Day 18
Recursion

Lab Assignments-18

Q#	Experiment Details	Input	Output
1.	WAP to find the factorial of a number n by writing a recursive function for it.	**Set 1:** Enter a number: 4 **Set 2:** Enter a number: 1	**Set 1:** Factorial of 4 = 24 **Set 2:** Factorial of 1 = 1
2.	WAP to calculate GCD/HCF of two numbers by using a recursive function.	**Set 1:** Enter two numbers: 105 60 **Set 2:** Enter two numbers: 5 70	**Set 1:** GCD of 105 and 60 = 15 **Set 2:** GCD of 5 and 70 = 5
3.	WAP by designing a recursive function to calculate the sum of the digits of any given integer until it becomes a single digit number.	**Set 1:** Enter a number: 589 **Set 2:** Enter a number: 25	**Set 1:** Sum of the digits (up to single digit) of 589 = 4 **Set 2:** Sum of the digits (up to single digit) of 25 = 7
4	Write a recursive function to count the digits of a positive integer (do also for sum of digits)	**Set 1:** Input: 13478635 **Set 2:** Input: 5875014	**Set 1:** Sum of digits: 37 **Set 2:** Sum of digits: 30
5	WAP to find out the maximum element of an integer array by using recursion.	**Set 1:** Enter the size of the array: 5 Enter the elements of the array: 3 5 7 2 6 **Set 2:** Enter the size of the array: 3 Enter the elements of the array: 5 0 -2	**Set 1:** Entered Array: 3 5 7 2 6 Maximum elements of the given array: 7 **Set 2:** Entered Array: 5 0 -2 Maximum elements of the given array: 5

Home Assignments (Practice Problems)

Q#	Experiment Details	Input	Output
1.	WAP to count number of digits of a positive integer n by using a recursive function.	**Set 1:** Enter a number: 10 **Set 2:** Enter a number:	**Set 1:** Number of digits of 10 = 2 **Set 2:** Number of digits of 2105 = 4

		2105	
2.	WAP to find the n^{th} Fibonacci number using recursion.	**Set 1:** Enter the value of n: 10 **Set 2:** Enter the value of n: 4	**Set 1:** n = 10 nth Fibonacci number = 34 **Set 2:** n = 4 nth Fibonacci number = 2
3	Write a recursive function to reverse a null terminated string	**Set 1:** Input: Hello **Set 2:** Input: I am going to school.	**Set 1:** Output: olleH **Set 2:** Output: .loohcs ot gniog ma I
4.	Write a recursive function to copy one array to another	**Input:** Please Enter the Array Size : 5 Please Enter the Array Elements : 3 5 7 8 9	**Output:** Elements of Second Array are: Value Inside Array b[0] = 3 Value Inside Array b[1] = 5 Value Inside Array b[2] = 7 Value Inside Array b[3] = 8 Value Inside Array b[4] = 9
5.	Write a recursive function to convert a decimal number to binary	**Set 1:** Input: 765	**Set 1:** Output: 1011111101