

TECHWEEKEND V 13.02

COMPUTEX

Everything or Nothing

Instructions:

- 1) Time Limit: Specified
- 2) Usage of Internet/mobiles/books/e-books/pre-framed materials etc. of any kind is strictly prohibited.
- 3) For all the questions involving codes and algorithms, please make a note that we are looking for optimized implementations and not the worst case implementations.
- 4) Please write comments wherever necessary to facilitate better understanding of your code.
- 5) Please fill in the details below carefully.**

Member 1:

Name:

Registration No:

Contact No:

Delegate card Number:

Member 2:

Name:

Registration No:

Contact No:

Delegate card Number:

1. Design an algorithm to find the frequency of occurrence of a word in an article?

2. Generate Sequence:

1

2 3

4 5 6

input = no. of rows

3. Check whether the given matrix is a magic square or not.

4. How do you reverse the order of the words (not the characters) in a string of length n in with constant extra space in linear time

5. Swap two numbers without using arithmetic and third variable

6. Given a number, convert it into a boolean form and count the number of ones and zeroes

7. Print “Even” or “Odd” without using conditional statement

8. Given that a has weightage 1, b has 2, c has 3 and so on....find the value of the given expression:

$$ABC + DEF = 1 * 2 * 3 + 4 * 5 * 6 = 6 + 26 = 32$$

9. Implement a program to determine if a string has all unique characters.

10. Implement a method to perform basic string compression using the counts of repeated characters. for example, the string 'aabcccccaaa' would become a2b1c5a3.

If the "compressed" string would not become smaller than the original string, your method should return the original string.

11. Given a int N, write a function to return the closest Fibonacci Number