창의적 소프트웨어 프로그래밍 Lab 2

Handed out : Thu, Sep 15, 2022

Due : Thu, Sep 15, 2022, 23:59 (NO SCORE for late submissions!)

Submit your file on LMS.

1. Write a program that works as follows.
   A. Define a structure named Person that can store the name and age of a person.
   B. Create a Person type array of length 3.
   C. Take three names and ages from the user and stores them in each element of the array.
      i. Assume that each name is one English word, less than 10 letters, and each age is an integer number larger than 0.
   D. Print out the contents of the array.
   E. Input: Three pairs of name and age
   F. Output: The stored name and age in the array
   G. Files to submit:
      i. A C source file

```
$ ./array_struct_person
John 20⏎
Amy 20⏎
Emma 21⏎
Name:John, Age:20
Name:Amy, Age:20
Name:Emma, Age:21
```

2. Complete the code skeleton below to write a program to manipulate a 2D point.
   A. Create a variable (p1) of Point type (see the code skeleton below) and fill in the value of each member by taking two integers from user.
   B. Then call getScale2xPoint() (see the code skeleton below) to get a Point p2 whose member value is twice as large as that of p1.

C. Print out the value of p1 and p2.

D. Swap the value of p1 and p2 using swapPoints() (see the code skeleton below).

E. Print out the value of p1 and p2 again.

F. Note that

   i. The code for printing Point variables must be in main().

G. Input: Two integer numbers

H. Output: The value of p1 & p2 after calling getScale2xPoint() and swapPoints()

I. Files to submit:

   i. A C source file

```
$./point
1 2
Calling getScale2xPoint()
P1 : 1 2
P2 : 2 4
Calling swapPoint()
P1 : 2 4
P2 : 1 2
```

Code skeleton:

```
typedef struct
{
	int xpos;
	int ypos;
}Point;

Point getScale2xPoint(const Point* p){
	//Implement this function
}

void swapPoints(Point* p1, Point* p2){
	//Implement this function
}

int main(void){
	//Implement this function
}
```