CSE 2001: Data Structure & Algorithms

Programming Assignment-V

(Recursion)

1. Write a recursive function in C that computes the factorial of a given integer.

2. Write a recursive function in C which, given real value x and a positive integer n, returns the value of x^n.

3. Write a recursive function in C which, given an integer n, print it with its digits reversed. For example , given 4735, it prints 5374.

4. Write a recursive function in C which given an integer n, prints it with one blank after each digit.

5. The sequence of numbers 1, 1, 2, 3, 5, 8, 13 etc are called Fibonacci numbers, each is the sum of the preceding two. Write a recursive function in C which, given n, returns the n^{th} Fibonacci number.

6. Write a recursive function in C to return the greatest common divisor(gcd) of two integers m an n, given that in general,

$$gcd(m,n)=gcd(n, m \bmod n)$$

7. Write a recursive function in C which reads a line of data and prints it with the character reversed.

8. Write a recursive function in C to search an element of an array using binary search.

9. Write a recursive function in C to find the binary equivalent of a positive decimal integer.

10. Write a recursive function in C to find the product of 2 numbers.

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