Course No: MCA-4T3
Course Title: Data Warehousing and Data Mining.

Unit I

Introduction to Data Warehousing , A paradigm shift , Data warehouse definition , Data Warehouse Architecture , Data Warehouse Database , Sourcing , Acquisition , Cleanup and Transformation Tools , Metadata , Access Tools , Data Marts , Data Warehouse Administration and Management , Information Delivery System.

Building a Data Warehouse : Business Considerations , Design Consideration , Technical Considerations , Implementation Considerations , Integrated Solutions , Benefits of Data Warehousing. Mapping Data Warehousing to Multiprocessor Architecture , Relational Database Technology for Data Warehouse , Databases Architectures for Parallel Processing , Parallel DBMS features , DBMS Schemas for Decision Support, Data Extraction , Cleanup and transformational tools. , Metadata.

Unit II

Reporting and Query Tools and Applications : Tools Categories , The need for applications , Cognos Impromptu , Applications , OLAP , the need for OLAP , Multidimensional Data Model , OLAP Guidelines , Categorization of OLAP tools , State of the Market , OLAP tools and the internet , Dr E.F. Codds 12 guidelines for OLAP , Patterns and Models , Sampling

Unit III

Statistics : Data Counting and Probability , Hypothesis testing , contingency tables , the chi square test and noncasual relationships , prediction , Artificial Intelligence : Definition , Expert Systems , Fuzzy logic , The rise and fall of AI .

Data Mining : Introduction , Decision Trees , How Decision Trees work , Case Study ,

Neural Networks , How neural networks work , Case Study , Nearest Neighbour and Clustering , Case Study , Genetic Algorithms : working and a case study

Unit IV

Rule Induction , The General Idea , Application , Working , Case Study , Strengths and weaknesses. Selecting and Using the right technique , Data Mining in the Business Process , The Case of Embedded Data Mining , How to measure Accuracy , Explanation and integration , What future holds for Embedded Data Mining. Data Visualization and Overall Perspective. Data Visualization Principles , Parallel Coordinates , Visualizing Neural networks , State of the industry. Designing for scalability , Data Quality , Implementation notes , Making most of Data warehouse , Costs and Benefits m Distributed Data warehouse Environments , Object Relational Databases ,VLDBS.

Text Book : Alex Berson , Stephen J. Smith " Data Warehousing , Data Mining and OLAP , Tata McGraw Hill , 2004 Tenth reprint 2007.
Reference:
PaulrajPooniah , " Data Warehousing Fundamentals " Wiley
Sam Anahory , Dennis Murray ," Data Warehousing in the real world " , Pearson Education.