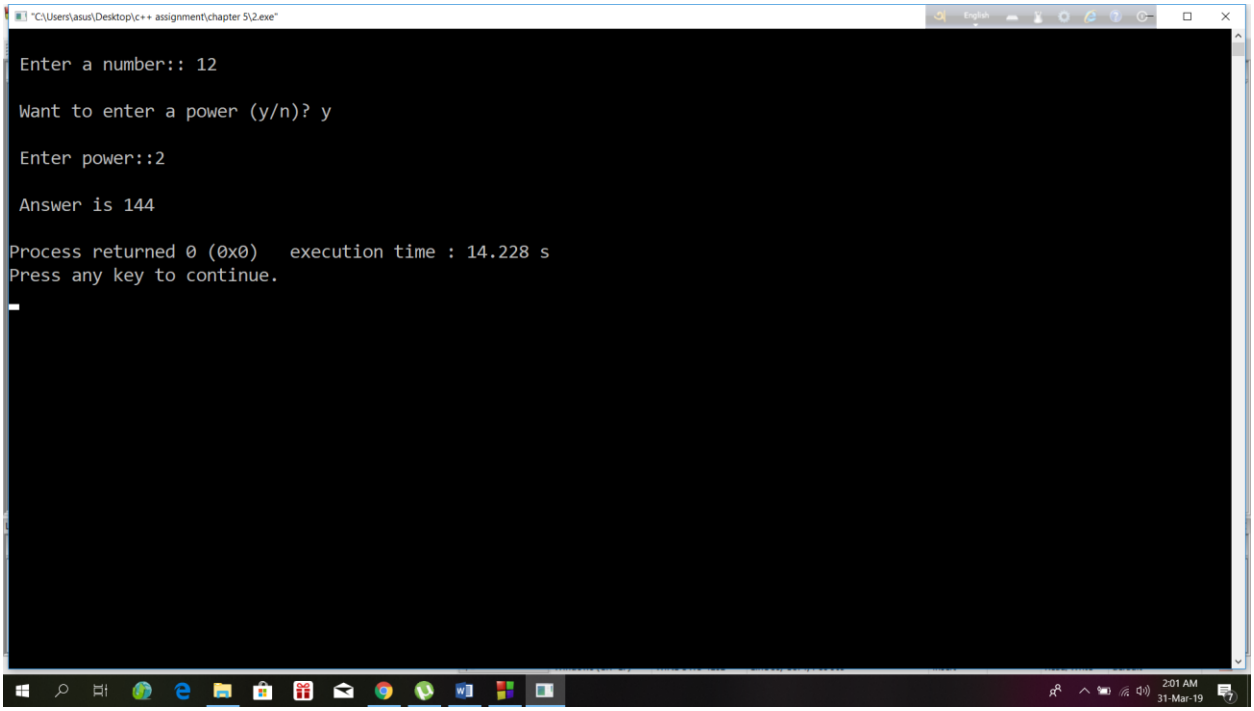
Chapter 5

Exercise 2:

```
#include <iostream>
using namespace std;
double power( double n, int p=2);
int main()
{
double number, answer;
int pow;
char YesOrNo;

cout << "\n Enter a number:: ";
cin >> number;

cout << "\n Want to enter a power (y/n)? ";
cin >> YesOrNo;
if( YesOrNo == 'y' )
{
cout << "\n Enter power::";
cin >> pow;
answer = power(number, pow);
}
else
```

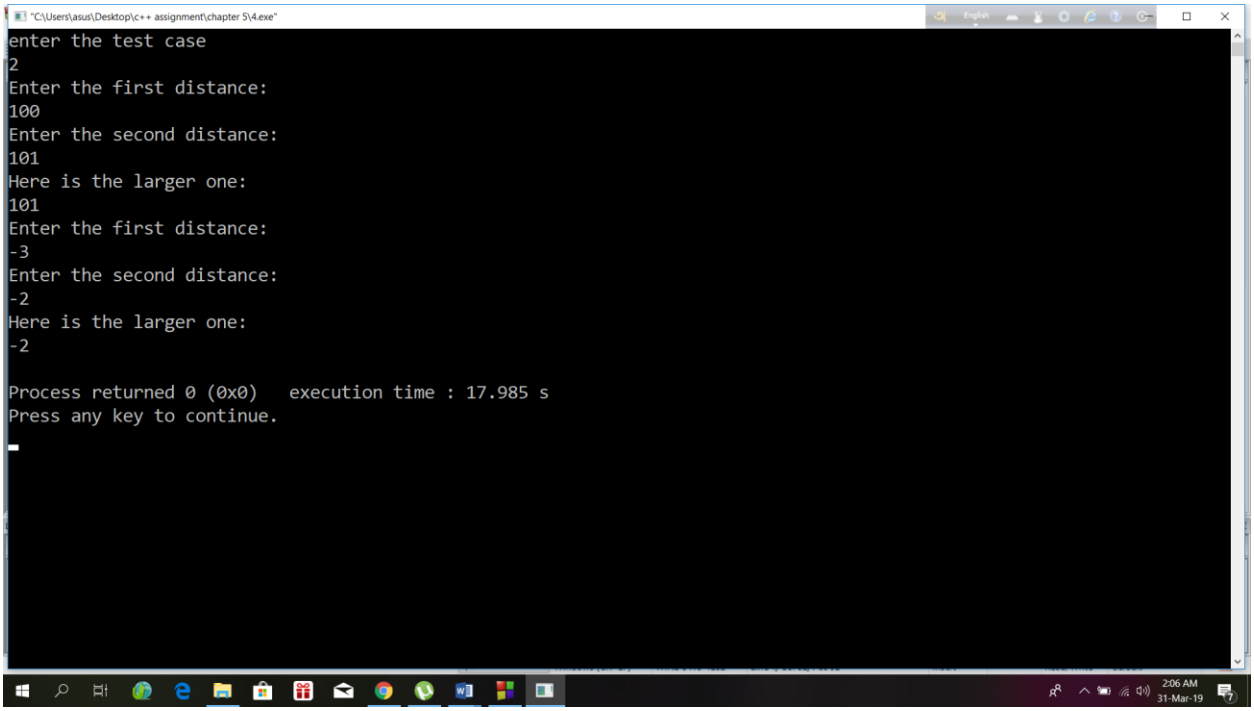
```
answer = power(number);
cout << "\n Answer is " << answer << endl;
return 0;
}

double power( double n, int p )
{
double result = 1.0;

for(int j=0; j<p; j++)
result *= n;
return result;
}
```



Exercise 4:

```
#include<iostream>
#include<iomanip>
using namespace std;
void larger(float d1,float d2);
int main()
{
   float d1,d2;
    int n;
   cout<<"enter the test case\n";
   cin>>n;
  while(n--)
   {
      cout<<"Enter the first distance:\n";
      cin>>d1;
      cout<<"Enter the second distance:\n";
      cin>>d2;
      cout<<"Here is the larger one:\n";
      larger(d1,d2);
      cout<<"\n";

   }
   return 0;
}
```

```
void larger(float d1,float d2)
{
   if(d1>d2)
      cout<<d1;
   else
   {
      cout<<d2;
   }
}
```



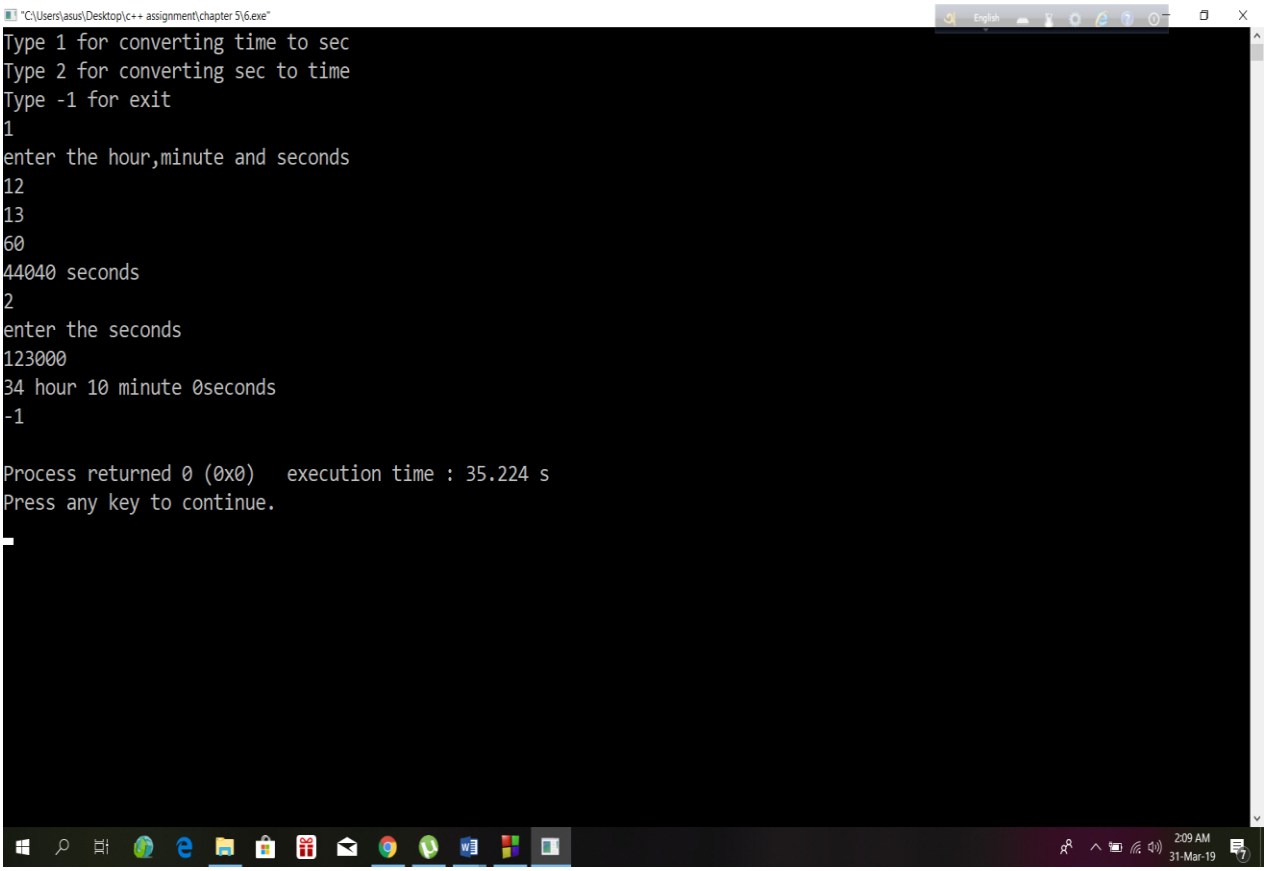
Exercise 6:

```
#include<iostream>
#include<iomanip>
using namespace std;
```

```
struct time
{
   int minute,hour;
   float sec;
};
long long int time_to_sec(time tt);
void sec_to_time(long long int s);
int main()
{
   time tt,res;
   long long int s,result;
   int a;
   cout<<"Type 1 for converting time to sec\n";
   cout<<"Type 2 for converting sec to time\n";
   cout<<"Type -1 for exit\n";



   do
   {
      cin>>a;
      if(a==1)
      {
         cout<<"enter the hour,minute and seconds\n";
```

```
        cin>>tt.hour>>tt.minute>>tt.sec;
        result=time_to_sec(tt);
        cout<<result<<" seconds\n";
    }
    if(a==2)
    {
        cout<<"enter the seconds\n";
        cin>>s;
        sec_to_time(s);

    }

  }
  while(a==1||a==2);

  return 0;
}
long long int time_to_sec(time tt)
{
  long long int total=0;
  total=(tt.hour*3600)+(tt.minute*60)+tt.sec;
  return total;
}
void sec_to_time(long long int s)
```

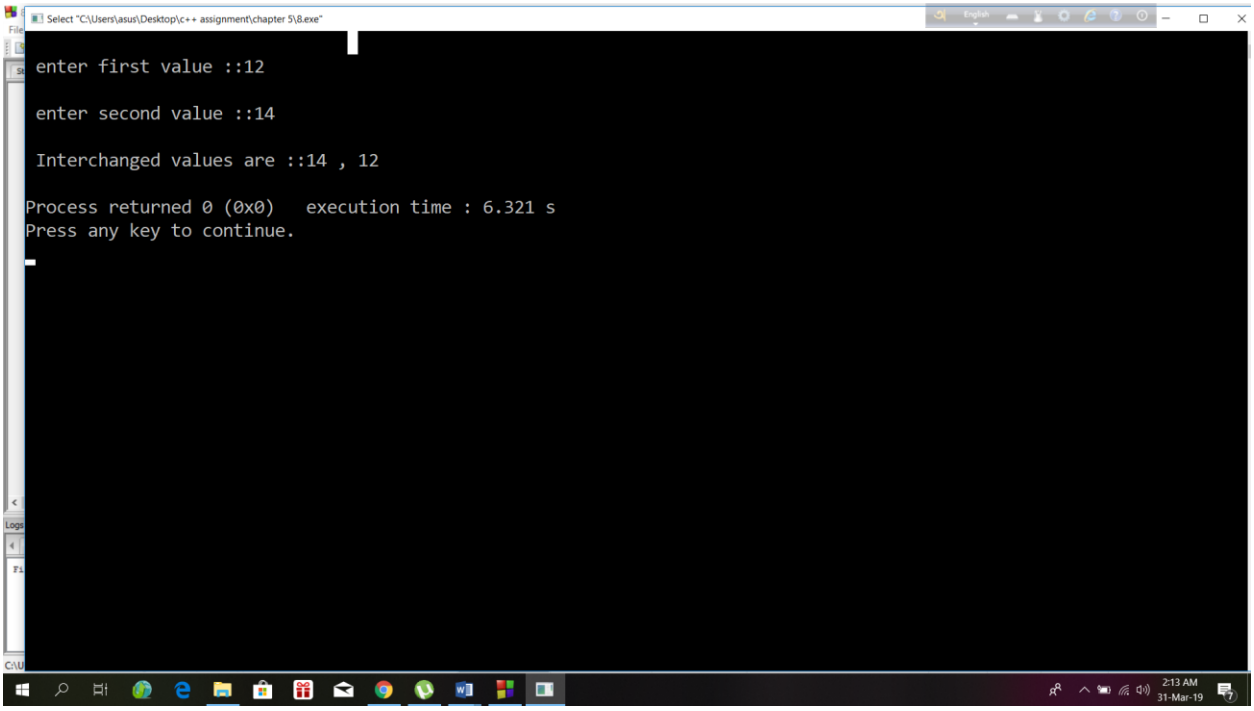
```
{
   time tt;
   int i;
   tt.minute=(s/60);
   tt.sec=(s%60);
   if (tt.minute>=60)
   {
      i=tt.minute;
      tt.minute=(tt.minute%60);
      tt.hour=(i/60);
      cout<<tt.hour<<" hour "<<tt.minute<<" minute "<<tt.sec<<"seconds";
   }
   else
   {

      cout<<tt.minute<<"-"<<tt.sec;
   }
}
```


"C:\Users\asus\Desktop\c++ assignment\chapter 5\6.exe"
Type 1 for converting time to sec
Type 2 for converting sec to time
Type -1 for exit
1
enter the hour,minute and seconds
12
13
60
44040 seconds
2
enter the seconds
123000
34 hour 10 minute 0seconds
-1
Process returned 0 (0x0) execution time : 35.224 s
Press any key to continue.
2:09 AM
31-Mar-19

Exercise 8:

```
#include<iostream>
#include<iomanip>
void swap(int*,int*);
using namespace std;

int main()
{
   int a,b;
   cout<< "\n enter first value ::";
   cin>>a;
   cout<< "\n enter second value ::";
   cin>>b;
   swap(&a,&b);
   cout<<"\n Interchanged values are ::" <<a<<" , " <<b<<endl;

   return 0;
}

void swap(int *a,int*b)
{
   int x;
   x = *a ;
   *a = *b;
```

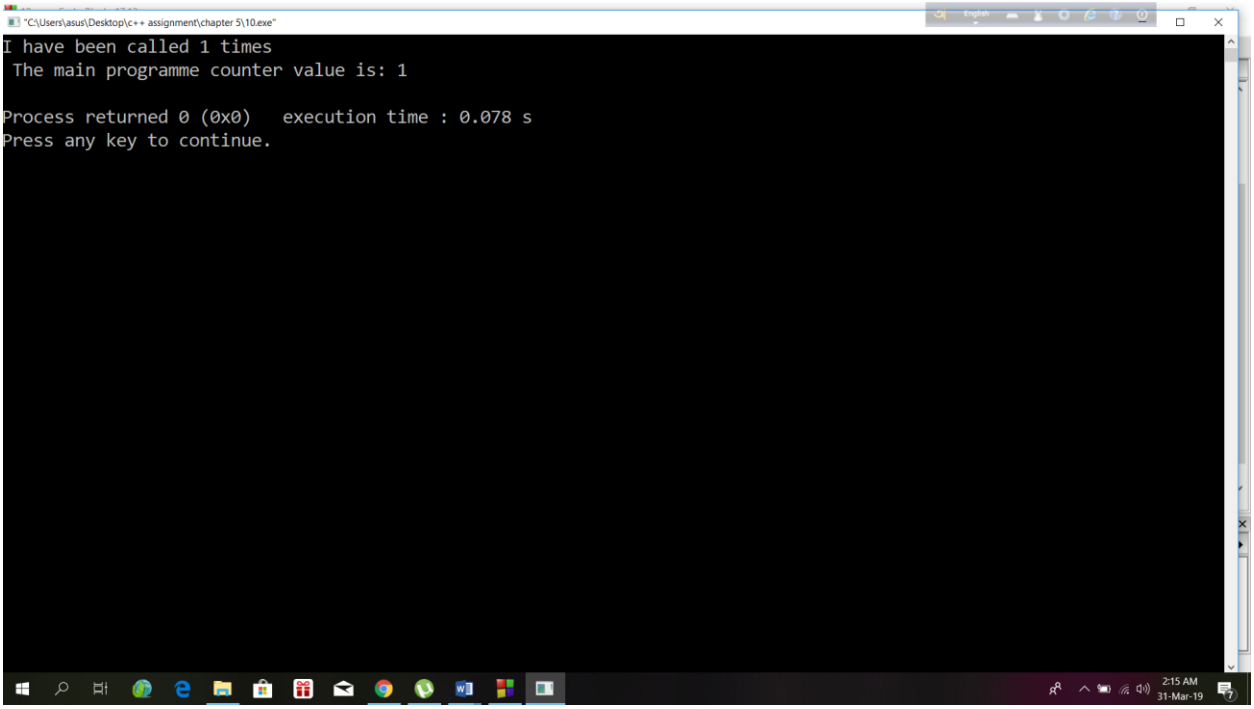
```
    *b = x ;
}
```



Exercise 8:

```
#include<iostream>
#include<iomanip>
#include<conio.h>
void caller_counter(void);
using namespace std;
int main()
{
 int outer_counter=0;
 outer_counter++;
caller_counter();
```

```
 cout<<"\n The main programme counter value is: "<<outer_counter<<endl;
}

void caller_counter(void)
{
 static int inner_counter=0;
  inner_counter++;
 cout<<"I have been called "<<inner_counter<<" times";
}
```



Exercise 12:

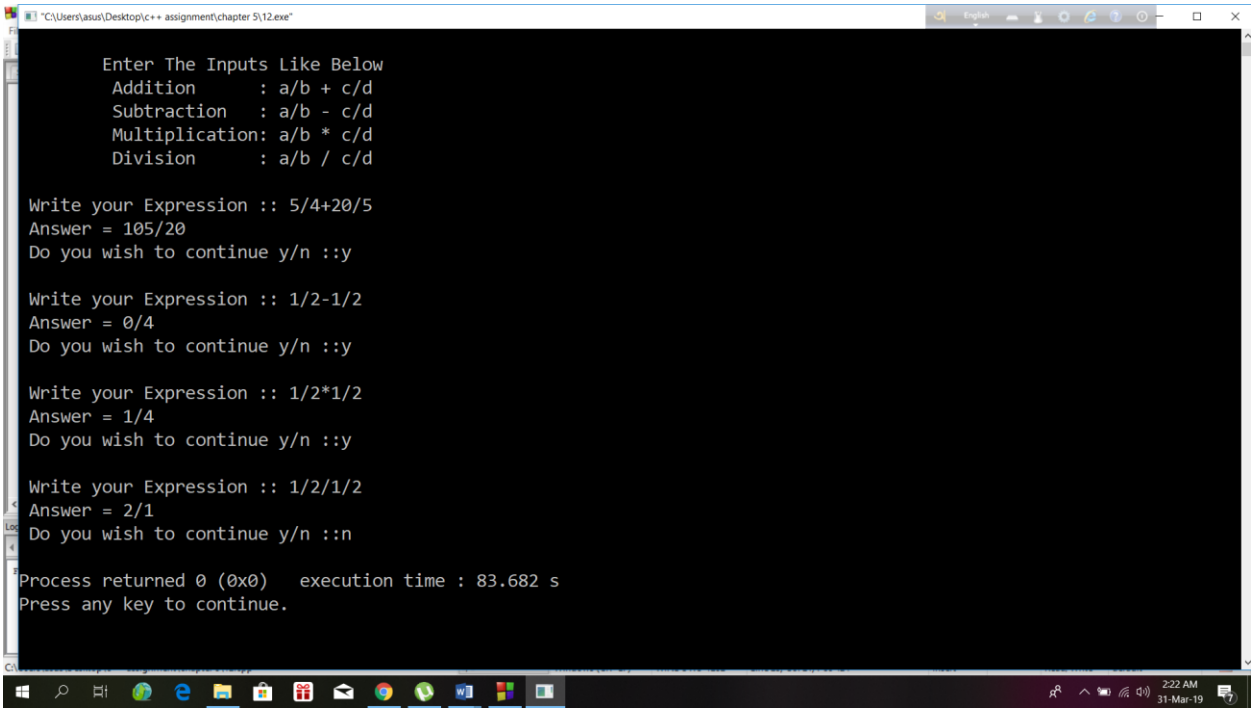
```
#include<iostream>
```

```
#include<iomanip>
#include<conio.h>

struct fraction
{
   int numerator;
   int denominator;
};
fraction fadd(fraction a, fraction b);
fraction fsub(fraction a, fraction b);
fraction fmul(fraction a, fraction b);
fraction fdiv(fraction a, fraction b);
using namespace std;
int main()
{
   fraction f[3];
   char sign, Operator;
   char ch;
   cout<<endl;

   cout<< "       Enter The Inputs Like Below"<<endl;

   cout<< "        Addition      : a/b + c/d    "<<endl;
   cout<< "        Subtraction   : a/b - c/d    "<<endl;
```

```
   cout<< "        Multiplication: a/b * c/d    "<<endl;
   cout<< "        Division      : a/b / c/d    "<<endl;

   do
   {
      cout<<"\n Write your Expression :: ";
      cin
>>f[0].numerator>>sign>>f[0].denominator>>Operator>>f[1].numerator>>sign>>f
[1].denominator;

      if(Operator=='+')
      {
         f[2]=fadd(f[0], f[1]);
      }

      if(Operator=='-')
      {
         f[2]=fsub(f[0], f[1]);
      }
      if(Operator=='*')
      {
         f[2]=fmul(f[0], f[1]);
      }
      if(Operator=='/')
      {
```

```
            f[2]=fdiv(f[0], f[1]);
        }
        cout<<" Answer = "<<f[2].numerator<<sign<<f[2].denominator;

        cout<< "\n Do you wish to continue y/n ::";
        cin>>ch;
    }
    while(ch!='n');
    return 0;
}
fraction fadd(fraction a, fraction b)
{
    fraction f;
    f.numerator  =a.numerator*b.denominator+a.denominator*b.numerator;
    f.denominator=a.denominator*b.denominator;
    return f;
}

fraction fsub(fraction a, fraction b)
{
    fraction f;
    f.numerator  =a.numerator*b.denominator-a.denominator*b.numerator;
    f.denominator=a.denominator*b.denominator;
    return f;
```

```
}

fraction fmul(fraction a, fraction b)
{
   fraction f;
   f.numerator  =a.numerator*b.numerator;
   f.denominator=a.denominator*b.denominator;
      return f;
}

fraction fdiv(fraction a, fraction b)
{
   fraction f;
   if(b.numerator != 0)
   {
      f.numerator  =a.numerator*b.denominator;
      f.denominator=b.numerator*a.denominator;
   }
   else
   {
      cout<<"Math error !"<<endl;
      return f;
   }
}
```


"C:\Users\asus\Desktop\c++ assignment\chapter 5\12.exe"
Enter The Inputs Like Below
Addition : a/b + c/d
Subtraction : a/b - c/d
Multiplication: a/b * c/d
Division : a/b / c/d
Write your Expression :: 5/4+20/5
Answer = 105/20
Do you wish to continue y/n ::y
Write your Expression :: 1/2-1/2
Answer = 0/4
Do you wish to continue y/n ::y
Write your Expression :: 1/2*1/2
Answer = 1/4
Do you wish to continue y/n ::y
Write your Expression :: 1/2/1/2
Answer = 2/1
Do you wish to continue y/n ::n
Process returned 0 (0x0) execution time : 83.682 s
Press any key to continue.
2:22 AM
31-Mar-19

>>THE END<<