

Mangalam College of Engineering, Ettumanoor

DEPARTMENT OF COMPUTER APPLICATIONS

II Semester MCA

20MCA 132 Object Oriented Programming Lab

CYCLE -I

1. Define a class 'product' with data members pcode, pname and price. Create 3 objects of the class and find the product having the lowest price.
2. Read 2 matrices from the console and perform matrix addition.
3. Read a matrix from the console and check whether it is symmetric or not.
4. Create CPU with attribute price. Create inner class Processor (no. of cores, manufacturer) and static nested class RAM (memory, manufacturer). Create an object of CPU and print information of Processor and RAM.

CYCLE-II

5. Program to Sort strings.
6. Search an element in an array.
7. i. Given string is palindrome or not.
ii. Sorting a given list of names in ascending order
8. Program to create a class for Employee having attributes eNo, eName eSalary. Read n employ information and Search for an employee given eNo, using the concept of Array of Objects.
9. Perform the following operations on strings
 - i. Find the length of the string.
 - ii. Character at second and fourth position
 - iii. Find the sub string using start index only
 - iv. Find the sub string using start index and end index
 - v. . concatenate a given string to the end of another string.
 - vi. Replace a specified character with another character
 - vii. . check whether a given string starts with another string.
 - viii. convert all characters in a string to lowercase.

viii. convert all characters in a string to uppercase.

CYCLE-III

10. Area of different shapes using overloaded functions

11. Create a class 'Employee' with data members Empid, Name, Salary, Address and constructors to initialize the data members. Create another class 'Teacher' that inherit the properties of class employee and contain its own data members department, Subjects taught and constructors to initialize these data members and also include display function to display all the data members. Use array of objects to display details of N teachers.

12. Create classes Student and Sports. Create another class Result inherited from Student and Sports. Display the academic and sports score of a student.

13. Write a program has class Publisher, Book, Literature and Fiction. Read the information and print the details of books from either the category, using inheritance.

CYCLE-IV

14. Create a Graphics package that has classes and interfaces for figures Rectangle, Triangle, Square and Circle. Test the package by finding the area of these figures.

15. Create an Arithmetic package that has classes and interfaces for the 4 basic arithmetic operations. Test the package by implementing all operations on two given numbers.

16. Write a user defined exception class to authenticate the user name and password.

17. Program to find the sum of command line arguments and count the invalid integers entered through the command line.

18. Program to remove all the elements from a linked list.

CYCLE-V

19. Program to find maximum of three numbers using AWT.

20. Implement a simple calculator using AWT components.

CYCLE-VI

21. Write a program to copy one file to another.