Algorithm Development and Programming Fundamentals
MCA SEM-1

Pointers and User Defined Data Types

1. Write a C program to swap 2 numbers using pass by value and pass by reference to a function.
2. Write a C program to create a number variable. Create a pointer variable for this number variable. Create another pointer-to-pointer variable. Display the address and value of all the variables including pointer variables.
3. Write a C program to create an array of 15 elements. create a pointer which points to an array. Now print the base address of the array. Then display the array elements using pointer arithmetic.
4. Write a program to create a value array and another pointer array. Both array sizes should be 5. Now store some values in the value array. Then store the address of these five elements in the pointer array. Then print the address and value of each of the pointer arrays.
5. Write a structure to input the roll number, name, and marks of 5 subjects of a student. Print input data, total marks, and percentages in a proper format. (Use array within structures to store multiple students and create separate functions for printing, collecting, and computing student information)
6. Take the input for book category, book code, book title, author name, price, edition, and the number of copies available for 10 books using structure. Print the input data values along with the total amount for all books in a proper format. (make proper use of an array of structures and functions)
7. Write a simple program to give a demonstration of Union in C.
8. Define a structure which has members that include name, id-no and marks. Write a C program to read the information about N students and print the name and id-no of the students having marks less then M. Make use of pointer to structure
9. Write a C program that takes a Student structure. The program should store marks of 5 subjects and calculate total and percentage. Display each subject's marks, total and percentage for all students. Make use of pointer to structure