

## Chapter 3:

### Exercise 2:

```
#include<iostream>

#include<iomanip>

using namespace std;

int main()
{
    float input,c,f,a;
    int choice;
    cout<<"Type "<<setw(8)<<"1 to convert Farenheit to Celsius,\n";
    cout<<setw(8)<<" 2 to convert Celsius to Farenheit ,\n";
    cin>>choice;
    if(choice==1)
    {
        cout<<"Enter temperature in Farenheit:";
        cin>>input;
        c=(((input-32)*5)/9);
        cout<<"In celcius that is "<<c;

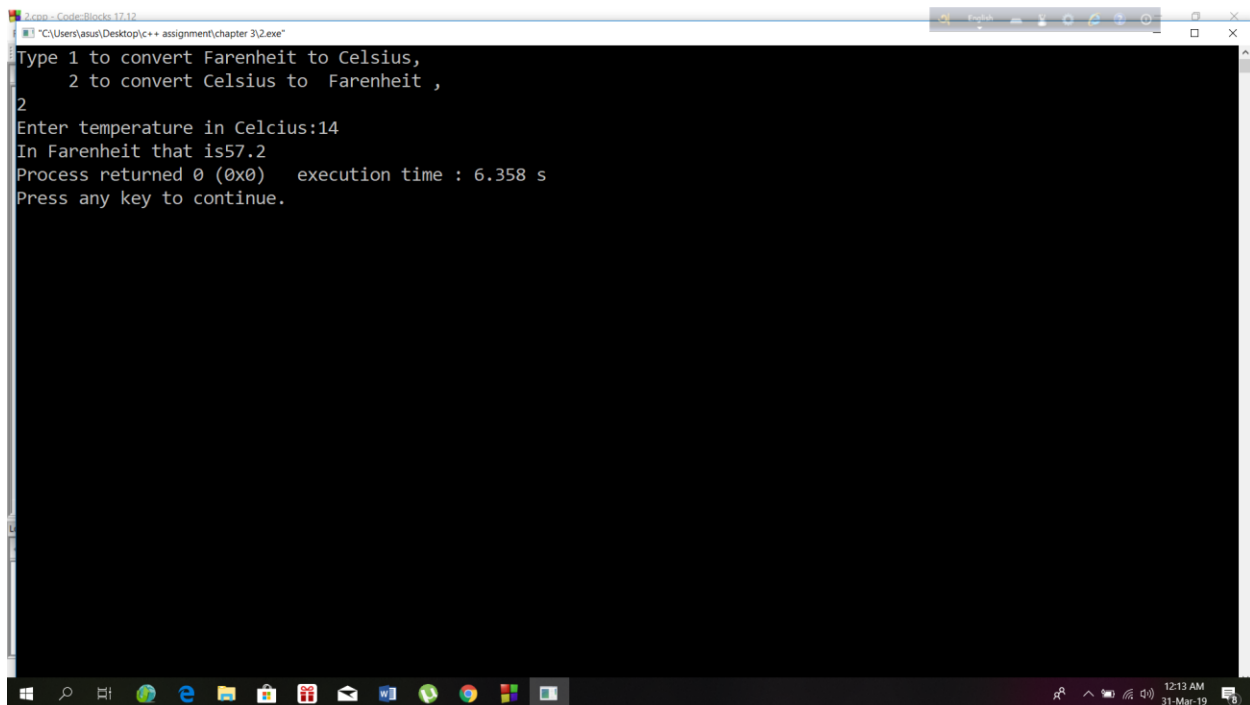
    }
    if(choice==2)
    {
        cout<<"Enter temperature in Celcius:";
        cin>>input;
```

```
f=((input*9)/5)+32;  
cout<<"In Farenheit that is"<<f;
```

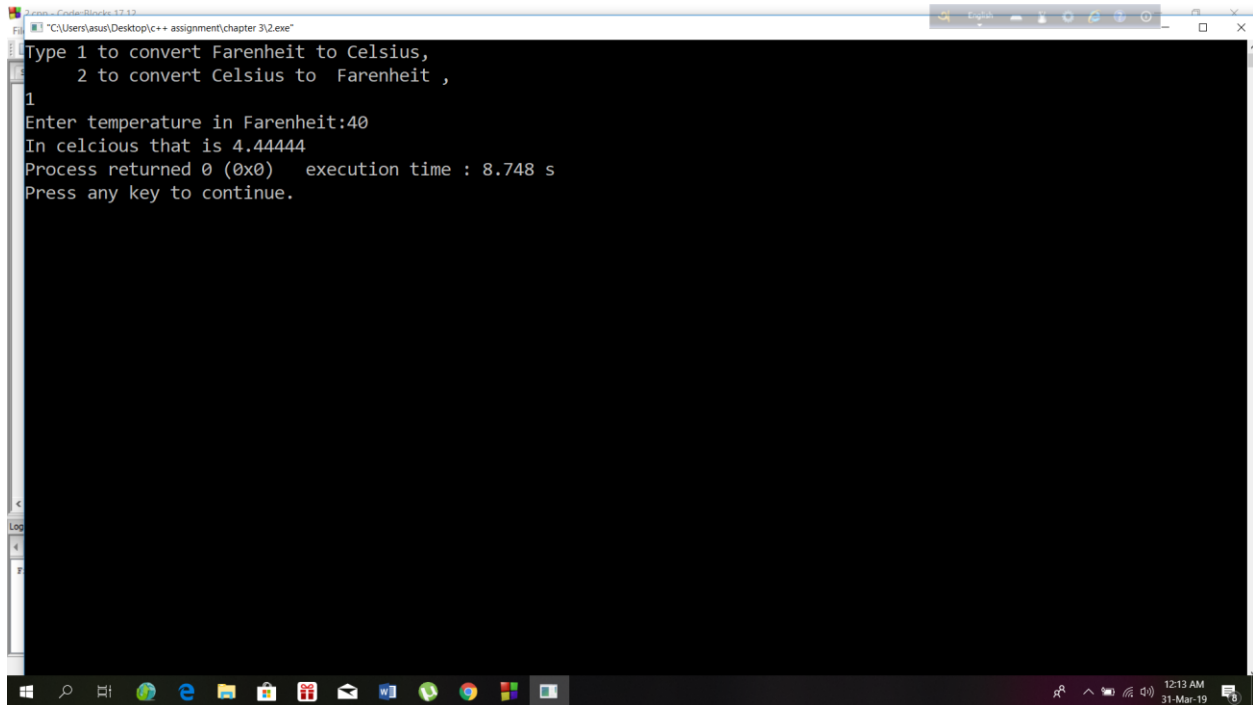
```
}
```

```
return 0;
```

```
}
```



```
2.cpp - Code::Blocks 17.12  
"C:\Users\asus\Desktop\c++ assignment\chapter 3\2.exe"  
Type 1 to convert Farenheit to Celsius,  
2 to convert Celsius to Farenheit ,  
2  
Enter temperature in Celcius:14  
In Farenheit that is57.2  
Process returned 0 (0x0) execution time : 6.358 s  
Press any key to continue.
```



```

C:\Users\asus\Desktop\c++ assignment\chapter 3\2.exe
Type 1 to convert Farenheit to Celsius,
    2 to convert Celsius to Farenheit ,
1
Enter temperature in Farenheit:40
In celcius that is 4.4444
Process returned 0 (0x0)   execution time : 8.748 s
Press any key to continue.

```

Exercise 4:

```
#include<iostream>
```

```
#include<iomanip>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    float a,b,result;
```

```
    char ch,op;
```

```
    do
```

```
    {
```

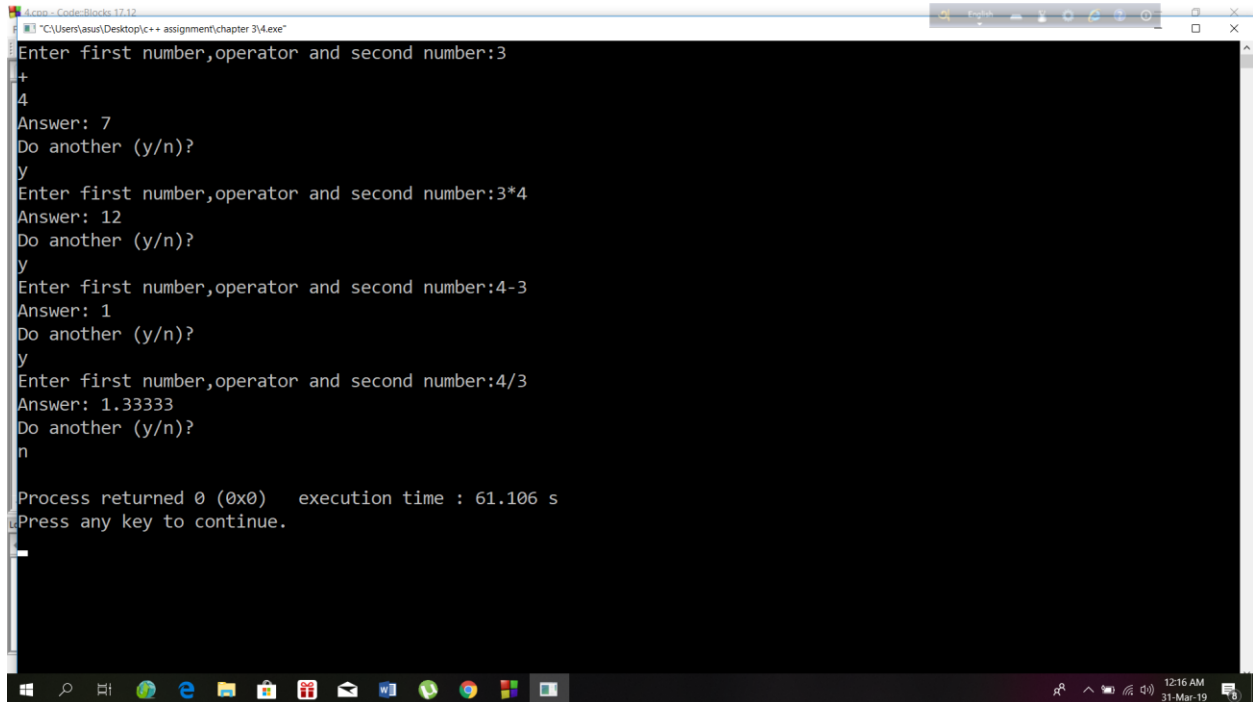
```
        cout<<"Enter first number,operator and second number:";
```

```
        cin>>a>>op>>b;
```

```
        if(op=='+')
```

```
{
    result=a+b;
    cout<<"Answer: "<<result;
}
else if(op=='/')
{
    result=a/b;
    cout<<"Answer: "<<result;
}
else if(op=='-')
{
    result=a-b;
    cout<<"Answer: "<<result;
}
else if(op=='*')
{
    result=a*b;
    cout<<"Answer: "<<result;
}
cout<<"\n";
cout<<"Do another (y/n)?\n";
cin>>ch;
}
while(ch!='n');
```

```
    return 0;
}
```



The screenshot shows a Windows desktop environment. A Code-Blocks IDE window is open, displaying a C++ program that performs arithmetic operations. The program prompts the user to enter a first number, an operator, and a second number. It then calculates and displays the result. The user has entered '3' for the first number, '+' for the operator, and '4' for the second number, resulting in 'Answer: 7'. The program asks if the user wants to perform another operation ('Do another (y/n)?'). The user has entered 'y' three times, performing calculations for '3\*4' (Answer: 12), '4-3' (Answer: 1), and '4/3' (Answer: 1.33333). Finally, the user entered 'n' to stop the program. The IDE window title is '4.cpp - Code-Blocks 17.12'. The Windows taskbar at the bottom shows various application icons and the system clock indicating 12:16 AM on 31-Mar-19.

```
4.cpp - Code-Blocks 17.12
"C:\Users\asus\Desktop\c++ assignment\chapter 3\4.exe"
Enter first number,operator and second number:3
+
4
Answer: 7
Do another (y/n)?
y
Enter first number,operator and second number:3*4
Answer: 12
Do another (y/n)?
y
Enter first number,operator and second number:4-3
Answer: 1
Do another (y/n)?
y
Enter first number,operator and second number:4/3
Answer: 1.33333
Do another (y/n)?
n

Process returned 0 (0x0)   execution time : 61.106 s
Press any key to continue.
```

### Exercise 6:

```
#include<iostream>
#include<iomanip>
using namespace std;
int main()
{
    int i,input,result=1;
    cout<<"Enter a number:";
    while(input!=0)
    {
        result=1;
        cin>>input;
        if(input==0)
            break;
        for(i=input; i>=1; i--)
        {
            result=result*i;
        }
        cout<<"Factorial is:"<<result<<"\n";
        cout<<"Enter another number:";
    }

    return 0;
```

```
}  
  
"C:\Users\asuri\Desktop\c++ assignment\chapter 3\6.exe"  
Enter a number:5  
Factorial is:120  
Enter another number:10  
Factorial is:3628800  
Enter another number:4  
Factorial is:24  
Enter another number:0  
  
Process returned 0 (0x0)   execution time : 14.508 s  
Press any key to continue.  
_
```

Exercise 8:

```
#include<iostream>
```

```
#include<iomanip>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    char ch ='y';
```

```
    int pounds1,sillings1,pence1,pounds2,sillings2,pence2,pounds,sillings=0,pence;
```

```
    do
```

```
    {
```

```
cout<< "\n Enter First amount(Pounds,sillings,pence)::";
cin>>pounds1
  >>sillings1
  >>pence1;
cout<< "\n Enter First amount(Pounds,sillings,pence)::";
cin>>pounds2
  >>sillings2
  >>pence2;

pounds = pounds1 +pounds2;
pence =pence1 + pence2 ;
if(pence>=12)
{
    sillings++;
    pence-=12;

}
sillings+=sillings1+sillings2;
if(sillings>=20)
{
    pounds++;
    sillings-=20;
}

cout<< "\n Tottal amount is "<<pounds<< "."<<sillings<< "."<<pence<<endl;
cout<< "\n Do you wish to continue y/n ::";
```



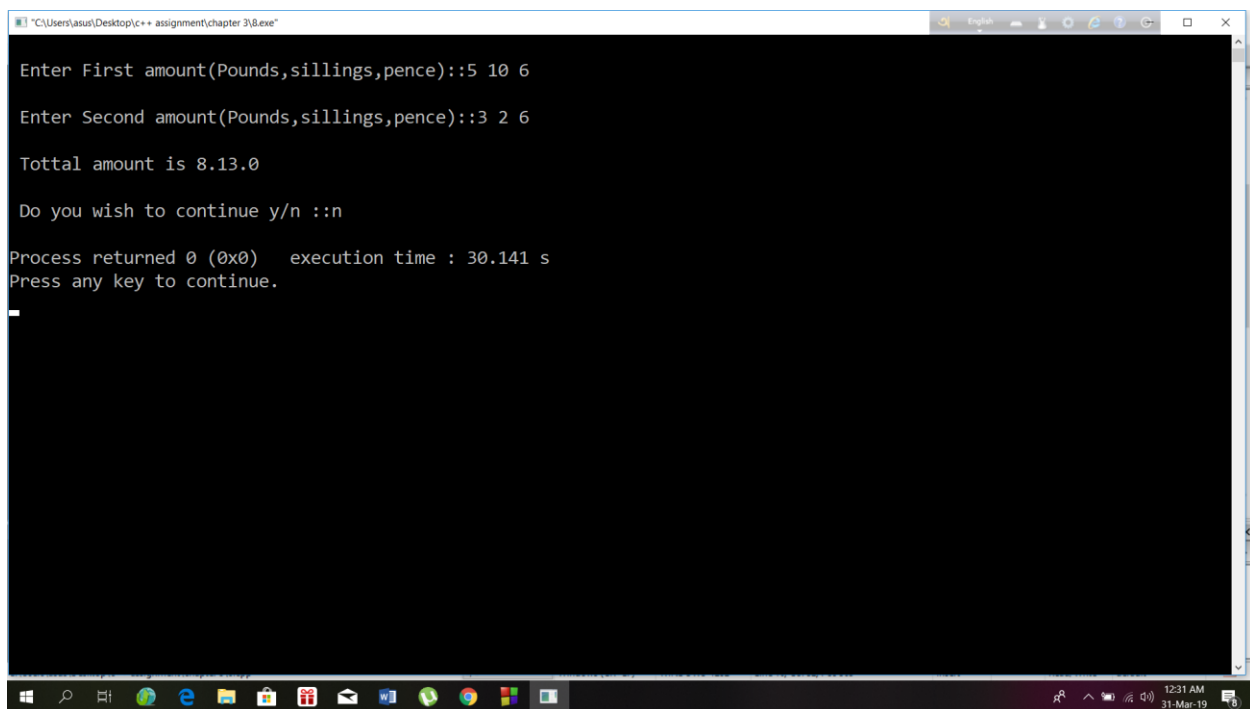
```
    cin>>ch;

}

while(ch!='n');

return 0;

}
```



The screenshot shows a Windows command prompt window titled "C:\Users\asus\Desktop\c++ assignment\chapter 3\8.exe". The program prompts the user to enter the first amount in Pounds, shillings, and pence. The user enters "5 10 6". The program then prompts for the second amount, and the user enters "3 2 6". The program calculates the total amount as 8.13.0 and asks if the user wishes to continue. The user enters "n". The program returns 0 and displays the execution time as 30.141 s. The Windows taskbar at the bottom shows the time as 12:31 AM on 31-Mar-19.

```
Enter First amount(Pounds,shillings,pence)::5 10 6
Enter Second amount(Pounds,shillings,pence)::3 2 6
Total amount is 8.13.0
Do you wish to continue y/n ::n
Process returned 0 (0x0)   execution time : 30.141 s
Press any key to continue.
-
```

Exercise 10:

```
#include<iostream>

#include<iomanip>

#include<conio.h>

using namespace std;

int main()
```

```
{

int i;
float init_amount,rate, finl_amount;

do
{
    cout<<"\n Enter initial amount:: ";
    cin >>init_amount;

    cout<<"\n Enter interest rate (percent per year): ";
    cin >>rate;

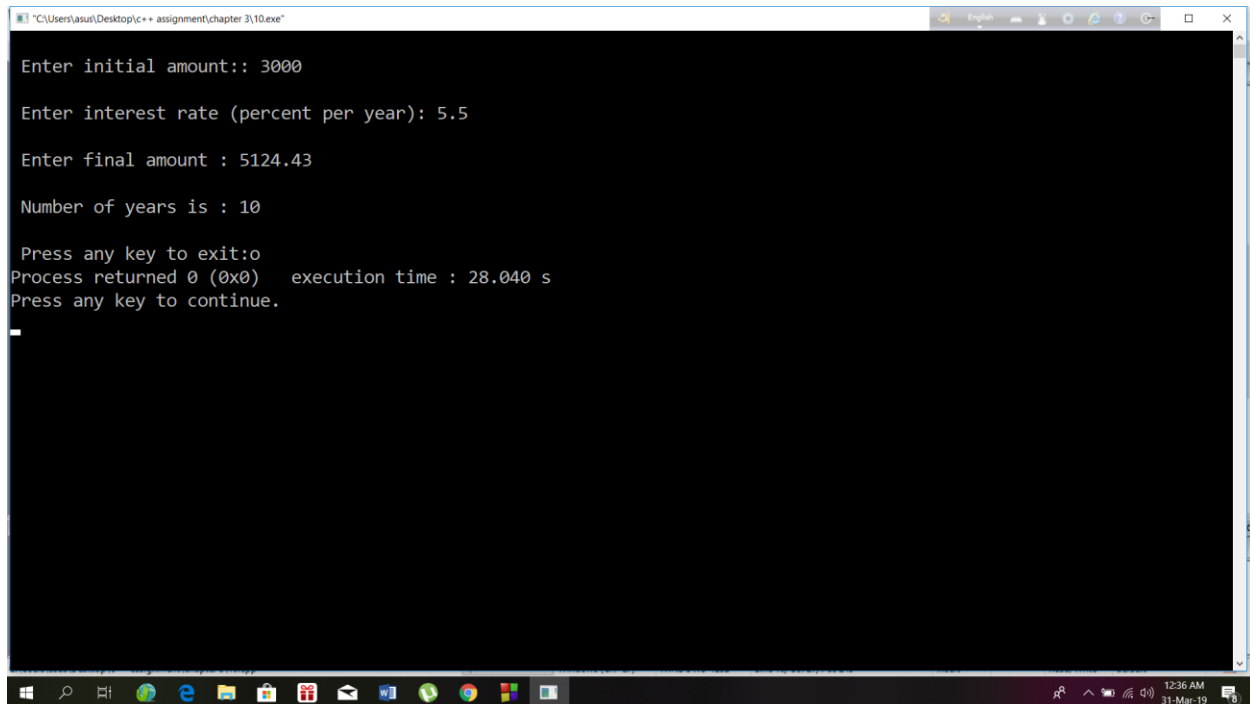
    cout<<"\n Enter final amount : ";
    cin >>finl_amount;
    i=0;
    while(finl_amount>=init_amount)
    {
        finl_amount -= finl_amount*rate/100;
        i++;
    }
    cout<<"\n Number of years is : "<<i<<endl;
    cout<<"\n Press any key to exit:";
```

```

    }
    while(getche()=='c');

    return 0;
}

```



```

"C:\Users\asat\Desktop\c++ assignment\chapter 3\10.exe"

Enter initial amount:: 3000

Enter interest rate (percent per year): 5.5

Enter final amount : 5124.43

Number of years is : 10

Press any key to exit:o
Process returned 0 (0x0)   execution time : 28.040 s
Press any key to continue.

```

Exercise 12:

```

#include<iostream>

#include<iomanip>

using namespace std;

int main()
{
    char ch = 'y';
    char sign,Operator;

```

```
int a,b,c,d;
```

```
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<<" Write your Expression :: ";
```

```
    cin>>a>>sign>>b>>Operator >>c>>sign>>d ;
```

```
    if(Operator=='+')
```

```
    {
```

```
        cout << " Addition = "<<(a*d + b*c)<<sign<<(b*d) <<endl;
```

```
    }
```

```
    if(Operator=='-')
```

```
    {
```

```
        cout << " subtraction = "<<(a*d - b*c)<<sign<<(b*d);
```

```
    }
```

```
    if(Operator=='*')
```

```
    {
```

```

        cout << " multiplication = "<<(a*c) <<sign<<(b*d);
    }
    if(Operator=='/')
    {
        if(b!=0&&c!=0)
        {
            cout << " division = "<<(a*d)<<sign<<(b*c);
        }
        else
        {
            cout<< "\n Math Error!!!"<<endl;
        }
    }
    cout<< "\n Do you wish to continue y/n ::";
    cin>>ch;
}
while(ch!='n');
return 0;}

```

```

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 :: 1/2+1/2
Addition = 4/4

Do you wish to continue y/n ::y
Write your Expression :: 1/2-1/2
subtraction = 0/4
Do you wish to continue y/n ::y
Write your Expression :: 1/2*1/2
multiplication = 1/4
Do you wish to continue y/n ::y
Write your Expression :: 1/2/1/2
division = 2/2
Do you wish to continue y/n ::


```

