

### UNIQUE FEATURES OF VINAY TECH HOUSE:

- COMPLETELY PRACTICAL, REAL TIME AND PROJECT ORIENTED
- RICH THEORY WITH OPTIMIZATION TECHNIQUES
- CERTIFICATION BASED TRAINING\*\*\*
- VIEW POINT BASED EXPLANATION \*\*\*
- TERADATA PROJECT ENVIRONMENT, EXPLAINING MULTIPLE PROJECTS
- RESUME GUIDANCE AND MOCK INTERVIEWS
- TOP NOTCH COMPANIES, MULTIPLE CMM LEVEL COMPANIES DIRECT RECRUITMENT.

### ADDITIONAL SESSIONS ALONG WITH TERADATA MAIN COURSE:

- DATAWAREHOUSE FUNDAMENTALS
- DATA MODEL FUNDAMENTALS
- DWH & BI PROJECT ENVIRONMENT EXPLANATION
- TERADATA TESTING APPROACH
- TERADATA PROJECT EXPLANATION

### SOFTWARE AND MATERIALS (FREE)

- DEMO SOFTWARE FOR PRACTICE
- PRACTICAL MATERIAL CHAPTER WISE
- SOFTCOPY MATERIAL WITH EACH TOPIC WISE THEORY, DIAGRAMS AND OPTIMIZATIONS
- PDFS AND PPTS WITH DIAGRAMATIC PRESENTATIONS.
- VIDEOS FOR MISSING CLASSES \*\*\*

### BLOGS

- [WWW.TERADASTUDENTS.BLOGSPOT.IN](http://WWW.TERADASTUDENTS.BLOGSPOT.IN)

### TERADATA DEMO, DATA WAREHOUSE AND DATA MODEL FUNDAMENTALS

#### IT Data Fundamentals & TERADATA Existence

- ❖ Data, Data Availability in IT
- ❖ IT data storage areas
- ❖ Data warehouse, BI definitions and layers
- ❖ Teradata existence in IT, Product services
- ❖ Teradata Definition
- ❖ Teradata Tools and Components
- ❖ Teradata Opportunities

Creative visualization through screen shots

#### TERADATA and Competitiveness

- ❖ What are BI, OLAP, and OLTP? Importance in the current Enterprise? Competitive advantages
- ❖ TERADATA vs Other DATABASES
- ❖ SQL History, SQL Extensions and Teradata detailed history
- ❖ Hardware, Software requirements
- ❖ Nodes and installation methods

#### Teradata practical components explanation

- ❖ Bynet Driver, Teradata Database
- ❖ Teradata Express tools
- ❖ Teradata Load, Unload & Admin Tools
- ❖ Teradata Viewpoint and other tools

#### Data warehousing fundamentals

- ❖ Data definitions
  - (Data, Information, BI, Mining, ODS, DSS, Analysis, OLTP, OLAP, OLCP)
- ❖ Dwh Characteristics, Principles
- ❖ Dwh approaches (Top down/Bottom up)
- ❖ Dwh Life Cycle steps
- ❖ Data Mart & Types
- ❖ Data Processing Types (OLAP)
- ❖ Granularity and various granularities
- ❖ Diff between OLTP and OLAP

Creative visualization through screen shots

Huge discussion on DWH projects

#### Dimensional Modeling Fundamentals

- ❖ Dimension, Dimension Table & types
- ❖ Fact, Fact Table & measures types
- ❖ Fact less fact table
- ❖ Various schemas (Star, Snow Flake, Galaxy & Hybrid )
- ❖ Surrogate key and usages in real time
- ❖ Model, Business, Conceptual, Logical, Physical Data Models

Real time project tables, models and design

Huge discussion on Project Data Designs

### (DBA PART1: PERFORMANCE TUNING DBA)

#### 1. Prerequisites and Start up

- ❖ What is Teradata Datawarehouse?
- ❖ Teradata presence in IT.
- ❖ Teradata vs Other Databases.
- ❖ Teradata Competitive advantages.
- ❖ Teradata Capabilities and Limits.
- ❖ Teradata 15 & Other versions( 14,13.10,13,12)
- ❖ Teradata History and Real time running versions
- ❖ Teradata View Point Features (Web based management tool)\*\*\*
- ❖ Descriptions on Golden Gate and Data Mover\*\*\*
- ❖ Loading Types (Truncate, SCD, CDC etc..)
- ❖ HW and SW requirements & installation steps
- ❖ DBA Over view (System DBA & Application DBA)

#### Discussion on Interview and Certification questions

#### 2)Teradata Single ,Multi and Cloud System

- ❖ Node Architecture(Shared Nothing)
- ❖ SMP Architecture
- ❖ MPP Architecture
- ❖ Cloud Architecture (Teradata 14)
- ❖ Discussion on real time no of AMPs and Nodes

#### Real time Project Configurations

#### 3)Teradata Components and Explanation

- ❖ PDE(Parallel Data Extension),
- ❖ Vprocs (Virtual Processors)
- ❖ TPA (Trusted Parallel Application)
- ❖ PE(Parsing Engine)
- ❖ AMP(Access Module Processing)
- ❖ BYNETs (Board less, Board Oriented)
- ❖ TDP (Teradata Directory Program)
- ❖ CLI(Call Level Interface),
- ❖ VSS (Virtual Storage System)\*\*\*

#### Discussion on Certification & Interview questions Explaining various organization configurations

#### 4) Teradata Server, Client and Pre-requisites

- ❖ Server start, stop, pause in Linux & Windows
- ❖ Client tools to operate [GUI, Wizard, CUI]
- ❖ Teradata Sql-Assistant, BTEQ, Query Studio
- ❖ Teradata Viewpoint Overview and Portlets
- ❖ Open Database Connectivity (ODBC), OLEDB
- ❖ Working with Sql-Assistant, BTEQ
- ❖ Transaction Modes [BTET, ANSI]
- ❖ Single, Multi Statement request operations
- ❖ Normal and Bulk Load/Unload
- ❖ Command, Query and Request Processing

#### Practical on this with case studies

#### 5) Teradata Indexes (Primary & Secondary)

##### Primary Index

- ❖ Unique Primary Index (UPI)
- ❖ Non Unique Primary Index (NUPI)
- ❖ Partitioned Primary Index (PPI) (Range\_N, Case\_N, Multi Valued PPI \*\*\*)
- ❖ NOPI (No Primary Index)\*\*\*
- ❖ Full Uniform Distribution vs Skewed distribution.
- ❖ Skewness and Skewfactor

##### Secondary Index

- ❖ Unique Secondary Index (USI)
- ❖ Non Unique Secondary Index(NUSI)
- ❖ Value Ordered Secondary Index (VOSI)
- ❖ Hash Index (HI)
- ❖ Join Index (JI) and Types

(Single, Multi, Sparse, Aggregate)

Full Table Scan(FTS) - Execution process

#### Diagrammatic explanation, syntaxes and practical.

#### Performance improvement indexes and tuning them.

### 6) Locks, Data Recovery and Protection

- ❖ Object Locks -Access, Read, Write, Exclusive, Hut
- ❖ NO Wait ,Pseudo table lock
- ❖ HSA,HSN (Hot Stand By AMP,NODE)
- ❖ RAID1 ,RAID5 , Disk Arrays
- ❖ Fall Back , AMP Clustering
- ❖ Clique
- ❖ Images (Single , Dual , Before, After)
- ❖ Journals ( Recovery , Transient and Permanent Journals ,Write ahead logging)

#### Real time usages and detailed practices

### 7) Performance Tuning

- ❖ Scripts and Queries Bottlenecks
- ❖ Explain request modifier
- ❖ Explain plan steps explanation
- ❖ Join Strategies
  - Product Join Strategy
  - Merge Join Strategy
  - Nested Join Strategy
  - Row Hash Join Strategy
- ❖ Collect statistics, Collecting and Updating
- ❖ Recommendations for statistic columns
- ❖ Diagnostic Help Stats Command and Stats wizard
- ❖ Skewness and Skew factor
- ❖ More memory & Out of Spool memory issue
- ❖ Hash functions (Hashrow, HashAmp, HashBucket )
- ❖ Performance monitor, Explaining various tabs
- ❖ ViewPoint various portlets for performance
- ❖ General Query Tuning tips in various Sql constructs

### (DBA PART2: APPLICATION DBA)

#### 1) Building TD database environment

- ❖ Initial Teradata database structure
- ❖ Administrative user creation and usages
- ❖ Owners , Parents and children Memory management (Permanent, Spool and Temporary)
- ❖ Drop and Delete Statements (Users & Databases)

#### Real time users and databases with practical.

#### 2) Teradata Accounting

- ❖ Create user statement with accounting
- ❖ System accounting, views and usages
- ❖ DBC.AccountInfo(X) view
- ❖ DBC.AMPUsage view
- ❖ Account String Expansion, advantages

#### Real time accounting with scenarios.

#### 3) Users, Databases and Data Dictionary

- ❖ Create database and user statements
- ❖ Password Encryption and Security
- ❖ Profiles and usages
- ❖ Create Profile syntaxes and GUI
- ❖ Impact profiles on users, password attributes
- ❖ Data Dictionary, [Non]Fallback protected
- ❖ Updating data dictionary tables
- ❖ System Views, [non]Restricted views
- ❖ Databases, Users and Children views

#### Real time users, databases with scenarios.

#### 4) Other Admin tools

- ❖ Teradata Administrator
- ❖ Performance Monitor {PMON}
- ❖ Statistics Wizard
- ❖ Index Wizard , Visual Explain

### 5) Access Rights

- ❖ Privileges / Access rights mechanisms
- ❖ Implicit ,Explicit and Automatic access rights
- ❖ Granting right, Grant public
- ❖ Revoke statement ([non] existent object)
- ❖ Inheriting access rights
- ❖ Give statement and access rights
- ❖ Removing level in the hierarchy
- ❖ Roles, Advantages
- ❖ Access rights without roles
- ❖ Access rights using a role
- ❖ SQL Statements for roles (Grant ,Revoke)
- ❖ Steps to implement roles
- ❖ Using views to limit access
- ❖ Macros and Procedures to control access
- ❖ System views for access rights
- ❖ Allrights and user rights views
- ❖ DBC.Usergrantedrights view
- ❖ Roleinfo(X) view, Rolemembers(X) view
- ❖ **Practical on these features**

### 6) Access and Query Logging [DBQL]

- ❖ Access Logging in detail
- ❖ DBQL tables usage
- ❖ Begin and End Logging
- ❖ **Real time logging and DBQL operations.**

### 7) DBC Control Utilities

- ❖ DBS Control Records
- ❖ PackDisk
- ❖ Checktable
- ❖ ScanDisk
- ❖ Ferrot
- ❖ Showlocks
- ❖ Table ReBuild
- ❖ Recovery Manager

### 8) Recovery tools

- ❖ Teradata Data Protection
- ❖ Netvault, Net Backup tools Architectures in Mainframe & Unix

### 9) Achieving Data

- ❖ ARC Utility ,Phases and Statement
- ❖ Archive Objects ,Levels ,Options ,Types

### 10) Restoring Data

- ❖ Restore statement , tables
- ❖ Copy statement , tables
- ❖ Build statement,
- ❖ Hut Locks
- ❖ Release lock statement
- ❖ **Practical on these statements**

### 11) Starting /Restarting /Stopping Database

- ❖ Database Supervisory Window
- ❖ Database Set up,
- ❖ Operations on Windows, Unix among more

- ❖ **Practical on these features**

### 12) VIEW POINT, PORTAL PAGE & PORTLETS

- ❖ View Point description
- ❖ Rewind, Pause,Stop and Abort
- ❖ View Point configuration
- ❖ System Health Portlet
- ❖ Teradata Workload analyzer
- ❖ Unity Director
- ❖ Unity Ecosystem Manager
- ❖ Unity Data Mover
- ❖ Remote Control
- ❖ Alert viewer
- ❖ SQL ScratchPad
- ❖ Workload Management
- ❖ Query Monitor
- ❖ Query Groups
- ❖ Data Labs
- ❖ Administration Portlets (Backup, General etc...)
- ❖ Teradata Active System Management (TASM)

**Practical with real time case studies**

**VINAY TECH HOUSE**

**TERADATA COURSE CONTENT**

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