Lab 12 (Optional Questions)

Pointer (2)

Question-1.

We have mentioned the concept of median of 4 numbers in lab04. Now we consider another important statistic component mode. The mode of an integer array is the number with most times of appearance in the array.

Design a program to calculate the mode of the input integer arrays. The input will first include the size of the array. Use dynamical allocation to arrange space for the input array.

Note:

1. The number of the mode of an array can be more than one. If there are multiply numbers with the same largest appearances, they are all mode;
2. If all the elements have the same appearances, then the array has no modes;
3. By definition, the number of the modes cannot be larger than half of the size of the array.

Expected Output

Example 1:
Enter the size of the array: 7 Enter the content of the array: 4 10 3 2 5 7 12 The array does not have a mode.
Example 2:
Enter the size of the array: 4 Enter the content of the array: 1 9 3 3 The mode of the array is 3
Example 3:

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Enter the size of the array:
15
Enter the content of the array:
1 9 2 3 5 2 5 5 2 3 1 9 1 10 4
The modes of the array are:
1
2
5
```

Question-2.

*Write a program which has several string inputs. Use char** pointer to store the string inputs, and put this pointer and the input number as the input of the function void sortStr(char** a, num). In the function, you need to sort the strings from smallest to largest. The way to compare two strings is same as the way in lab10. You may consider how to initialize the char** pointer and how to display the sorted result.*

Expected Outcomes:

Example 1
Enter the number of strings: 4 Enter the input strings: abc bab daar daa Sorted result: abc bab daa daar
Example 2
Enter the number of strings: 4 Enter the input strings: bc hello welcome hollo Sorted result: bc hello hollo welcome
Example 3
Enter the number of strings: 5 Enter the input strings: when what where who whom Sorted result: what when where who whom