Lab of Object-Oriented Programming:
Complex Number

黃威、陳岳紘、邱彥翔

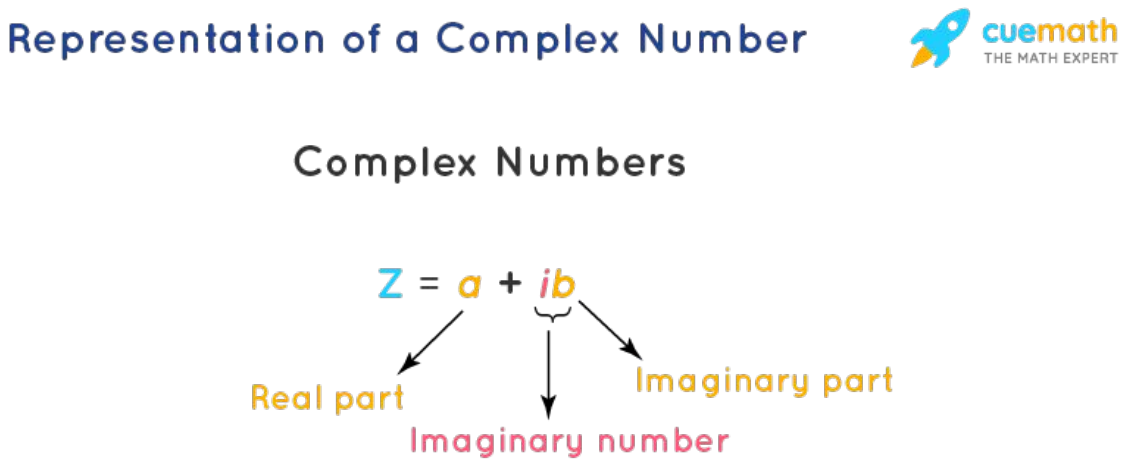
2022

使用 moodle 點名

請登入實習課的 moodle 課程

點擊出缺席並完成今日的點名

Complex Number(複數)



Ex: 3 + 5i, 1 + 1i, 6 + 3i…

Complex Number(複數)

```
class Complex{
    public:
        Complex operator+ (Complex n);
        Complex operator- (Complex n);
        Complex operator* (Complex n);
        Complex operator/ (Complex n);
        friend ostream &operator<<( ostream& out, const Complex &n);
        friend istream &operator>>( istream& in, Complex &n);
        Complex(){
            this->real = 0;
            this->imaginary = 0;
        }
        Complex(int r, int i){
            this->real = r;
            this->imaginary = i;
        }
    private:
        int real;
        int imaginary;
};
```

```
int main(){
    Complex n1(4, 4);
    Complex n2(2, -2);
    Complex n3;
    cin >> n3 ;
    cout<<"n3: "<<n3<<endl;
    n3 = n1+n2;
    cout<<"n3: "<<n3<<endl;
    n3 = n1-n2;
    cout<<"n3: "<<n3<<endl;
    n3 = n1*n2;
    cout<<"n3: "<<n3<<endl;
    n3 = n1/n2;
    cout<<"n3: "<<n3<<endl;
    return 0;
}
```

https://onlinegdb.com/Apaiwcr4r

Exercise 6

回『基礎題庫』

a172: 複數運算大禮包

內容 ：
複數可以分為實數部分與虛數部分，

在進行複數的比較/運算時，需要注意把實數與虛數部分分開比較

請依照題目指示，對所得到的複數進行比較運算。

請建立名為Complex的類別，並利用依照以下main格式撰寫。

請練習使用friend （未使用friend 僅採計原本成績80%）

（可參考ppt中提示的格式）

Exercise 6

範例輸入

```
2 2 2 2
1 2 3 4
```

範例輸出

```
C1 = 2+2i
C2 = 2+2i
C1==C2? true
C1<C2?  false
C1>C2?  false
C1+C2 = 4+4i
C1-C2 = 0+0i
C1*C2 = 0+8i
C1++  = 2+2i
C1++  = 3+3i
++C1  = 5+5i
++C1  = 6+6i
C2--  = 2+2i
C2--  = 1+1i
--C2  = -1-1i
--C2  = -2-2i
C1+=C2  4+4i
==============
```

```
C1 = 1+2i
C2 = 3+4i
C1==C2? false
C1<C2?  true
C1>C2?  false
C1+C2 = 4+6i
C1-C2 = -2-2i
C1*C2 = -5+10i
C1++  = 1+2i
C1++  = 2+3i
++C1  = 4+5i
++C1  = 5+6i
C2--  = 3+4i
C2--  = 2+3i
--C2  = 0+1i
--C2  = -1+0i
C1+=C2  4+6i
==============
```