EC 1003 程式設計

Spring 2018

Homework 1

Due: 23:55PM, Mar.29, 2018

1. (Prob. 2.19) Write a program that inputs three different integers from the keyboard, then prints the sum, the average, the product, the smallest and the largest of these numbers. Use only the single-selection form of the if statement you learned in Chapter 2. The screen dialogue should appear as follows:

```
Enter three different integers: 13 27 14
Sum is 54
Average is 18
Product is 4914
Smallest is 13
Largest is 27
```

2. (Prob. 2.32) The body mass index(BMI) can be calculated as follows:

$$\text{BMI} = \frac{\text{weightInKilograms}}{\text{heightInInMeters} \times \text{heightInMeters}}$$

Create a BMI calculator application that reads the user's weight in kilograms and height in meters, then calculates and displays the user's body mass index. Also, the application should display the following information so the user can evaluate his/her BMI:

BMI VALUES

Underweight:	less than 18.5
Normal:	between 18.5 and 24.9
Overweight:	between 25 and 29.9
Obese:	30 or greater

Please show the results for the following inputs:

Weight	height
40kg	160cm
55kg	165cm
85kg	175cm
110kg	170cm

3. (Prob. 3.20) (Salary Calculator) Develop a program that will determine the gross pay for each of several employees. The company pays "straight time" for the first 40 hours worked by each employee and pays "time-and-a-half" for all hours worked in excess of 40 hours. You are given a list of the employees of the company, the number of hours each employee worked last week and the hourly rate of each employee. Your program should input this information for each employee, and should determine and display the employee's gross pay. Here is a sample input/output dialog:
   Enter # of hours worked (-1 to end) : 41
   Enter hourly rate of the worker ($00.00): 10.00
   Salary is $415.00

   Enter # of hours worked (-1 to end): -1

   Here is the list of the employee work hours. Please show the results of your program using this given list.

Worker ID	Hours	Hourly rate
1.	36	10.00
2.	40	20.00
3.	45	10.00

4. (Prob 3.34) (Palindrome Tester) A palindrome is a number or a text phrase that reads the same backward as forward. For example, each of the following five-digit integers is a palindrome: 12321, 55555, 45554 and 11611. Write a program that reads in a five-digit integer and determines whether or not it is a palindrome. [Hint: Use the division and remainder operators to separate the number into its individual digits.]
   Please show the results of the following inputs:
   91419
   17271
   12938
   83740

Hand in:

1. Source code (You must write comments in your codes.)
2. The results of your program
   Please use 'Print Screen' button to copy the screen after you run the program and save the image to a jpg file. Name your source code files as hw1_1.c, hw1_2.c... and the result files as result1_1.jpg, result1_2.jpg, and so on so forth (you can also save the results as pdf files). Put all the files into a directory named by your student ID and zip the directory. Upload the zipped file.