清華大學 電機工程學系

107 學年度第一學期

EE-2310 計算機程式設計 (Introduction to Programming)

Homework #6 (佔學期總成績 3 分)

(每人一組) Due on Dec. 20, 2018 @ the Lab Sesion

Late Homeworks will NOT be accepted !

1. Write a C++ program to find the **median element** in an array of complex numbers in terms of their **magnitudes**. Note that the magnitude of a complex number (a + jb) is represented by the distance from the origin in an Argand diagram (http://mathworld.wolfram.com/ArgandDiagram.html).
   - Define a **class of complex number** with the following attributes, and define whatever public member functions you feel appropriate.

```
class complex_number {
    private:
        double re, img;
    public:
        // Define whatever member functions you feel appropriate
};
```

   - Try to assign the following 7 complex numbers into an array, say A[7], using some member function of the class of "complex_number".

     2+j7 4+j0 9+j4 8+j8 2+j4 5+j5 3+j2

   - Apply your program to produce the following outcome on the computer screen.

```
Original Array of Complex Numbers:
2+j7  4+j0  9+j4  8+j8  2+j4  5+j5  3+j2

The Median Element of the Array is: 5+j5
```