine when denormalization is appropriate.
  - Identify the types of derived data and how to manage them.
  - Describe the effects of denormalization on data integration.
  - Explain the effects of the Primary Key and Unique constraints on physical design.
  - Given a scenario about designing a database hierarchy, identify the characteristics of databases and users.
  - Explain the effect of the Primary Index choices on physical design.
- Table Attributes
  - Describe the temporary table options and their advantages and disadvantages.
  - Describe table-level options.
  - Given a scenario, determine the performance impact of using a Set or Multiset table.
  - Given a scenario, describe the use of a Queue Table.
  - Given a scenario, determine when it is appropriate to ALTER a table vs. CREATE a new PPI or NPPI table.
  - Identify table-level options that minimize table fragmentation.

- When performing a CREATE TABLE AS, identify possible skewing risks.
- Column Attributes
  - Describe the performance considerations of Referential Integrity.
  - Describe the performance characteristics of UNICODE character sets.
  - Given a scenario, identify which data types are appropriate.
- Statistics
  - Given a scenario, identify columns that are appropriate for statistics collection.
  - Given a scenario, describe conditions where stale stats can impact performance.
  - Determine when multi-column statistics are useful.
  - Identify the utilities available to determine which statistics are useful.
  - Identify when SAMPLE statistics are sufficient.
  - Identify when SUMMARY statistics are sufficient.
  - Identify when MAXINTERVALS are useful.
  - Identify how ROLLUP Optimization can improve collect times.
  - Describe the tables and views used for Statistics Collection.
  - Interpret the output of SHOW and HELP STATISTICS statements.
- Primary Indexes
  - Given a scenario, identify when to use a UPI.
  - Given a scenario, identify when to use a NUPI.
  - Given a scenario, identify when to use a NoPI.

- Table Partitioning
  - Given a scenario, identify when to use a PPI.
  - Given a scenario, identify when to use a MLPPI.
  - Given a scenario, identify when to use Column Partitioning (CP).
  - Given a scenario, identify when to use a Character PPI.
  - Identify issues to consider when using NO RANGE on PPI tables.
  - Describe how to construct the partitioning expression for a PPI table.
  - Given a scenario, describe the effects of altering a partitioning expression.
  - Given a scenario, describe the effects of using the ALTER TABLE TO CURRENT.
- Compression
  - Identify the techniques to determine candidate columns for Multivalued compression (MVC).
  - Identify the table level compression options (e.g., Block Level Compression (BLC) and Temperature-based Block Level Compression (TBBLC)).
  - Identify the column level compression options (e.g., Multivalued compression (MVC) and algorithmic Compression (ALC).
  - Given a scenario, determine the most effective columns available for compression.
  - Given a scenario, identify when to use the NO AUTO compress option for Column Partitioning.
- Secondary Indexes
  - Given a scenario, identify when to use USIs.
  - Given a scenario, identify when to use NUSIs.
- Other Index Types
  - Given a scenario, identify when to use STJIs.

- Given a scenario, identify when to use a non-compressed join index vs. a compressed join index.
  - Given a scenario, identify when to use AJIs.
  - Given a scenario, identify when to use Multi-table Join Indexes.
  - Given a scenario, identify when to create an index that covers queries.
- Physical Database Operations
  - Explain the effects of row access, selection, aggregation, and selectivity on query optimization.
  - Explain partial value searches and data conversions on index utilization.
  - Identify the effects of conflicting implicit data type conversions.
  - Given a scenario, identify if skewed processing will occur.
  - Given a scenario, identify a design strategy to efficiently join tables together.
- Teradata Query Analysis
  - Interpret the EXPLAIN syntax.
  - Interpret the EXPLAINs of Joins.
  - Determine the methods to uncover embedded (nested) views.
  - Interpret DBQL output.
  - Identify the utilities available to perform Query Analysis.

Keywords: Teradata Analyst Pack, Viewpoint

- Temporal Design Considerations
  - Given a scenario, design an effective VALIDTIME table.
  - Given a scenario, design an effective TRANSACTIONTIME table.

- Given a scenario, design a temporal table.
- Given a scenario, design a temporal view using CURRENT time.
- Given a scenario, design a SEQUENCED or NON-SEQUENCED temporal view.
- Given a scenario, determine an effective method for implementing an AS OF view.