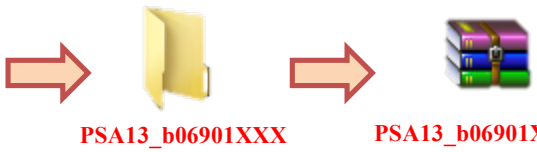
Programming Session Assignment 13

2018/01/02 by TA 陳姿玲

REQUIRED FILES

Please **compress a folder** named **PSA13_b06901XXX** (student ID) that contains the following files:

- ✓ b06901XXX _p1.cpp
- ✓ b06901XXX _p2 project
- ✓ b06901XXX _p3 project



Do not submit executable files (.exe). Files with names in wrong format will not be graded. In your .cpp files, we suggest you write comments in details as much as you can. It will be good for TAs to read your code and for your future reference and maintenance. (Due date: 01/03 06:00)

PROBLEM DESCRIPTION

1. [Required file: b06901XXX _p1.cpp]

There're some bugs in the file "**PSA13_P1.cpp**". Try to fix them until there is no error or warning. Then make it work as the following format.

Format:

```
Line area = 0
Rectangle area = 3200
Ellipse area = 314.159
```

2. **[Required file: b06901XXX _p2 project]**
   Revise **DigitalWatch.h** and **DigitalWatch.cpp** of **Sample_code**, and make them support **PSA13_main.cpp** provided for PSA13_P2 project.
   Please overload:

   (1) operator+ : Let users use + to update the time (add how many seconds).

```
DigitalWatch watchA, watchB;
int secToAdd;
...
watchA = watchB + secToAdd;
```

   (2) operator<<: Let cout knows how to print our Digital Watch. (use twelve format as the following example)

```
DigitalWatch watchA;
...
cout<< "the watch time is: " << watchA;
```

   Example:

```
[Initialize]
Current Time: 02:08:04 PM

[Set Time]
100:200:300 is not a legal setting!
After Setting: 12:30:00 PM

[Update Time]
Seconds Elapsed: 90
Updated Time: 12:31:30 PM
```

   Note:

   ✓ you only need to submit **DigitalWatch.h** and **DigitalWatch.cpp** in b06901XXX_p2 folder.

3. **[Required file: b06901XXX _p3 project]**

There are **[TODO]**s in the files **Student.h**, **Student.cpp**, **AveStudent.h**, **AveStudent.cpp** provided for PSA13_P3 project. Please finish this project that input students' information, including the name and the score, and output the information of the excellent student, who has the highest score, and then output the average score of all students. When the average score is less than 70, the program outputs again and stops.

Format:

```
====Highest score====
Name >> Heron
Score >> 75
AveScore >> 75
====================
New name >> Ava
Ava's score >> 90
====Update  score====
Name >> Ava
Score >> 90
AveScore >> 82.5
====================
New name >> Aiden
Aiden's score >> 56
====Update  score====
Name >> Ava
Score >> 90
AveScore >> 73.6667
====================
New name >> Circle
Circle's score >> 45
====Update  score====
Name >> Ava
Score >> 90
AveScore >> 66.5
====================
====Highest score====
Name >> Ava
Score >> 90
AveScore >> 66.5
====================
```

Input

Output (excellent student & average score**)**

Input

Output (excellent student & average score**)**

Input

Output (excellent student & average score**)**

Output (final**)**

Note:

- ✓ make class Student as base class
- ✓ make class AveStudent as derived class
- ✓ you need to submit **AveStudent.cpp**, **AveStudent.h**, **Student.cpp**, **Student.h** in b06901XXX_p3 folder.