

DETAILS OF LAB

MC1606 DATA STRUCTURES LABORATORY

0 0 3 100

1. Represent the given sparse matrix using one dimensional array and linked list.
2. Create a Stack and do the following operations using arrays and linked lists
(i)Push (ii) Pop (iii) Peep
3. Create a Queue and do the following operations using arrays and linked lists
(i)Add (ii) Remove
4. Implement the operations on singly linked list, doubly linked list and circular linked list.
5. Create a binary search tree and do the following traversals
(i)In-order (ii) Pre order (iii) Post order
6. Implement the following operations on a binary search tree.
(i) Insert a node (ii) Delete a node
7. Sort the given list of numbers using heap and quick sort.
8. Perform the following operations in a given graph
(i) Depth first search (ii) Breadth first search
9. Find the shortest path in a given graph using Dijkstra algorithm

Total : 45

1. Display the following:
 - (i) Floyd's triangle (ii) Pascal Triangle

2. Generate the following series of numbers:
Armstrong numbers between 1 to 100
Prime numbers between 1 to 50
Fibonacci series up to N numbers

3. Manipulate the strings with following operations.
 - (i) Concatenating two strings (ii) Reversing the string (iii) Finding the substring
 - (iv) Replacing a string (v) Finding length of the string

4. Find the summation of the following series:
 - (i) Sine (ii) Cosine (iii) Exponential

5. Create the sales report for M sales person and N products using two dimensional array.

6. Simulate following Banking operations using functions.
 - (i) Deposit (ii) Withdrawal (iii) Balance Enquiry

7. Implement using recursion
 - I, Find the solution of Towers of Hanoi problem using recursion.
 - II, Fibonacci number generation.
 - III, Factorial

8. Generate Student mark sheets using structures.

9. Create a collection of books using arrays of structures and do the following:
 - (i) Search a book with title and author name (ii) Sorts the books on title.

Total : 45 hours

MC1656 OBJECT ORIENTED PROGRAMMING LAB**0 0 3 100**

1. Programs using Constructor and Destructor.
2. Creation of classes and use of different types of functions.
3. Count the number of objects created for a class using static member function.
4. Write programs using function overloading and operator overloading.
5. Programs using inheritance.
6. Program using friend functions.
7. Program using virtual function.
8. Write a program using exception handling mechanism.
9. Programs using files.
10. Programs using function templates.

MC1657**DBMS Lab****0 0 3 100**

1. Execute a single line and group functions for a table.
2. Execute DCL and TCL Commands.
3. Create and manipulate various DB objects for a table.
4. Create views, partitions and locks for a particular DB.
5. Write PL/SQL procedure for an application using exception handling.
6. Write PL/SQL procedure for an application using cursors.
7. Write a DBMS program to prepare reports for an application using functions.
8. Write a PL/SQL block for transaction operations of a typical application using triggers.
9. Write a PL/SQL block for transaction operations of a typical application using package.
10. Design and develop an application using any front end and back end tool (make use of ER diagram and DFD).

Typical Applications – Banking, Electricity Billing, Library Operation, Pay roll, Insurance, Inventory, etc.

MC1658

ALGORITHMS LAB

0 0 3 100

1. Apply the divide and Conquer technique to arrange a set of numbers using merge sort method.
2. Perform Strassen's matrix multiplication using divide and conquer method.
3. Solve the knapsack problem using greedy method.
4. Construct a minimum spanning tree using greedy method.
5. Construct optimal binary search trees using dynamic programming method of problem solving.
6. Find the solution for traveling salesperson problem using dynamic programming approach.
7. Perform graph traversals.
8. Implement the 8 Queens Problem using backtracking.
9. Implement knapsack problem using backtracking.
10. Find the solution of traveling salesperson problem using branch and bound technique.

1. Write a C program with Fundamental Graphics Function
2. Write a C program for Line drawing using Bresenham, DDA Line Drawing Algorithms.
3. Write a C program for Circle Drawing using Bresenham Circle Drawing Algorithms.
4. Write a C program for Clipping Algorithm using Line Clipping.
5. Write a C program for 2D Transformations like Translations and Scaling and Rotations.
6. Write a C program for 3D Transformations like Translations and Scaling and Rotations.
7. Create Frame by Frame Animations using multimedia authoring tools.
8. Develop a presentation for a product using techniques like Guide Layer, masking and onion Skin using authoring tools.
9. Create a Jpeg image which demonstrates the various features of an image editing tool.

Demonstrate Rasterization and filtering of layers and give blending effects for a logo.

1. Write an assembly language program to perform arithmetic operations on block of data using Hexadecimal numbers.
2. Write an assembly language program to perform arithmetic operations on block of data using BCD numbers.
3. Write an assembly language program to perform byte and string manipulation.
4. Write an assembly language program to interface Programmable Peripheral Interface.
5. Write an assembly language program to interface Programmable Timer.
6. Write an assembly language program to interface Programmable Communication Interface.
7. Write an assembly language program to interface Keyboard/Display Controller.
8. Write a program to Perform Power On Self Test.
9. Write a program for floppy disk trouble shooting.
10. Write a program for printer trouble shooting.

1. Program to illustrate the use of overloading and overriding.
2. Program to implement the concept of Interfaces and packages.
3. Generate the program using exceptions handling mechanism.
4. Program to achieve Inter thread communication and deadlock avoidance.
5. Implement the file operations.
6. Program using Applets.
7. Program using JDBC.
8. Program using JNI concepts.
9. Program to illustrate the use of Remote Method Invocation.
10. Program using Servlets.

1. Program using application wizard :
SDI, MDI, Drawing Inside the View Window, Device Context
2. Program to handle basic events:
The message map, saving the view's state, initializing a view class data member
3. Program using graphical device interface objects
4. Program to display modal and modeless dialogs.
5. Program using static and dynamic controls
6. Program using document – view architecture
7. Program with tool bars and status bars
8. Program using SDI and MDI serialization
9. Program to create dynamic link libraries using MFC
10. Program to interface with database

1. Program using basic network commands
2. Program using system calls : create, open, read, write, close, stat, fstat, lseek
3. Program to implement inter process communication using pipes
4. Program to perform inter process communication using message queues
5. Program to perform inter process communication using shared memory
6. Program to perform synchronization using semaphores
7. Program to capture packets : sniffer
8. Program using TCP sockets (Client and Server)
9. Program using UDP sockets (Client and Server)
10. Program using URL class to download webpages

1. Create a distributed application to download various files from various servers using RMI
2. Create a Java Bean to draw various graphical shapes and display it using or without using BDK
3. Develop an Enterprise Java Bean for Banking operations
4. Develop an Enterprise Java Bean for Library operations
5. Create an Active-X control for File operations
6. Develop a component for converting the currency values using COM / .NET
7. Develop a component for encryption and decryption using COM / .NET
8. Develop a component for retrieving information from message box using DCOM / .NET
9. Develop a middleware component for retrieving Stock Market Exchange information using CORBA
10. Develop a middleware component for retrieving Weather Forecast information using CORBA

1. Create an XML document to store an address book.
2. Create an XML document to store information about books and create the DTD files.
3. Create an XML schema for the book's XML document from exercise 2.
4. Create an XML document to store resumes for a job web site and create the DTD file
5. Present the book's XML document using cascading style sheets (CSS).
6. Write an XSLT program to extract book titles, authors, publications, book rating from the book's XML document and use formatting.
7. Use Microsoft DOM to navigate and extract information from the book's XML document.
8. Use Microsoft DSO to connect HTML form or VB form to the book's XML document and display the information.
9. Create a web service for temperature conversion with appropriate client program.
10. Create a web service for currency conversion (at five currencies) with appropriate client program.

Develop Software using CASE tools for the applications like :

1. Online railway reservation system
2. Payroll processing application
3. Inventory system
4. Automating the banking process
5. Software for game
6. Library management system
7. Create a dictionary
8. Text editor
9. Telephone directory
10. Create an E-Book of your choice

Software required:

- **Languages:** C/C++/Java/JSDK/Web browser.
- Any front end tool (like VB, VC++, Developer 2000) etc
- **Any backend tool** (Oracle, Ms-Access, SQL) etc.
- **Any CASE tool**