VEER NARMAD SOUTH GUJARAT UNIVERSITY

Syllabus

MCA (5TH Semester)

PAPER : 503 : Distributed Databases

1. Distributed Databases and Distributed Processing

1.1 Introduction & Recent Trends in Distributed Databases
1.2 Types of Distributed Databases
1.3 Distributed DBMS Architectures
1.4 Storing Data
1.5 Distributed Catalog Management

2. Distributed Database System Application Development

2.1 Factors Affecting the Distribution of an Application's Data
2.2 Controlling Connections Established by Database Links
2.3 Referential Integrity in a Distributed System
2.4 Distributed Queries
2.5 Distributed Joins , Semijoin , Bloomjoin
2.6 Distributed Query Optimization
2.7 Updating Distributed Data
2.8 Handling Errors in Remote Procedures

3. Replication

3.1 Distributed Databases and Database Replication
3.2 Synchronous Replication
3.3 Cost of Synchronous Replication
3.4 Asynchronous Replication
3.5 Peer-to-Peer Replication
3.6 Primary Site Replication
3.7 Implementing the Capture Step
3.8 Implementing the Apply Step
3.9 Data Warehousing and Replication

4. Distributed Transactions

4.1 Distributed Transaction Management
4.2 The Prepare and Commit Phases
4.3 Prepare Phase
4.4 Commit Phase
4.5 The Session Tree
4.6 Clients

6.4 Creating Global Users
6.5 Authenticating Global Users
6.6 Global Roles
6.7 Creating Global Roles
6.8 Granting Privileges to Global Roles
6.9 Assigning Global Roles to Global Users
6.10 Enterprise Roles
6.11 Trusting other Databases
6.12 Trust Between more than Two Databases
6.13 Administering Trust

Refrences :-

1. M. Tamer Ozsu, Patrick Valdueriez : Principles of Distributed Database Systems, Prentice Hall
2. Gray J. A. Reuter : Transaction Processing : Concepts and Techniques, Morgan Kauffman
3. Stefans Ceriand Gioesppe Pelagati : Distributed Databasses : Principles and Systems, Mc Graw Hill
4. Donald K Burleson : Managing Distributed Databases: Building Bridges between Database Islands

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PAPER : 504 : Advanced Database Administration

1. Oracle Creating an Database

- 1.1 Initialisation parameters and database creation
- 1.2 Troubleshooting database creation
- 1.3 Managing initialisation parameters using a server parameter file
- 1.4 Defining application services for Oracle Database 10g

2. Starting up and shutting down the database

- 2.1 Options
- 2.2 Altering database availability
- 2.3 Quiescing a database

3. Managing Oracle Databases processes

- 3.1 Dedicated and shared server processes
- 3.2 Configuring Oracle database for shared server
- 3.3 Monitoring the operation of the database

4. Oracle Database Structure & Storage

- 4.1 Managing Control files
- 4.2 Managing Redo log
- 4.3 Managing Archived Redo logs
- 4.4 Managing Tablespaces
- 4.5 Managing Datafiles & Tempfiles
- 4.6 Managing Undo Tablespace

5. Automated File & Storage Management

- 5.1 Using Oracle Managed Files
- 5.2 Using Automatic Storage Management

6. Schema Objects

- 6.1 Managing space for schema objects
- 6.2 Managing Tables
- 6.3 Managing Partitioned Tables and Indexes
- 6.4 Managing Clusters, Hash Clusters, Views, Synonyms & sequences
- 6.5 Detecting and repairing data block corruption

7. Managing Users and securing the Database

8. Overview of Scheduler Concepts

9. Automatic Database Diagnostic Monitor

10. Automatic Tuning Optimiser

11. Automatic Shared memory tuning

12. Automatic Backup & Recovery

REFRENCES :-

1. Rick Greenwald, Robert Stackowiak, Jonathan Stern : Oracle Essentials : Oracle Database 10g – O'Reilly
2. Gavin Powell : Oracle High Performance Tuning for 9i and 10g – Digital Press
3. Loney, Kevin, Bryla, Bob : Oracle Database 10g, DBA Handbook – Oracle Press
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PAPER : 505 : Data Warehouse & Data Mining

1. Introduction

- 1.1 Data Warehouse characteristics
- 1.2 Data Marts

2. Online Analytical Processing

- 2.1 OLTP and OLAP systems
- 2.2 Star schema for multidimensional view
- 2.3 Multifact star schema or snow flake schema
- 2.4 OLAP Tools

3. Developing A Data Warehouse

- 3.1 Building a Data Warehouse
- 3.2 Architectural strategies & Design issues
- 3.3 Data Content
- 3.4 Metadata
- 3.5 Distribution of data
- 3.6 Tools for Data Warehousing
- 3.7 Performance considerations

4. Data Mining

- 4.1 Introduction
- 4.2 Data Description
  - 4.2.1 Clustering
  - 4.2.2 Link Analysis
- 4.3 Predictive Data Mining
  - 4.3.1 Classification
  - 4.3.2 Regression
  - 4.3.3 Time Series
- 4.4 Models & Patterns
  - 4.4.1 Decision Trees
  - 4.4.2 Multivariate adaptive regression splines
  - 4.4.3 Rule Induction
  - 4.4.4 K-nearest neighbour and memory based reasoning
  - 4.4.5 Logistic regression
  - 4.4.6 Discriminant Analysis
  - 4.4.7 Generalized Adaptive models
  - 4.4.8 Genetic algorithms
  - 4.4.9 Pattern Structures
    - 4.4.9.1 Patterns in Data Matrices
    - 4.4.9.2 Patterns for Strings

5. Applications of Data Warehousing and Data Mining

REFRENCES :-

1. R. Kinball: Data Warehouse Toolkit – John Wiley & Sons
2. Efrem G. Mallach : Decision Support and Data Warehouse Systems – TMH
3. Paulraj Pulliah : Data Warehousing Fundamentals – Wiley
4. S. Anahory & D. Murray: Data Warehousing in the real world – Addison Wesley
5. R. Kinball, L.Reeves : The Data Warehouse Lifecycle Toolkit – John Wiley & Sons.
6. David Hand, Heikki Mannila,Padhraic Smyth : Principles of Data Mining- PHI
7. C.S.R.Prabhu : Data Warehousing – PHI
8. Hillol Kargupta, Anupam Joshi, Yelena Yesha, Krishnamoorthy Sivakumar : Data Mining Next Generation Challenges & Future Directions – PHI
9. Dunham : Data Mining Introductory and Advanced Topics - Pearson