SOOP Lab-4

Topic 4.1: Multiple Function Programs

Demonstration and Explanation:

/*A program to demonstrate simple use of 'global' & 'local' variable and function */

/* A program to demonstrate simple use of static variables and function. */

EXERCISES 4.1:

1. Write a multifunction program to print the following patterns where number of rows is user input and must be read in main function. There should be separate function for each of the following patterns and note that, you cannot pass any data through parameters to those functions.

(a)	(c)	(d)
4444444	7654321	* * * * *
33333	54321	* * *
222	321	*
1	1	* * *
		* * * * *

2. Write a function to calculate the factorial value of any integer entered through the keyboard.

3. An integer is entered through the keyboard. Write a function to obtain the prime factors of this number. For example, prime factors of 24 are 2, 2, 2 and 3 whereas prime factor of 35 are 5 and 7.

Topic 4.2: Recursion and Recursive Function

Demonstration and Explanation:

/* A program to demonstrate simple use recursive functions. */

EXERCISES 4.2:

1. The series 0, 1, 1, 2, 3, 5, 8, 13, … is called the Fibonacci series. Here, $term_n = term_{n-1} + term_{n-2}$, for $n>1$, $term_0 = 0$, $term_1 = 1$. Write a program that finds the sum of first n terms of the series using recursion.

2. Convert a decimal number into correspondent binary number using recursion where decimal number is input from user.