CENG 222 LabWork

1. Write an assembly program that decides a number is perfect or not.

The four perfect numbers:

6 = 1 + 2 + 3,   
28 = 1 + 2 + 4 + 7 + 14,   
496 = 1 + 2 + 4 + 8 + 16 + 31 + 62 + 124 + 248 

1. Write an assembly program that decides two number are amicable or not.

The numbers 220 and 284 are called amicable. In general, we say that two positive integers are amicable or friendly if each of them is equal to the sum of all the natural proper divisors of the other, including 1.

1 + 2 + 4 + 5 + 10 + 11 + 20 + 22 + 44 + 55 + 110 = 284

and the sum of all the natural divisors of 284, except for the number itself is equal to

1 + 2 + 4 +71 + 142 = 220.

1. Largest sum contiguous increasing subarray. Given an array of n positive distinct integers. The problem is to find the largest sum of contiguous increasing subarray in O(n) time complexity.

Examples:

Input : arr[] = {2, 1, 4, 7, 3, 6}

Output : 12

Contiguous Increasing subarray {1, 4, 7} = 12

Input : arr[] = {38, 7, 8, 10, 12}

Output : 38