



Department of Computer Science & Engineering

Problem Solving with C Laboratory-UE19CS152

Week-12

Objective: Students will learn Dynamic Memory Allocation and also use of multiple files.

1)Write a C program to read an array of int as arguments, create a dynamic array to populate cyclically permute the element of an array(In right to left direction).

Client will read,display the array and then deallocate the array.

Server will have function for read,display and cyclic permutation for array elements.

Input1:

Enter n

10

Enter the elements of the array

4 5 6 7 16 34 67 46 9 50

Output1:

array before permutation

4

5

6

7

16

34

67

46

9

50

The cyclically permute the element of an array
array after permutation

5

6

7

16

34

67

46

9

50

4

2) Write a C program to allocate memory dynamically for the structure called employee. The members of the structure are Emp-id, Name, Department.

Client will read and display the structure and then deallocate the structure.

Server will have function for read and display employee details.

Input:

Enter no of employees

4

Enter Emp-id

11

Enter Name

abc

Enter department

cse

Enter Emp-id

12

Enter Name

def

Enter department

ise

Enter Emp-id

13

Enter Name

xyz

Enter department

ece

Enter Emp-id

14

Enter Name

ijk

Enter department

eee

Output:

The Employee details are

Emp-id is 11

Name is abc

Dept is cse

The Employee details are

Emp-id is 12

Name is def

Dept is ise

The Employee details are

Emp-id is 13

Name is xyz

Dept is ece

The Employee details are

Emp-id is 14

Name is ijk

Dept is eee

3) Write a C program to allocate memory dynamically for the structure called student. The members of the structure are rollno(integer), name(string) and marks(integer). Client will read, display and sort the records of the structure student on the basis of marks in descending order and then deallocate the structure. Use bubble sort for sorting the records.

Server will have function for read, display and sort the marks.

Input:

Enter Number of students records

3

Enter data for Record #1

Enter rollno : 11

Enter name : abc

Enter marks : 86

Enter data for Record #2

Enter rollno : 12

Enter name : def

Enter marks : 35

Enter data for Record #3

Enter rollno : 13

Enter name : xyz

Enter marks : 90

Output:

Before sorting

Rollno	Name	Marks
11	abc	86
12	def	35
13	xyz	90

After sorting

Rollno	Name	Marks
13	xyz	90
11	abc	86
12	def	35

Practice programs:

1) Write a C program to allocate memory dynamically for the structure called Course. The members of the structure are Coursecode and Coursename. At the beginning of the semester student registers for all the 6 courses, later he drops few courses then, reallocate memory for the given number of courses and register once again from the student. Client will display the courses for the semester after dropping the courses.

2) Write a C program to read an array of int as arguments, create a dynamic array populate with squares of elements in the array, client will read and display the array and then deallocate the array.