Lab Assignment

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PART 2

Ass. No.	Assignment
25.	Write recursive functions for each of the following programs: i) Calculate the sum of the digits of a number. ii) Determine the number of digits of a number. iii) Calculate the **gcd** of 2 numbers. iv) Determine the value of a^b. [a and b will be input by user] v) Find the sum of the series: 1+2+3+4+5+…….. n terms.[n will be given by user] vi) Calculate the **factorial** of a number using **tail-recursion**. vii) Print the **Fibonacci series** upto n terms. [n will be given by user]
26.	Take an array of 10 integers and find the **second smallest element**. Example: 10,5,4,2,7,9,3,8,1,6. Output: 2
27.	Take an array of 20 integers. Pass the array to a function swap (). It will swap the lowest and highest element in the array and return it to the main() method.
28.	Take an array of n integers. Sort it into ascending order using **bubble sort**. Now take another integer element m and search whether it is present in the array or not (Using **binary search** method). n and m will be given as input from user.
29.	Take an array of 20 numbers. Now count the **frequency** of each number occurring in the array.
30.	Take a decimal number as input from user and convert it to **hexadecimal**.
31.	Take a decimal number as input from user and convert it to **binary**. Example: 14 Output: 1110
32.	Take a number as input from user. Now check whether all the digits of the number are **unique** or not (i.e each digit occurring only once). Example: 1256 Output: Unique 1215 Output: Not unique.
33.	Take a mXn matrix as input from user. Then print the transpose of the matrix. 1 2 Output: 1 4 7 4 5 2 5 8 7 8

34.	Take a 3X3 matrix as input from user. Then check whether it is a **diagonal** matrix or not.
	Example: 2 0 0
	        0 3 0
	        0 0 5

35.	Take 2 matrices as input from user. Then multiply these 2 matrices and print the result.
36.	Take a hexadecimal number string as input from the user and convert it to decimal. Example: (A12) =2578
37.	Take a sentence as input. Now remove all multiple spaces from the sentence. Example: We are the students of JADAVPUR UNIVERSITY. Output: We are the students of JADAVPUR UNIVERSITY.
38.	Take a word and check whether it is **palindrome** or not. Example: MALAYALAM
39.	Take 10 names and **sort** them into ascending order.
40.	Take a sentence from user as input. Then count the number of vowels, digits, and words present in it.

	Example: We are the students of 1st year 2nd semester.
41.	Take a number n as input in the main() method. Now call another method prime(n). It will check whether it is prime or not. Now reverse the number in the main() method and call the prime(n) method again. If the reversed number is also prime, then print "**Twisted Prime**". Otherwise "**Not Twisted Prime**".
42.	Take 2 strings from user and implement the functionality of strcmp() function on them by your own logic.
43.	Take the name of a person as input from user. Then print it in abbreviated form. Example: Amal Kumar Bhowmick. Output: A.K.Bhowmick
44.	Take a sentence and a word as input from user. Then count the number of occurrences of the word in the sentence.
45.	Take 2 strings as input from the user. Now **concatenate** them into a third string and then **print it in reversed way.** Example: String 1:-GOOD String 2:-MORNING Output:- GNINROM DOOG
46.	Print the following patterns: COMPUTER COMPUTE COMPUT COMPU COMP COM CO C COMPUTER OMPUTER MPUTER PUTER UTER TER ER R H HE HEL HELL HELLO HELL HEL HE H COMPUTER COMPUTE COMPUT COMPU COMP COM CO C
47.	Create a structure containing studentname, rollno, marks. Now create an array of structure of 10 students. Now find the highest marks and the name of the student who got it.
48.	Take a string from user and print each word in reversed way. The entire string will not be reversed in this process. Only each individual word will be printed in reversed way. Example: WISH YOU A VERY HAPPY BIRTHDAY Output: HSIW UOY A YREV YPPAH YADHTRIB
49.	Write a C program to open a file in "r" mode. Then print all the even numbers from the file.
50.	Open a file in "r" mode. Then copy the contents of this file into another file.