

## ***Rational Number Program***

### **Objective**

Your assignment is to implement a program that will be capable of adding, subtracting, multiplying and dividing rational numbers.

### **Example**

If you enter two rational numbers  $\frac{1}{2}$  and  $\frac{1}{2}$  you should get the following results.

$$\frac{1}{2} + \frac{1}{2} = \frac{2}{2} = 1$$

$$\frac{1}{2} - \frac{1}{2} = 0$$

$$\frac{1}{2} * \frac{1}{2} = \frac{1}{4}$$

$$\frac{1}{2} / \frac{1}{2} = \frac{2}{2} = 1$$

After typing the same rational numbers into the program we get results that should look similar to the results above. An example is shown below.

```

E:\PROGRA~1\XINOX5~1\JCREAT~1\GE2001.exe
1nd Rational Number
Input First Number: 1
Input Second Number: 2

2nd Rational Number
Input First Number: 1
Input Second Number: 2

-----Choose an Operation-----
To add rationals.....<Type 1>
To subtract rationals.<Type 2>
To multiply rationals.<Type 3>
To divide rationals...<Type 4>
1
<1 over 2> + <1 over 2> = <2 over 2>
Would like to do another Operation (y or n): y

-----Choose an Operation-----
To add rationals.....<Type 1>
To subtract rationals.<Type 2>
To multiply rationals.<Type 3>
To divide rationals...<Type 4>
2
<1 over 2> - <1 over 2> = 0
Would like to do another Operation (y or n): y

-----Choose an Operation-----
To add rationals.....<Type 1>
To subtract rationals.<Type 2>
To multiply rationals.<Type 3>
To divide rationals...<Type 4>
3
<1 over 2> * <1 over 2> = <1 over 4>
Would like to do another Operation (y or n): y

-----Choose an Operation-----
To add rationals.....<Type 1>
To subtract rationals.<Type 2>
To multiply rationals.<Type 3>
To divide rationals...<Type 4>
4
<1 over 2> / <1 over 2> = <2 over 2>
Would like to do another Operation (y or n): n

```

Now let's try another set of rational numbers to check if the program truly works for this

lets choose the rational numbers  $\frac{1}{3}$  and  $\frac{1}{2}$  . Here the results should be.

$$\frac{1}{3} + \frac{1}{2} = \frac{5}{6}$$

$$\frac{1}{3} - \frac{1}{2} = -\frac{1}{6}$$

$$\frac{1}{3} * \frac{1}{2} = \frac{1}{6}$$

$$\frac{1}{3} / \frac{1}{2} = \frac{2}{3}$$

After typing these rational numbers into the program we get results that should look similar to the results above.

```
E:\PROGRA~1\XINOXS~1\JCREAT~1\GE2001.exe
Would like to enter another Rational (y or n): y

1nd Rational Number
Input First Number: 1
Input Second Number: 3

2nd Rational Number
Input First Number: 1
Input Second Number: 2

-----Choose an Operation-----
To add rationals.....(Type 1)
To subtract rationals.(Type 2)
To multiply rationals.(Type 3)
To divide rationals...(Type 4)
1
<1 over 3> + <1 over 2> = <5 over 6>
Would like to do another Operation (y or n): y

-----Choose an Operation-----
To add rationals.....(Type 1)
To subtract rationals.(Type 2)
To multiply rationals.(Type 3)
To divide rationals...(Type 4)
2
<1 over 3> - <1 over 2> = <-1 over 6>
Would like to do another Operation (y or n): y

-----Choose an Operation-----
To add rationals.....(Type 1)
To subtract rationals.(Type 2)
To multiply rationals.(Type 3)
To divide rationals...(Type 4)
3
<1 over 3> * <1 over 2> = <1 over 6>
Would like to do another Operation (y or n): y

-----Choose an Operation-----
To add rationals.....(Type 1)
To subtract rationals.(Type 2)
To multiply rationals.(Type 3)
To divide rationals...(Type 4)
4
<1 over 3> / <1 over 2> = <2 over 3>
Would like to do another Operation (y or n): n
Would like to enter another Rational (y or n): n
Press any key to continue...
```