In each exercise make your source code and output readable.

Exercise 1. Create an array of 5 integers, read from input elements of array and store them in the array. Then calculate a sum and an arithmetic average of all elements from the array and how many elements have value greater than average. Display all results on the screen. Some sample interaction with the program might look like this:

```
Please enter 5 integers:
[1] 1
[2] 2
[3] -6
[4] 2
[5] 5
SUM = 4
AVERAGE = 0.8
NUMBER OF INTEGERS GREATER THAN 0.8 = 4
```

Exercise 2. Create an array of 5 integers, read from input elements of array and store them the an array. Then calculate the sum and the arithmetic average of all elements with even values from the array. Display all results on the screen. Some sample interaction with the program might look like this:

```
Please enter 5 integers:
[1] 1
[2] 2
[3] -6
[4] 2
[5] 5
SUM OF EVEN INTEGERS = -2
NUMBER OF EVEN INTEGERS = 3
AVERAGE OF EVEN INTEGERS = -0.666667
```

Exercise 3. Create an array of 5 integers, read from input elements of array and store them the an array. Then calculate the largest value in the array. Display results on the screen. Some sample interaction with the program might look like this:

```
Please enter 5 integers:
[1] 1
[2] 2
[3] -6
[4] 2
[5] 5
LARGEST INTEGER = 5
```

Exercise 4. In a program create an array of 10 real values to store persons' salaries, read from input elements of the array and store them in the array. First, output lowest salary, highest salary and arithmetic average of salaries. Some sample interaction with the program might look like this:

```
Please enter 10 persons' salaries:
Person  1: 4500
Person  2: 5750
Person  3: 7000
Person  4: 2500.50
Person  5: 3500
Person  6: 1500
Person  7: 4400
Person  8: 7010.50
Person  9: 1500
Person 10: 2600

      LOWEST SALARY: 1500.00
     HIGHEST SALARY: 7010.50
AVERAGE OF SALARIES: 4026.10
```

MODIFICATION 1. Display the list of persons' number and persons' salary that are greater than the average salary. Some sample interaction with the program might look like this:

```
LIST OF PERSONS WITH SALARIES GREATER THAN 4026.10:
Person  1: 4500.00
Person  2: 5750.00
Person  3: 7000.00
Person  7: 4400.00
Person  8: 7010.50
```

MODIFICATION 2. Count and display how many persons have the lowest salary and how many person have the highest salary. Some sample interaction with the program might look like this:

```
 LOWEST SALARY: 1500.00 – Person 6; Person 9; (2 persons)
HIGHEST SALARY: 7010.50 – Person 8; (1 person)
```

MODIFICATION 3. In a program create an array of 100 real values. Generate by the pseudorandom number generator N real values representing persons' salaries and store them in the array of 100 real values. The value of N is given by the user, accept N greater than 0 and less than or equal to 100.

Exercise 5. Gymnastics judging. A gymnast's score is determined by a panel of 6 judges who each decide a score between 0.0 and 10.0. The final score is determined by discarding the highest and lowest scores, and averaging the remaining 4. Write a program that takes 6 real inputs representing the 6 scores and prints their average, after throwing out the highest and lowest scores.

Exercise 6. (A bit Complex) Suppose that `b[]` is an array of 100 elements, with all entries initialized to 0, and that `a[]` is an array of N elements, each of which is an integer between 0 and 99. What is the effect of the following loop?

```
for (int j = 0; j < N; j++)
b[a[j]]++;
```

Write an appropriate program to output the results.

Exercise 7. (A bit Complex) In a program generate 20 integers and store them in the array. Display the array. Let generated number be from interval [a,b], where a and b are given by the user. Find and display three largest numbers of the given array. Do not change the order of elements in the given array.
MODIFICATION. **(Complex)** Find and display M largest numbers of the given array. The value of M is given by the user. Do not change the order of elements in the given array.