

**Question 1:**

Write a C program that:

- Declares and fills the elements of an array of integers T[10].
- Sets to 0 each element of the array T having value equals to its index (its position in the array).

Ex : if  $T[2] = 2$ , the program sets  $T[2] = 0$ .

**Question 2:**

Write a C program that:

- Declares a matrix of integers M[5][5] and fills the elements of M.
- Reads an integer k ( $0 \leq k \leq 4$ ) and then finds the maximum number in the line (row) k.
- Displays all the elements of the matrix M that are divisible by 5.
- Displays the sum of the even numbers of M.

**Question 3:**

Write a C program that reads a positive integer  $n$  and then displays the value of the term  $U_n$  of the sequence  $(U_n)$  given by:

$$U_n = U_{n-1} + 2 * U_{n-2} + 1$$

with  $U_0 = 2, U_1 = 1$

**Question 4:**

- Write a function (**void displayDivisors(int n)**) that takes as parameter an integer  $n$  and displays all the divisors of  $n$ .  
**ex:**  $n=12$ , the function displays 1, 2, 3, 4, 6, 12.
- Write a function (**int sumPower(int n)**) that takes as parameter an integer  $n$  and returns as result the sum:  $1^1 + 2^2 + 3^3 + \dots + n^n$

Good Luck