

Exercise #01

- Write program in Visual Studio. You must understand how to compress your project folder. If you upload a wrong compressed file during test/exam, you will receive a *grade of zero*. 務必自己練習壓縮 project 資料夾，考試上傳失敗就是 0 分
- You don't need to turn in your homework, but you should practice all problems because they may appear in the later exam. 作業自己練習，不用繳交，之後考試可能會出現類似題目

Problem 1.

- ☐ Assume that **children** is an integer variable containing the number of children in a community and that **families** is an integer variable containing the number of families in the same community.
- ☐ Write a program that inputs number of **children** and number of **families**, and outputs the average number of children per family.
- ☐ Hint: $\text{avg} = (\text{float})\text{children} / \text{families};$

Problem 2.

- ☐ (*Separating Digits in an Integer*) Write a program that inputs one five-digit number, separates the number into its individual digits and prints the digits separated from one another by three spaces each.
- ☐ [Hint: Use combinations of integer division and the remainder operation.]
- ☐ For example, if the user types in 42139, the program should print 4 2 1 3 9

Problem 3.

- ☐ Input three sides of a triangle (a, b, c), calculate the area of the triangle
 - ☐ 輸入三角形三邊長 a, b, c，利用海龍公式求三角形面積 area，並輸出至小數點 3 位數 (%.3f)
- ☐ $\text{area} = \sqrt{s(s-a)(s-b)(s-c)}$, where $s = (a + b + c) / 2$
- ☐ #include <math.h>

Problem 4.

- ☐ (*Here is your change*) Input the price (<100), give a hundred dollar bill, output the numbers of coins for 50, 10, 5, 1, respectively.
 - ☐ 找零錢,金額 100 以內,輸入消費金額,拿百元鈔找零錢,輸出最少的零錢數(面額 50, 10, 5, 1)

Problem 5.

- ☒ (*Converting from seconds to hours, minutes and seconds*) Write a program that asks the user to enter the total time elapsed, in seconds, since an event and converts the time to hours, minutes and seconds. The time should be displayed as hours:minutes:seconds.
[Hint: Use the remainder operator] 輸入經過時間的總秒數，換算成時分秒輸出