

ARRAYS

Write a C program to find the sum of odd and even numbers in a given list of values.

Write a C program to print the smallest value and the greatest value in a given array along with its positions.

Write a C program to read a list of n integers and count the number of positives, negatives and zeroes in it.

Write a menu-driven C program to perform the following:

- (a) Addition of two matrices
- (b) Subtraction of two matrices
- (c) Multiplication of two matrices.

Write a C program to read a matrix and print its transpose. Also check whether it is symmetric or not.

- 17 Write a C program to read a string from a user and perform the following:
- (i) Count the no. of vowels
 - (ii) Count the no. of consonants
 - (iii) count the no. of special characters
 - (iv) Count the no. of words.
 - (v) Count the no. of occurrences of a particular character in the string

Write a menu-driven C program to read a line of text and perform the following:

- (i) Extract a portion of string from the text
- (ii) Count the occurrence of a particular word.
- (iii) Reverse the string (except the punctuation marks)
- (iv) Delete all vowels from it.
- (v) Search for the presence of any numeric digit in it and its positions.

Write a C program to input two strings and use in-built functions to do the following:

- (i) Concatenate two strings
- (ii) Compare two strings
- (iii) Copy one string onto another
- (iv) Calculate length of strings
- (v) Concatenate n characters of one string with another
- (vi) Copy n characters of one string onto another
- (vii) Check whether one string is a portion of another string or not.

7 Write a C program to define a function `gcd()` to calculate the greatest common divisor of two integers m and n and use it to find the LCM (Lowest common multiple) using the formula: $LCM = m * n / GCD$.

Write a C program to define a function `Fibonacci()` to generate the first n fibonacci numbers.

7 Write a C program to define a function `cosine()` and `sine()` to compute the respective cosine and sine values for an input integer x .

Formula:

$$\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots$$
$$\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

(Note: The original image includes handwritten notes "upto 5 terms" and "upto 15 terms" for the cosine and sine series respectively.)

7 Write a C program to define a function `round()` that takes in a floating-point number as input and returns the number rounded off to two decimal places. Also print the number returned in words.

7 Write a C program to define a recursive function that displays the first 'n' palindrome prime numbers. Display 5 numbers per line and align properly as follows:

	2	3	5	7	11
101	131	151	313	363	
		:			

7 Write a C program to define a function to find the biggest, smallest and average value from a given list of n values. Stored in a two-dimensional array.

7 Write a C program to define a function `poly()` that recursively evaluates the value of a polynomial of order n.

[Note: $P = ((a_0x + a_1)x + a_2)x + a_3)x + \dots + a_n$]

7 Write a menu-driven C program and define separate ^{user-defined} functions to perform the following:

(a) Compute Factorial of a number recursively.

(b) Compute nCr using the recursive definition of factorial

$$nCr = \frac{n!}{r!(n-r)!}$$

(c) Compute x^n (x to the power n) recursively.

7 Write a C program to define a function `encrypt()` that accepts two strings as input arguments and interchanges the vowels between them. In case of less number of matching number of vowels, use "*" as encryption character.