Computer programming

Lab 4

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Q3.

Given the following numbers, write a program that finds the maximum, the minimum, the mean ( ), the variance (V), and the standard deviation (σ) values.

The numbers are: {84, 63, 21, 78, 82, 19, 83, 47, 23, 78, 54, 60, 91, 23, 29, 48, 37, 26}

Know that:

$$\mu = \frac{\sum_{i=1}^{n} \mathrm{a_i}}{\mathrm{n}}$$

$$\mathrm{v} = \frac{\sum_{i=1}^{n} (\mathrm{a_i} - \mu)^2}{\mathrm{n}}$$

$$\sigma = \sqrt{\mathrm{v}}$$

Q7.

Define a 100x100 2D array and fill it with random values between 1 and 1000, then search and count the number of values that satisfy following condition:
All 8 neighbors' values are less than the center value

..	..	..	..	..
..	1	3	6	..
..	3	7	5	..
..	3	3	4	..
..	..	..	..	..

Accepted

..	..	..	..	..
..	2	9	9	..
..	5	3	8	..
..	6	4	7	..
..	..	..	..	..

Rejected

Q13.

Write a program that computes the summation of the following numeric values. Consider that they are provided in a string format.

```
char values[10][3] = {"93", "28", "80", "93", "28", "40", "98", "32",
"45", "25"};
```

Q11.

Write a program that replaces the word “computer” with the word “programming” in the following paragraph. (Hint: Use another bigger array to produce the new string.)
Welcome to computer world. Welcome to computer world.

- String problems on codeforces: https://codeforces.com/problemset?order=BY_SOLVED_DESC&tags=strings
- Our competitive programming community: https://www.facebook.com/ASUFECPC
- Current training: https://www.youtube.com/watch?v=Su-3rWsX5I8&list=PLsaB7QVPsxhdbUCmUVhKGCaVxHfjDwLhY&ab_channel=ASUFE-CPC