



AVERAGE EXAMPLES

Three Array Demonstration Programs



OVERVIEW

	Example 1	Example 2	Example 3
Data	Random	Random	Console
Average Function	N/A	Fixed Array Size	Variable Array Size



PSEUDO-RANDOM NUMBERS

```
#include <random>
#include <chrono>

long ticks = chrono::system_clock::now().time_since_epoch().count();

default_random_engine          rng((unsigned)(ticks));
uniform_int_distribution<int>  range(1, 100);
```



```
int main()
{
    int    numbers[10];

    for (int i = 0; i < 10; i++)
        numbers[i] = range(rng);

    double    sum = 0;

    for (int i = 0; i < 10; i++)
        sum += numbers[i];

    cout << "The average is " << sum / 10 << endl;

    return 0;
}
```

average.cpp
VERSION I



average.cpp VERSION 2

```
cout << "The average is " << sum / 10 << endl;  
cout << "The average is " << average(numbers) << endl;
```

```
double average(int* numbers)  
{  
    double    sum = 0;  
  
    for (int i = 0; i < 10; i++)  
        sum += numbers[i];  
  
    return sum / 10;  
}
```



```
int main()
{
    int    scores[1000];
    int    count  = 0;

    while (count < 1000)
    {
        int    score;
        cout << "Please enter a score: ";
        cin >> score;
        if (score != -1)
            scores[count++] = score;
        else
            break;
    }

    if (count == 1000)
        cout << "The number of entered scores exceeds 1000" << endl;

    cout << "The average is " << average(count, scores) << endl;

    return 0;
}
```

average.cpp
VERSION 3



```
double average(int size, int* a)
{
    if (size == 0)
    {
        cerr << "Array is empty" << endl;
        return 0;
    }

    double sum = 0;

    for (int i = 0; i < size; i++)
        sum += a[i];

    return sum / size;
}
```

average
FUNCTION