C Programming

Lab Assignment 2

Q1. ‘n’ numbers are entered from the keyboard into an array. Write a program to find out how many of them are positive, how many are negative, how many are even and how many odd.

Q2. WAP in C to perform addition of all elements input in an integer array.

Q3. WAP in C to find the largest and smallest element in an integer array.

Q4. WAP in C to reverse the content of a character array.

Q5. ‘n’ numbers are entered from the keyboard into an array. The number to be searched is entered through the keyboard by the user. Write a program to find if the number to be searched is present in the array and if it is present, display the number of times it appears in the array.

Q6. Write a Program to delete a particular element from the specified location from an array. The elements of the array and the position which needs to be deleted will be user input.

Q7. Write a Program to insert an element in the specified location of an array. The elements of the array and the position along with the element which needs to be inserted will be user input.

Q8. Write a program to add two integers matrices input by the user.

Q9. Write a program to multiply two integer matrices.

Q10. Write a program in C to find the transpose of an integer array input by the user.

Q11. Write a program to obtain the determinant value of a n x n matrix, where ‘n’ is the user input.

Q12.Write a function myP**ower(a, b)**, to calculate the value of **a** raised to **b**. Test your function from main.

Q13. Write functions for finding LCM and HCF of two integers. Each function has two numbers as parameters and returns the result. Write a main program that asks the user for numbers ‘a’ and ‘b’, and then use these numbers as arguments for your functions and print the result on the screen.

Q14. Write a function in C to take two integers as argument and returns the minimum of those. Write a main function that asks the user for four integers and then outputs the minimum by using the above function.

Q15. A positive 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 factors of 35 are 5 and 7.

Q16 Write a recursive function to calculate sum of first 'n' natural numbers where 'n' is passed to the function as an argument. Test your function by writing a main program.

Q17. Write a recursive function to return the factorial value of 'n', where 'n' is passed as argument. Write a main program to check your function.

Q18. The Fibonacci sequence is a sequence of numbers where the first two numbers are 0 and 1 and the next number in the sequence is the sum of the previous two numbers. The n'th number in the sequence can be calculated as:

$f(1) = 0$

$f(2) = 1$

$f(n) = f(n - 1) + f(n - 2)$

Write a C function with a parameter n that returns the n'th Fibonacci number. The function must be recursive, i.e., it should call itself. Write a program that asks the user for a number n and then prints the n first numbers in the Fibonacci sequence.

N.B: –

i. Only handwritten assignment will be accepted**. Printouts are NOT allowed**.

ii. Use A4 papers and the same channel file used for Assignment 1 to submit this and remaining assignments. Use only one side of each page

iii. Write the C codes and the output of a typical run of the code.

iv. **Deadline for submission of Assignment 1 is 12/04/2019.**

vii. **Submit assignments during lab periods**.