BCA 5th

Advance RDBMS

Data Processing Systems. Transaction Processing and Concepts: Transaction system, Testing of seralizability, Seralizability of schedules, conflict and view seralizable schedule, recoverability, Recovery form transaction failures, deadlock handling .

File processing system. File Management system. Components of RDBMS. Database Architecture.

Object Oriented Databases. Distributed Databases. Client/server database. Data Dictionary. Database models. Normalization. The Database Administration. Database Manager responsibilities. Monitoring Database performance. Database Machine overview.

Designing RDBMS for organization. Object modeling. Perspectives of Data Modelling.

Evolving the logical model. Transformation from Logical to Phical model.

Concurrency Control Techniques: Concurrency control, locking Techniques for concurrency control. CODD's 12 rules for a fully relational DBMS.

Data Integrity. Redundancy. Primary and Foreign keys.

Object database management. Database design and choosing the database server.

SQL and MySql. Database access and ODBC.

Middleware: Kinds of middleware. Sockets-talking to database, virtual database engine defined, web based middleware, Microsoft JET engine,

Database security and Recovery. Data Mining and Warehouse

C#

Language Basics: Datatypes & Variables Declaration , Implicit and Explicit Casting , Checked and Unchecked Blocks – Overflow Checks , Casting between other datatypes, Boxing and Unboxing , Enum and Constant , Operators , Control Statements , Working with Arrays, Working with Methods , Pass by value and by reference and out parameters

Features of Object Oriented programming

Exception Handling: What is Exception , Rules for Handling Exception , Exception classes and its important properties, Understanding & using try, catch keywords , Throwing exceptions, Importance of finally block , "using" Statement , Writing Custom Exception Classes.

Working With Collections and Generics: Importance of IList and IDictionary., Using ArrayList and Hashtable. , Understanding IEnumerable and IEnumerator. Sorting Items in the collection using IComparable. Typesafety issue with ArrayList and Hashtable classes. Writing custom generic classes. Working with Generic Collection Classes. Operator Overloading, Partial Class, Attributes, Reflection, Configuration

WinForms: Introduction, Controls, Menus and Context Menus, MenuStrip, ToolbarStrip. Graphics and GDI , SDI and MDI Applications , Dialogbox (Modal and Modeless)

Form Inheritance, Developing Custom, Composite and Extended Controls Other Misc topics., Working with Resource Files , Working with Settings

Fuzzy Logic & Neural Network

Statistical concepts and Reasoning theories. Probability and Bayes' Theorem. Certainity factors and Rule-Based systems. Bayesian networks.

Working of Human Mind. Discourse and Pragmatic processing. Semantic Nets and Frames. Fundamentals of Neural networks and Building techniques. Discovery and Analogy. Neural net learning and Genetic learning. Formal learning theory.

A.I. techniques, pattern recognition, Level of, speech recognition representation in A.I. properties of internal representation. Introduction to Predicate Calculus: Predicates and Arguments, connectives, Simplifications of strategies, extracting answers from Resolution Refutation. Control strategies.

Dempster-Shafer Theory. Parallelism in Reasoning system. Distributed reasoning systems. Default reasoning, default logic. Logics for non monotonic reasoning. Symbolic techniques for representing and using uncertain knowledge. Definition, Concept, and framework of Fuzzy Logic. Fundamental changes to the idea about Set membership and corresponding changes to the definition of Logic Operations. Defining fuzzy sets, used in representing a list of Propositions.

Commonsense ontologies. Memory organization. Case based reasoning. Perception. Robot Architectures. Graphical representation of networks. Matching. Forward and backward production system. Using deduction systems to generate Robot Plans. Heuristic graph search process .

Real Life Applications of Fuzzy Logic and Neural Networks.

Software Testing

Introduction

Strategic Approach to Software Testing, Test Strategies for Conventional Software, Validation Testing, System Testing, Basic Terminologies, V Shaped Software Lifecycle Model

Functional Testing\ Black-box Testing

Boundary Value Analysis, Equivalence Class Testing, Decision Table Based Testing

Structural Testing\ White-box Testing

Basis Path Testing: Program Graph, DD Path graph, Cyclomatic Complexity, Graph Matrices, Control Flow Testing: Statement Coverage, Branch Coverage, Condition Coverage, Path Coverage