

**CS127-5L: Computer Programming 2 Laboratory
Machine Problem #6: I/O Streams and Data Files**

Name:	Carreon, Ma. Addine Anne T.	Score:
Section:	A35	Date: 04-20-2023

Instructions:

1. Save your file as Surname_Firstname_MP6. Ex. **Isip_MP6.cpp**
2. You will submit the following and send it to BB .
 - a. PDF file of Machine Problem 1 provided with the screenshot of your answers (Sample Run)
 - b. C++ script with .cpp extension.
3. Your program must have comments for each section.

Header Comments:

Write a description of the program.

Written by: Cheryl Mari M. Isip

Date: April 21, 2022

Time: 7:30am

Program: BSCPE

Course: CS127-5L

Section: B20

School: Mapua University

EXERCISE

Store the following data in a file:

5 96 87 78 93 21 4 92 82 85 87 6 72 69 85 75 81 73

Write a C++ program to calculate and display the average of each group of numbers in the file created. The data is arranged in the file so that each group of numbers is preceded by the number of the data items in the group. Therefore, the first number in the file 5, indicates the next five numbers should be grouped together. The number 4 indicates that the following four numbers are a group, and the 6 indicates that the last six numbers are a group.

Hint: Use a nested loop. The outer loop should terminate when the end of the file has been encountered.

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Take a screenshot and paste your output:

The screenshot shows the Microsoft Visual Studio IDE interface. On the left, the Solution Explorer displays a single project named 'Carreon_Ma.Addine_MP6'. The main workspace contains two tabs: 'Data.txt' and 'Carreon_Ma.Addine_MP6.cpp'. The code in 'Carreon_Ma.Addine_MP6.cpp' is as follows:

```
1 //The code is to calculate and display the average of each group of numbers in the file created.
2 //Written by: Ma. Addine Anne T. Carreon
3 //Date: April 20, 2023
4 //Time: 3:10 PM
5 //Program: BDS5
6 //Course: CS127-5L
7 //Section: A35
8 //School: Mapua University
9
10 #include <iostream>
11 #include <fstream>
12 #include <iomanip>
13
14 using namespace std;
15
16 int main() {
17     std::ifstream infile("Data.txt");
18
19     if (!infile) {
20         cout << "Error opening file\n";
21         return 1;
22     }
23
24     int num_items, num;
25     double sum, avg;
26     while (infile >> num_items) {
27         sum = 0.0;
28         cout << "The number of data in this group is " << num_items << "\n";
29
30         cout << "The data in this group are: ";
31         for (int x = 1; x <= num_items; x++) {
32             infile >> num;
33             cout << num << " ";
34             sum += num;
35         }
36         cout << endl;
37
38         avg = sum / num_items;
39         cout << "The average of the group of " << num_items << " numbers is " << std::fixed << std::setprecision(2) << avg << "\n";
40         cout << endl;
41     }
42
43     infile.close();
44     return 0;
45 }
```

The output window on the right shows the results of the program's execution:

```
The number of data in this group is 5
The data in this group are: 96 87 78 93 21
The average of the group of 5 numbers is 75.00

The number of data in this group is 4
The data in this group are: 92 82 85 87
The average of the group of 4 numbers is 86.50

The number of data in this group is 6
The data in this group are: 72 69 85 75 81 73
The average of the group of 6 numbers is 75.83

C:\Users\Addine Carreon\Desktop\COMPUTER\LAB\Carreon_Ma.Addine_MP6\x64\Debug\Carreon_Ma.Addine_MP6.exe (process 30476) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

The status bar at the bottom indicates the date and time as 20/04/2023 and 9:06 pm.