

CS127-5L: Computer Programming 2 Laboratory

Machine Problem #4: Pointers

Name:	Carreon, Ma. Addine Anne T.	Score:
Section:	A35	Date: 03-30-2023

Instructions:

1. Save your file as Surname_Firstname_MP4. Ex. Isip_MP4.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: March 30, 2023
Time: 7:30am
Program: BSCPE
Course: CS127-5L
Section: A35
School: Mapua University

EXERCISE

Write a C++ program that declares three one-dimensional arrays name miles, gallons and mpg. Each array should be capable of holding 10 elements.

In the miles array, store the numbers: 240.5, 300.0, 189.6, 310.6, 280.7, 216.9, 199.4, 160.3, 177.4 and 192.3.

In the gallons array, store the numbers 10.3, 15.6, 8.7, 1.4, 16.3, 15.7, 14.9, 10.7, 8.3 and 8.4.

Each element of the mpg array should be calculated as the corresponding element of the miles array divided by the equivalent element of the gallons array: for example, $\text{mpg}[0] = \text{miles}[0] / \text{gallons}[0]$.

Use pointers when calculating and displaying the elements of the mpg array.

CS127-5L: Computer Programming 2 Laboratory

Machine Problem #4: Pointers

Take a screenshot and paste your output:

The screenshot shows the Visual Studio IDE with a C++ file named `Carreon_Ma...ddine_MP4.cpp` open. The code is a program that calculates miles per gallon (MPG) for a car. It uses three arrays: `miles`, `gallons`, and `mpg`. The `main` function iterates through these arrays, calculates the MPG for each entry, and prints the results. The output is displayed in the `Microsoft Visual Studio Debug Console`.

```
1 //The code is to declare three one-dimensional arrays name miles, gallons and mpg.
2 //Written by: Ma. Addine Anne T. Carreon
3 //Date: March 30, 2023
4 //Time: 2:20 PM
5 // Program: B505
6 //Course: CS127-5L
7 //Section: A35
8 //School: MAPUA University
9
10 #include <iostream>
11 #include <iomanip>
12
13 using namespace std;
14
15 int main() {
16     double miles[10] = { 240.5, 300.0, 189.6, 310.6, 280.7, 216.9, 199.4, 160.3, 177.4, 192.3 };
17     double gallons[10] = { 10.3, 15.6, 8.7, 1.4, 16.3, 15.7, 14.9, 10.7, 8.3, 8.4 };
18     double mpg[10];
19     double* a_mpg = mpg;
20
21     for (int x = 0; x < 10; x++) {
22         *(a_mpg + x) = miles[x] / gallons[x];
23     }
24
25     cout << "Miles \t\t Gallons \t MPG" << endl;
26     for (int x = 0; x < 10; x++) {
27         cout << fixed << setprecision(2) << miles[x] << "\t\t" << gallons[x] << "\t\t" << *(a_mpg + x) << endl;
28     }
29     return 0;
30 }
```

The output in the debug console is as follows:

Miles	Gallons	MPG
240.50	10.30	23.35
300.00	15.60	19.23
189.60	8.70	21.79
310.60	1.40	221.86
280.70	16.30	17.22
216.90	15.70	13.82
199.40	14.90	13.38
160.30	10.70	14.98
177.40	8.30	21.37
192.30	8.40	22.89

The debug console also shows the following message:

```
C:\Users\Addine Carreon\Desktop\COMPUTER\LAB\Carreon_Ma. Addine_MP4\x64\Debug\Carreon_Ma. Addine_MP4.exe (process 25848) 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 . . .
```