Programming Practice Lab

Assignment 1

CO1: Understand the usage of pointers in C and its applications

1. Write a program that will have an integer variable and a pointer (say, p) pointing to it. Also have a pointer to pointer pointing to p. Take the value for the integer variable and print it using p, and pp.

2. Implement a one dimensional array of integers where array size of the array will be provided during runtime. Accept the value for the elements and print those using pointers.

3. Implement a two dimensional array of integers using a) array of pointers b) pointer to pointer (with two malloc statements and again with one malloc statement, c) pointer to an array. Accept the value for the elements and print those.

4. Implement the programs in Q.2 and 3 breaking it into functions for i) getting the dimensions from user, ii) dynamic memory allocation, iii) accepting the values and iv) printing the values.

5. Store name and age of number of persons (number provided at run time). Collect the data and display data in the ascending order of age. Implement without using structure. Write functions for memory allocation of the list, sorting and display of data.

6. Implement Q.5 using structure.

7. Maintain a list to store roll, name and score of students. As and when required student record may be added or deleted. Also, the list has to be displayed. Design suitable functions for different operations.

8. Consider an array that stores roll, name, and score of number of students. Develop a function to sort the array. User of sort() will develop the comparison function for sorting on roll/score and ascending or descending order and reuse the same sort() function.