

```
1  #pragma once
2  #include <limits.h>
3  #include <vector>
4  using namespace std;
5
6  class SampleStatistics {
7  public:
8      inline static double Mean(vector<double> x) {
9          double sum = 0;
10
11          for (int i = 0; i < (int)x.size(); i++)
12              sum += (double)x[i];
13
14          return sum / (int)x.size();
15      };
16      inline static double Max(vector<double> x)
17      {
18          double max = DBL_MIN;
19
20          for (int i = 0; i < (int)x.size(); i++)
21              if (x[i] > max)
22                  max = x[i];
23
24          return max;
25      };
26      inline static double Min(vector<double> x)
27      {
28          double min = DBL_MAX;
29
30          for (int i = 0; i < (int)x.size(); i++)
31              if (x[i] < min)
32                  min = x[i];
33
34          return min;
35      };
36      inline static double Median(vector<double> x)
37      {
38          int n = x.size(), n2 = n / 2 - 1;
39
40          if (n % 2 == 1)
41              return x[(n + 1) / 2 - 1];
42
43          return 0.5 * (x[n2] + x[n2 + 1]);
44      };
45      inline static double Variance(vector<double> x)
46      {
47          double mean = Mean(x), sumSq = 0;
48          int n = x.size();
49          int n1 = n - 1;
50
51          for (int i = 0; i < n; i++)
52          {
```

```
53         double delta = x[i] - mean;
54
55         sumSq += delta * delta;
56     }
57
58     return sumSq / n1;
59 };
60 };
```