CENG241 Object Oriented Programming
Labwork 1

1. Write a function **findMultiples** which takes at least the following parameters:

   - An integer X,

   - An MxN integer matrix Y

   This function should search for multiples of number X in the Y matrix. If found, it must display the coordinates and the found number. When the whole matrix has been searched, the total number of occurences must be returned. Write a program which tests this function with a user inputted number and a randomly generated matrix.

   Sample Run

   ```
   Enter an integer: 6
   Found 486 in (1,1)
   Found 384 in (2,0)
   Found 474 in (2,3)
   Found 186 in (3,2)
   Found 48 in (4,4)
   Total occurences: 5
   ```

2. Write a program which creates two random integers X and Y between 10 and 70 first, and then creates a dynamic array which can hold as many numbers as there are between those two random numbers. Fill the array with numbers between X and Y and print it on screen. Repeat this procedure two times. Don't forget to free the allocated memory locations whenever they are no longer needed.

   Sample Run

   ```
   Randomly generated numbers are: 43 23
   23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

   Randomly generated numbers are: 12 35
   12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35
   ```

3. Modify your program in the previous question such that if any multiples of the first number in the array occurs somewhere else in the array again, store them in a file "first-multiples.txt". If any divisors of the last number occurs in the array, store them in a file "last-divisors.txt".

   Sample Run

   ```
   [On screen]
   Randomly generated numbers are: 12 68
   12 13 14 ... 66 67 68

   [In first-multiples.txt]
   24 36 48 60

   [In last-divisors.txt]
   17 34
   ```