

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;

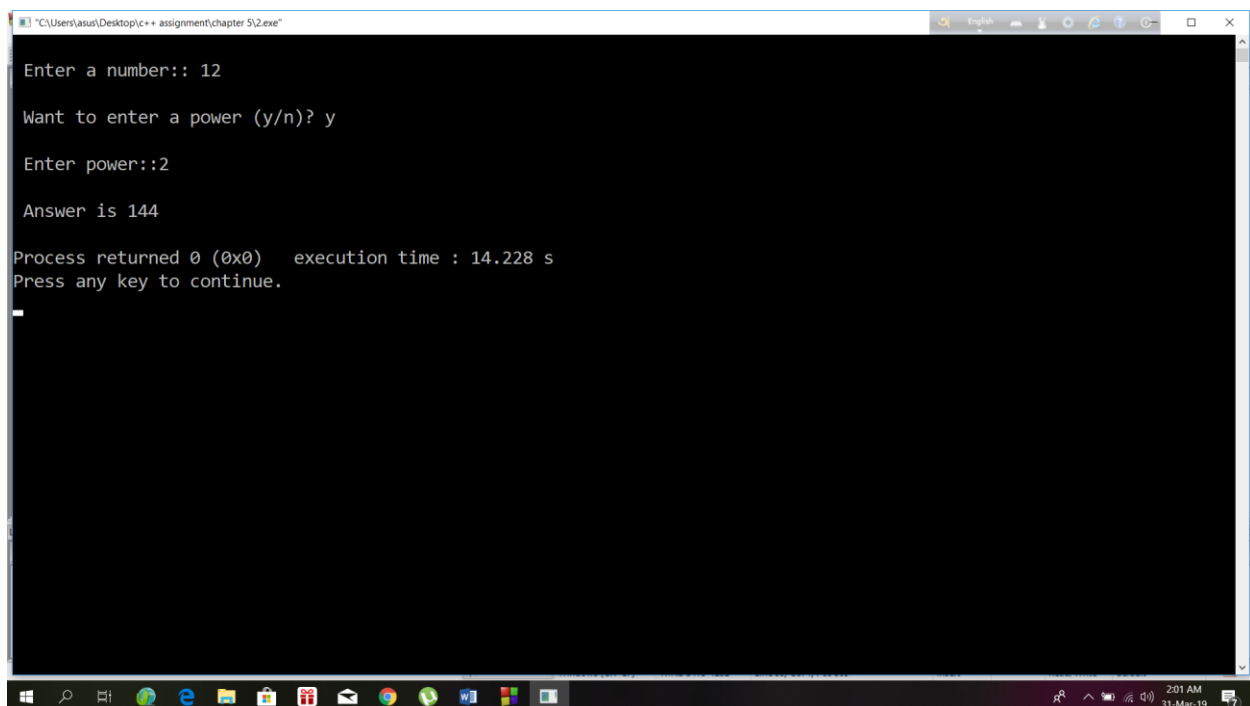
    cout << "\n Enter a number:: ";
    cin >> number;

    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;  
}
```



The screenshot shows a Windows command prompt window titled "C:\Users\asus\Desktop\c++ assignment\chapter 5\2.exe". The program prompts the user to enter a number, a power, and whether to enter a power. The user enters 12 for the number, y for the power, and 2 for the power. The program outputs "Answer is 144". Below the output, it shows "Process returned 0 (0x0) execution time : 14.228 s" and "Press any key to continue." The Windows taskbar is visible at the bottom with various application icons and the system clock showing 2:01 AM on 31-Mar-19.

```
"C:\Users\asus\Desktop\c++ assignment\chapter 5\2.exe"  
Enter a number:: 12  
Want to enter a power (y/n)? y  
Enter power::2  
Answer is 144  
Process returned 0 (0x0) execution time : 14.228 s  
Press any key to continue.  
_
```

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-->0)
    {
        cout<<"Enter the first distance:\n";

        cin>>d1;

        cout<<"Enter the second distance:\n";

        cin>>d2;

        cout<<"Here is the larger one:\n";

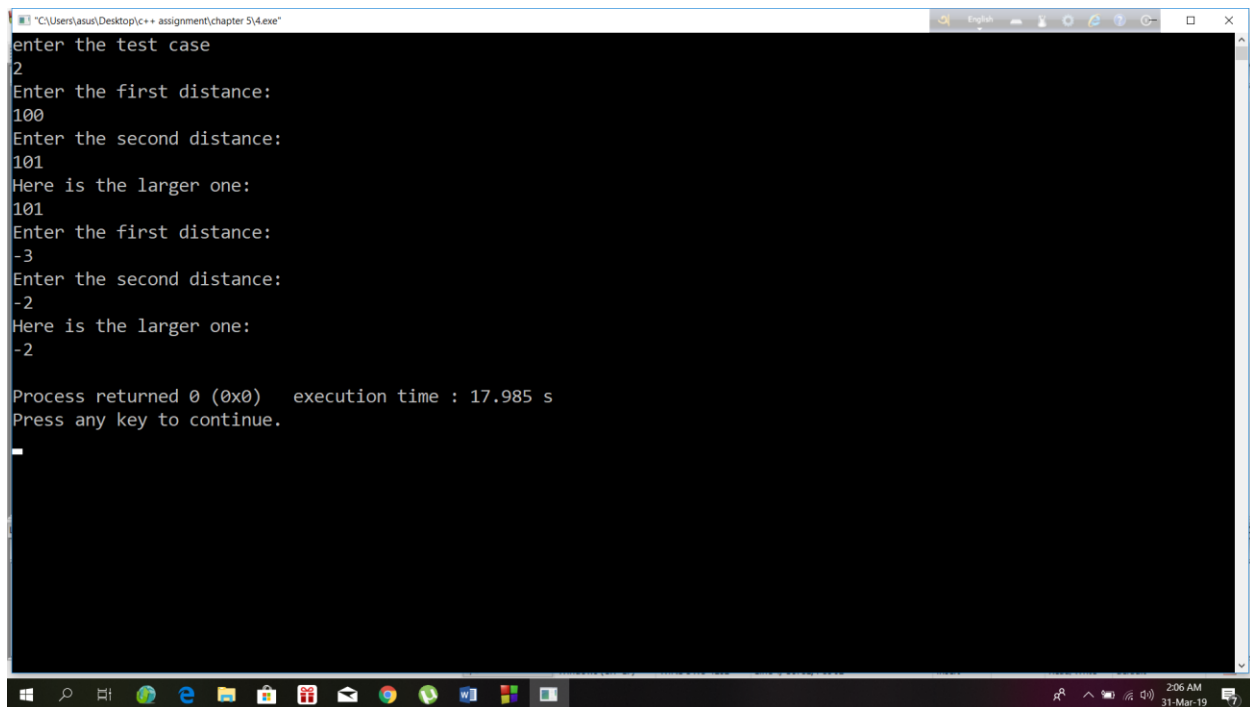
        larger(d1,d2);

        cout<<"\n";

    }

    return 0;
}
```

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



```
"C:\Users\asus\Desktop\c++ assignment\chapter 5\4.exe"
enter the test case
2
Enter the first distance:
100
Enter the second distance:
101
Here is the larger one:
101
Enter the first distance:
-3
Enter the second distance:
-2
Here is the larger one:
-2

Process returned 0 (0x0)   execution time : 17.985 s
Press any key to continue.
```

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.

■

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)
```

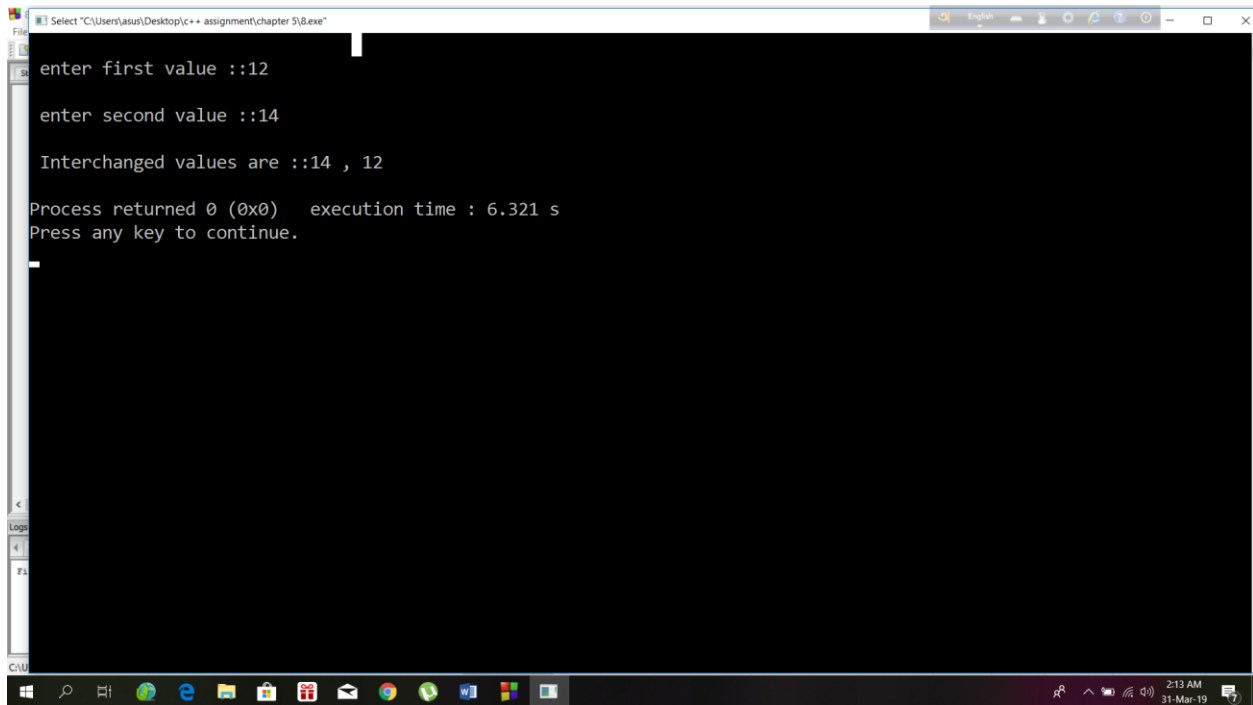
```
{
```

```
    int x;
```

```
    x = *a ;
```

```
    *a = *b;
```

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



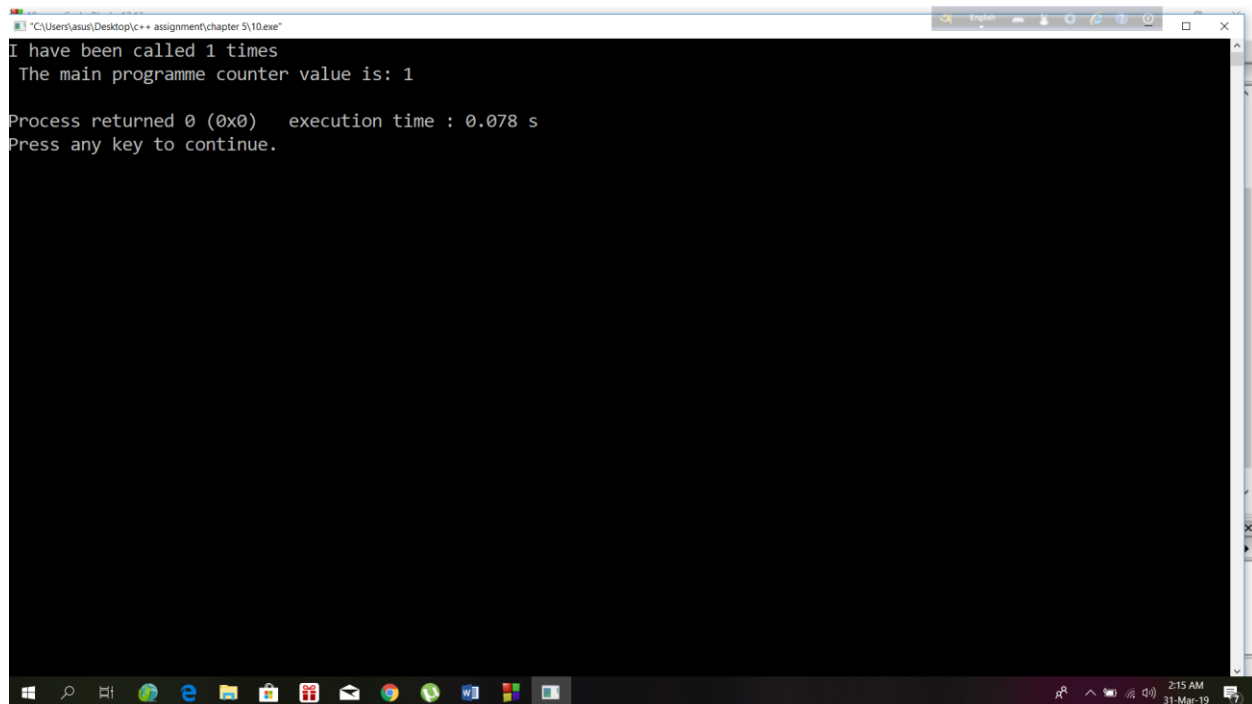
```
Select "C:\\Users\\asun\\Desktop\\c++ assignment\\chapter 5\\8.exe"  
enter first value ::12  
enter second value ::14  
Interchanged values are ::14 , 12  
Process returned 0 (0x0)   execution time : 6.321 s  
Press any key to continue.
```

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";  
}
```



```
"C:\Users\asus\Desktop\c++ assignment\chapter 5\10.exe"  
I have been called 1 times  
The main programme counter value is: 1  
  
Process returned 0 (0x0)   execution time : 0.078 s  
Press any key to continue.
```

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 fddiv(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.
```

>>THE END<<