

National Tsing Hua University
Electrical Engineering Dept.,
Fall Semester, 2019

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

Homework #6 (3 points)

Due on Dec. 19, 2019 @ the Lab Session

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