

// Program 4

```
#include <iostream>
#include <cstdlib>
#include <cmath>
using namespace std;

const int nsize = 100;

void stats( int, float [], float &, float &, float &, float & );

int main()
{
    int n = 0;
    float x[nsize], mean, s, min, max;

    cout << "Enter at least two numbers with line break between each.\n";
    cout << "Enter Ctrl+Z on a line by itself when finished.\n";
    cin >> x[n];
    while ( !cin.eof() ) {
        n++;
        cin >> x[n];
    }

    stats( n, x, mean, s, min, max );

    cout << "\n" << n << " numbers were entered\n";
    cout << "The mean is " << mean << "\n";
    cout << "The sample standard deviation is " << s << "\n";
    cout << "The minimum number is " << min << "\n";
    cout << "The maximum number is " << max << endl;

    cout << "\n\n"; system( "PAUSE" );
    return( EXIT_SUCCESS );
}

void stats( int n, float x[], float &mean, float &s, float &min, float &max )
{
    int k = 0;
    float temp, sum = x[k], sum2 = x[k] * x[k];
    min = x[k];
    max = x[k];
    for ( k = 1; k < n; k++ ) {
        temp = x[k];
        if ( temp < min ) min = temp;
        if ( temp > max ) max = temp;
        sum += temp;
        sum2 += temp * temp;
    }

    mean = sum / n;
    s = sqrt( ( sum2 - sum * sum / n ) / ( n - 1 ) );
    return;
}
```