CS8261 C PROGRAMMING LABORATORY

DETAILED SYLLABUS

OBJECTIVES:

- To develop programs in C using basic constructs.
- To develop applications in C using strings, pointers, functions, structures.
- To develop applications in C using file processing.

LIST OF EXPERIMENTS:

1. Programs using I/O statements and expressions.

2. Programs using decision-making constructs.

3. Write a program to find whether the given year is leap year or Not? (Hint: not every centurion year is a leap. For example, 1700, 1800 and 1900 is not a leap year)

4. Design a calculator to perform the operations, namely, addition, subtraction, multiplication, division and square of a number.

5. Check whether a given number is Armstrong number or not?

6. Given a set of numbers like <10, 36, 54, 89, 12, 27>, find sum of weights based on the following conditions.

- 5 if it is a perfect cube.
- 4 if it is a multiple of 4 and divisible by 6.
- 3 if it is a prime number.

Sort the numbers based on the weight in the increasing order as shown below

<10, its weight>, <36, its weight><89, its weight>

7. Populate an array with height of persons and find how many persons are above the average height.

8. Populate a two-dimensional array with height and weight of persons and compute the Body Mass Index of the individuals.

9. Given a string "a$bcd/fg" find its reverse without changing the position of special characters.

(Example input: a@gh%; j and output: j@hg%; a)

10. Convert the given decimal number into binary, octal and hexadecimal numbers using user defined functions.

11. From a given paragraph perform the following using built-in functions:

    a. Find the total number of words.

    b. Capitalize the first word of each sentence.

    c. Replace a given word with another word.

12. Solve towers of Hanoi using recursion.

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13. Sort the list of numbers using pass by reference.

14. Generate salary slip of employees using structures and pointers.

15. Compute internal marks of students for five different subjects using structures and functions.

16. Insert, update, delete and append telephone details of an individual or a company into a telephone directory using random access file.

17. Count the number of account holders whose balance is less than the minimum balance using sequential access file.

Mini project

18. Create a "Railway reservation system" with the following modules

- Booking
- Availability checking
- Cancellation
- Prepare chart