

Computer Programming

Quiz2

June 8, 2022



Problem 1

- Write a program to rotate three integers x, y, and z, where x replaces y, y replaces z, and z replaces x. Here's the function prototype. Failure to comply with the prototype will result in 0 points.
 - `void rotate3(int *px, int *py, int *pz);`

Problem 1

- **Program output**

```
[ohyong@newton Quiz2_s123]$ vi pr1.c  
[ohyong@newton Quiz2_s123]$ gcc pr1.c -o pr1  
[ohyong@newton Quiz2_s123]$ ./pr1  
Enter 3 numbers : 1 2 3  
3      1      2
```

```
[ohyong@newton Quiz2_s123]$ ./pr1  
Enter 3 numbers : 5 12 13  
13      5      12
```

Problem 2

- Write the following program. Declare a 3×5 integer array and initialize it with a random number between 0 and 9. Implement a function to display the values of the array, and then implement a function to double the value of each array and print the array. Each function follows a given prototype.

```
#define ROWS 3
#define COLS 5
void times2(int ar[][COLS], int r);
void showarr2(int ar[][COLS], int r);
```

Problem 2

- Program output

```
[ohyong@newton Quiz2_s123]$ vi pr2.c
[ohyong@newton Quiz2_s123]$ gcc pr2.c -o pr2
[ohyong@newton Quiz2_s123]$ ./pr2
 1  9  9  7  7
 4  9  9  7  8
 5  0  8  8  9

 2 18 18 14 14
 8 18 18 14 16
10  0 16 16 18
```

Problem 3

- Write the following program. Enter a value in an integer type array of size 10. Implement the `show_arr()` function to show the input array, and implement the `max_min_diff()` function to return the difference between the largest and smallest values of the array. Here's the function prototype:

```
void show_arr(int ar[], int n);  
int max_min_diff(int ar[], int n);
```

Problem 3

- **Program output**

```
[ohyong@newton Quiz2_s123]$ vi pr3.c
[ohyong@newton Quiz2_s123]$ gcc pr3.c -o pr3
[ohyong@newton Quiz2_s123]$ ./pr3
Enter 10 integer numbers: 1 2 3 4 5 60 70 80 90 100

Input integer array: 1 2 3 4 5 60 70 80 90 100
Max - Min difference : 99
```

Submission

- **Submit to Newton server**

At the end of the Quiz2, submit your C source file by typing

```
~gs1401/bin/submit Quiz2_s123 pr1.c pr2.c pr3.c // due : 2:00 pm
```

You may check that you have submitted your source code correctly by typing

```
~gs1401/bin/submit -check
```