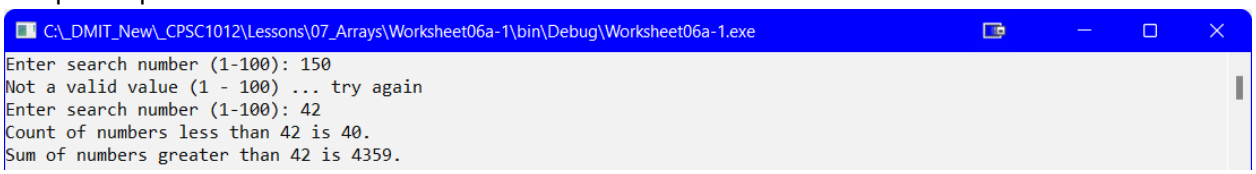
CPSC1012 Worksheet 06a

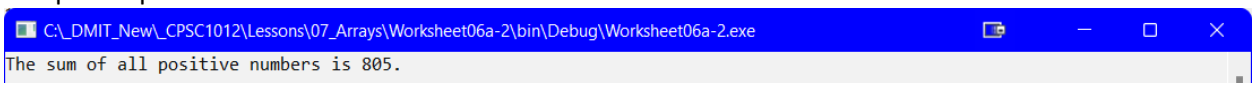
Test your understanding of this material by answering the following questions by coding each of the questions:

*Note: You may **NOT** assume valid input for all questions below.*

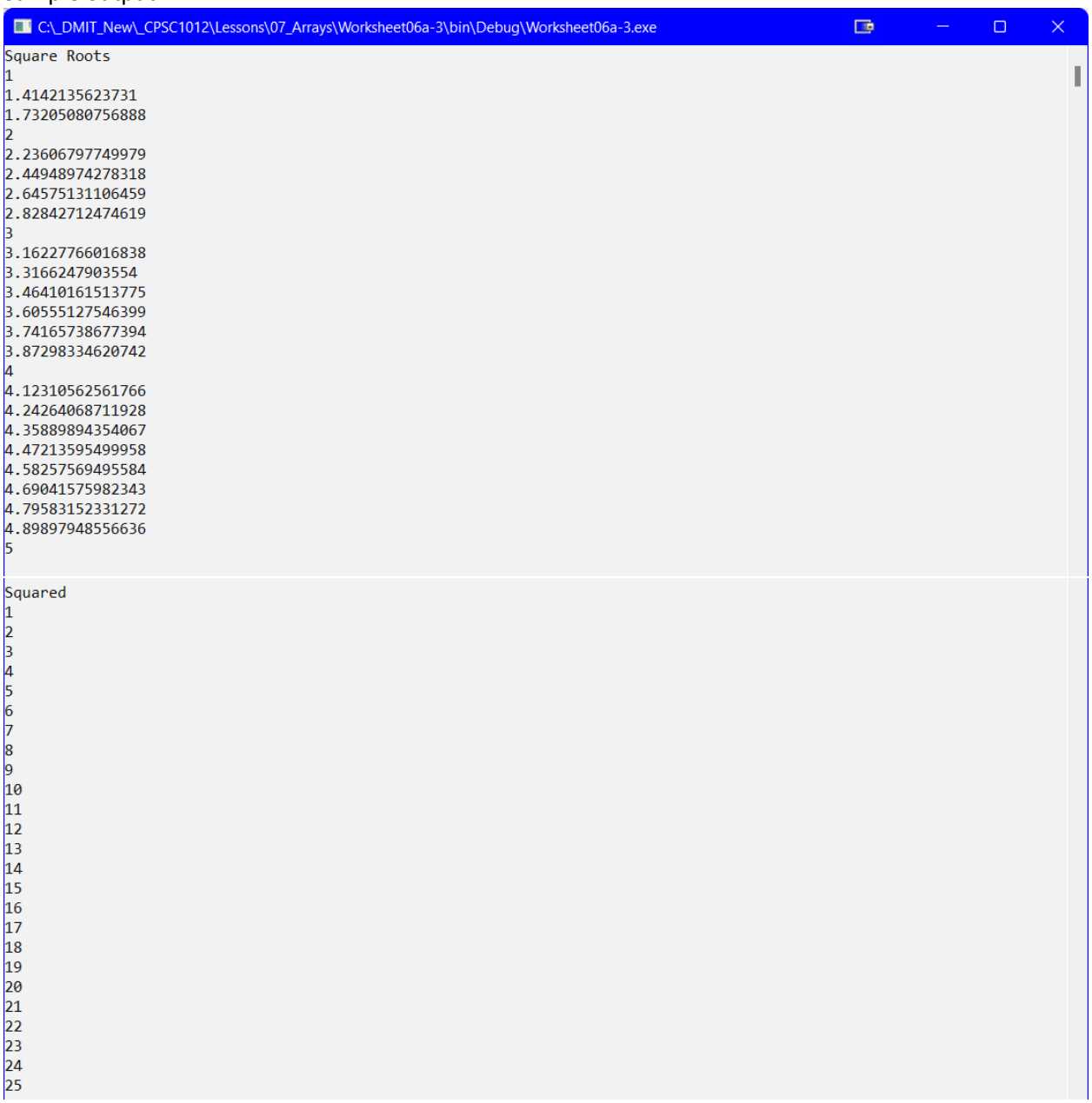
1. Create an array of integers of size 100 that holds random numbers between 1 and 100 inclusive (in a method). The user will input a number to search for in the array. Create a method that, when passed in the array, will return the count of all numbers less than the search number. If there are no numbers less than the search number, return 0. Display the results in a method. Create a second method that, when passed in the array, will return the sum of all numbers greater than the search number. If there are no numbers greater than the search number, return 0. Display the results in a method.
   Sample output:

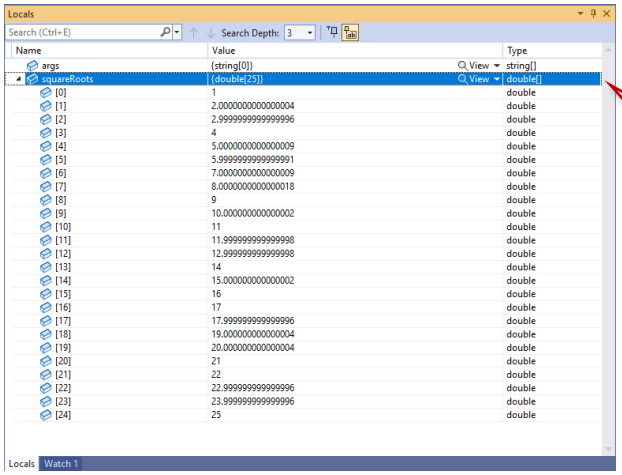


2. Create an array of integers of size 100 that holds random numbers between -50 and 50 inclusive (in a method). Create a method that, when passed in the array, will return the sum of all positive numbers. If there are no positive numbers in the array return 0. Display the results in a method.
   Sample output:



3. Create an array of doubles of size 25 that will hold calculated values; each value will be the square root of the element number (this will be `index + 1` – for example the array[0] will hold the square root of 1). Create another method that will read each value in the array, square this value, and place the squared value back into the same element. Display the results in a method. [*What is noticeable about the final values in the array?*]
   Sample output:





Actual data in the array after squaring all the elements

4. Create an array of names of size 10 with each name being entered by the user (in a method). Sort the array and display it. Create a method to scramble the names in the array. Redisplay the values in the array to show that the names are scrambled.

   HINT:

```
While (.. decide how many times to loop ..)
    Create 2 random numbers
    TempVariable = Array[Random1]
    Array[Random1] = Array[Random2]
    Array[Random2] = TempVariable
Loop
```

Sample output:

```
Sorted Array
Allan
Betty
Bob
Frank
George
John
Patty
Sally
Timothy
Zack

Scrambled Array
George
Allan
Zack
Betty
Sally
Timothy
Patty
Bob
John
Frank
```