CSE225L: Data Structures and Algorithm Lab

Lab 02: Classes & Objects

North South University

A class is a user defined blueprint or prototype from which objects are created. It represents the set of properties or methods that are common to all objects of one type.

Fraction.h

```
#ifndef FRACTION_H_INCLUDED
#define FRACTION_H_INCLUDED
#include <iostream>
using namespace std;
class Fraction{

private:
    int numerator;
    int denominator;

public:
    Fraction();
    Fraction(int, int);
    int getNumerator();
    void setNumerator(int);
    int getDenominator();
    void setDenominator(int);
    Fraction multiply(Fraction);
    void print();

};
#include "Fraction.tpp"
#endif // FRACTION_H_INCLUDED
```

Fraction.tpp

```
#include "Fraction.h"

Fraction::Fraction(){

    numerator = 0;
    denominator = 1;

}

Fraction::Fraction(int numerator, int denominator){
    this->numerator = numerator;
    this->denominator = denominator;
}

void Fraction::print(){
```

```
    cout<<numerator<<"/"<<denominator<<endl;

}

int Fraction::getNumerator(){
    return numerator;
}
void Fraction::setNumerator(int numerator){
    this->numerator = numerator;
}
int Fraction::getDenominator(){
    return denominator;
}
void Fraction::setDenominator(int denominator){
    this->denominator = denominator;
}
Fraction Fraction::multiply(Fraction f){
    Fraction result;
    result.numerator = numerator*f.numerator;
    result.denominator = denominator*f.denominator;
    return result;
}
```

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Tasks:

1. Add 3 functions in Fraction class to add, divide and subtract fractions.
2. In the driver file, create two Fraction objects f1 and f2. First one should be created using no argument constructor and second one with arguments 3 and 5.
    a. Set numerator and denominator of f1 to 2 and 6 respectively.
    b. Now add, divide and subtract between f1 and f2 and print the result using print function in Fraction class.