國立台中教育大學		108 學年度	第 2 學期	資訊工程學系	資一甲	1/1 頁
		第進階程式設計	第一次隨堂考試 (A 卷)	考試日期	109 年 04 月 15 日 09:10~10:40	
計算機	否	參考資料（請詳填）	CLOSE BOOK	學號：	姓名：	教師:李宗翰

1. Please write an **Event class** to create a composition object from Time.cpp and Date.cpp classes for a particular event. For example, the Event object called "**Dragon_Boat_Festival_2020**" represents the Dragon Boat Festival (端午節) of 2020 which set to 0:0:0 6/25/2020. Write a program that tests print function in the time and date in the format of "Month/Day/Year hour:minute:second" to illustrate that the operator works correctly.
   A. Complete the class Time.cpp (20%)
   B. Complete the class Date.cpp (20%)
   C. Complete the class Event.cpp (10%)
   D. Complete the testing program q1.cpp to meet the requirement of output message as shown as following. (20%)

Output:

```
Create the Dragon_Boat_Festival_2020
Print the event for the Dragon_Boat_Festival_2020 object.
Dragon Boat Festival 2020 is 6/25/2020 0:0:0
Modify the event of Dragon_Boat_Festival_2020 object to the noon of Dragon Boat Festival 2020 by using setEvent().
Print the event for the modified Dragon_Boat_Festival_2020 object.
The noon of Dragon Boat Festival 2020 is 6/25/2020 12:0:0
```

2. A class **Cube** (立方體) has attribute **length** (邊長) which default to 1.0 (double) with default argument. Provide member functions
   - **getPerimeter (周長)**: Returns the perimeter of a cube, which is calculated as perimeter = 12 * length.
   - **getVolume (體積)**: Returns the volume of a cube, which is calculated as volume = length * length* length.

   Also, the class should provide **set** and **get** functions for the length attribute. The set functions should verify the value of length is larger than or equal to 1.0 and less than or equal to 20.0 (邊長須大於或等於 1.0 並小於或等於 20.0). Please complete the member function definitions for class Cube should named "**Cube.cpp**".
   A. Complete the class of Cube.cpp (15%)
   B. Write a testing program q2.cpp to create three Cube objects by following statement to meet the output message as shown as following. (15%)
      Cube a;
      Cube b(10.0);
      Cube c(-10.0);

Output:

```
a: length = 1; perimeter = 12; Volume = 1
b: length = 10; perimeter = 120; Volume = 1000
c: length = 1; perimeter = 12; Volume = 1
```