Far from average X38406_en

Write a program which takes a list of n reals and prints the last real in the sequence that is either:

- Less than or equal to half the average of the whole sequence, or
- Greater than or equal to twice the average of the whole sequence.

Your program MUST define and use the following subprogram, that returns a boolean indicating whether the vector v contains an element larger than $2 * x$ or smaller than $x/2$. If that is the case, the value of the last element with that property is stored in parameter e:

```
bool find_element(const vector<double>& v, double x, double &e) ;
```

Use the following code as a basis to write your `main()` program:

```
int main() {
   cout.setf(ios::fixed);
   cout.precision(2);
   int n;
   cin >> n;
   vector<double> v(n);

   double mean;
   // ADD YOUR CODE HERE

   double elem;
   bool found = find_element(v,mean,elem);
   if (found) cout << elem << endl;
   else cout << "not found" << endl;
}
```

Exam score: 3.500000 **Automatic part:** 30.000000%

Input

An integer $n > 0$ followed by a sequence of n reals.

Output

The last real in the input sequence which is either less than or equal to half the average of the whole sequence or greater than or equal to twice the average of the whole sequence, or else message ”not found” if the sequence does not contain any element with these properties.

Sample input 1

```
8
0.0 1.0 2.0 3.0 5.0 4.0 0.0 1.0
```

Sample output 1

```
1.00
```

Sample input 2

```
5
1.0 2.0 3.0 4.0 5.0
```

Sample output 2

```
1.00
```

Sample input 3

```
8
0.0 1.0 2.0 3.0 5.0 4.0 2.0 2.0
```

Sample output 3

```
5.00
```

Sample input 4

```
4
2.0 2.0 2.0 2.0
```

Sample output 4

```
not found
```

Observation

Inefficient solutions will be penalized.
WARNING: Altering the parameters, name, or specified behavior of the required subprograms will render the solution INVALID.

Problem information

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