DS and OOP

Lab4

Question

Implement a C++ class to compute the following equation which included operator overloading.("+" "*" "/" "<<")

Give 2 fraction and compute the result of A*B + A/B

Eg: A = 8 / 2   B = 2 / 1

A*B + A/B = ~~10 / 1~~ = 10

A = 1 / 2   B = 1 / 3

A*B + A/B = ~~10 / 6~~ = 5 / 3

Example

2 testing data

output:

10 // 用cout印出來即可

5/3


```
1  2
2  (8/2,2/1)
3  (1/2,1/3)
4
```

File format

input file format:

      # of testing data   // a,b,c,d is in range(0~2^32-1)

      (a/b,c/d)   // A = a/b, B = c/d

                                               // no space , b&d > 0

output format:

      x / y   // A*B + A/B = x / y

    (Note: if y == 1 , please output x only)

Requirement

- You need to implement :
    - Constructor
    - Addition operator overloading
    - Multiplication operator overloading
    - Division operator overloading
    - string operator overloading (<<)
- Use Command line to read file
- Use your workstation to run your code

Constructor

```
Fraction::Fraction(???) {

    // your code

}
```

Addition operator

```
Fraction operator+(const Fraction& A, const Fraction& B){

    // your code

    // compute A + B

}
```

Multiplication operator

```cpp
Fraction operator*(const Fraction& A, const Fraction& B){

    // your code

    // compute A * B

}
```

Division operator

```
Fraction operator/(const Fraction& A, const Fraction& B){

    // your code

    // compute A / B

}
```

String operator <<

ostream & operator<<(ostream & s, const Fraction & o){

    // your code

    // output the answer fraction you get

    // if answer is an integer a, please output a, do not output a/1

    // please print fraction in lowest term (最簡分數)

}

Reference

Putty:

https://help.cs.nctu.edu.tw/help/index.php/HOWTO_-_%E4%BD%BF%E7%94%A8PuTTY%E7%99%BB%E5%85%A5%E7%B3%BB%E4%B8%8A%E5%B7%A5%E4%BD%9C%E7%AB%99

Filezilla:

https://help.cs.nctu.edu.tw/help/index.php/HOWTO_-_%E9%80%A3%E4%B8%8A%E7%B3%BB%E4%B8%8A%E5%B7%A5%E4%BD%9C%E7%AB%99%E7%9A%84_FTP

Command line:

http://crasseux.com/books/ctutorial/argc-and-argv.html