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CS360L

5/20/2022

LAB #1

Github code: <https://github.com/MynameisKoi/CS360>

1.

Source code:

```
#include <iostream>

using std::cout;
using std::endl;
using std::string;

const char SEMI_COLON = ';';
const string VERB1 = "went up ";
const string VERB2 = "down came ";
const string VERB3 = "washed ";
const string VERB4 = "out came ";
const string VERB5 = "dried up ";

int main(void){
    string firstLine;
    string secondLine;
    string thirdLine;
    string fourthLine;
```

```

firstLine = "The itsy bitsy spider " + VERB1 +"the water spout";
secondLine = VERB2 + "the rain and " + VERB3 +"the spider out";
thirdLine = VERB4 + "the sun and " + VERB5 +"all the rain";
fourthLine = "and the itsy bitsy spider " + VERB1 +"the spout again";

cout << firstLine << SEMI_COLON << endl;
cout << secondLine << SEMI_COLON << endl;
cout << thirdLine << SEMI_COLON;
cout << endl;
cout << fourthLine << '.' << endl;

return 0;
}

```

Run code & result:

```

> cd "d:\VS CODE\C C++\" ; if ($?) { g++ test.cpp -o test } ; if ($?) { .\test }
The itsy bitsy spider went up the water spout;
down came the rain and washed the spider out;
out came the sun and dried up all the rain;
and the itsy bitsy spider went up the spout again.
PS D:\VS CODE\C C++> 

```

2.

a.

Source code:

```

int main(){
    string first_name, last_name;
    int month, day, year;
    cout << "Input your name (first & last name): ";
    cin >> first_name >> last_name;
}

```

```

cout << "Input date (month, day, and year): ";
cin >> month >> day >> year;
cout << "Name: " << last_name << ", " << first_name << endl;
cout << "Today's date: " << month << "/" << day << "/" << year;

return 0;
}

```

Run program & result:

```

> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ 2a.cpp -o 2a } ; if ($?) { .\2a }
Input your name (first & last name): Khoi Duong
Input date (month, day, and year): 5 20 2022
Name: Duong, Khoi
Today's date: 5/20/2022
PS D:\VS CODE\C C++\CS360\Lab1>

```

- b. Change your program so that there is a space between the two lines of output.

Source code:

```

#include <iostream>

using namespace std;

int main(){
    string first_name, last_name;
    int month, day, year;
    cout << "Input your name (first & last name): ";
    cin >> first_name >> last_name;
    cout << "Input date (month, day, and year): ";
    cin >> month >> day >> year;
    cout << "Name: " << last_name << ", " << first_name << endl;
    cout << endl;
}

```

```

cout << endl;
cout << "Today's date: " << month << "/" << day << "/" << year;

return 0;
}

```

Run program & result:

```

> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ 2a.cpp -o 2a } ; if ($?) { .\2a }
Input your name (first & last name): Khoi Duong
Input date (month, day, and year): 5 20 2022
Name: Duong, Khoi

Today's date: 5/20/2022
PS D:\VS CODE\C C++\CS360\Lab1>

```

- c. Change your program so that your first name is printed followed by your last name, with a blank in between the names.

Source code:

```

#include <iostream>

using namespace std;

int main(){
    string first_name, last_name;
    int month, day, year;
    cout << "Input your name (first & last name): ";
    cin >> first_name >> last_name;
    cout << "Input date (month, day, and year): ";
    cin >> month >> day >> year;
}

```

```

cout << "Name: " << first_name << " " << last_name << endl;
cout << "Today's date: " << month << "/" << day << "/" << year;

return 0;
}

```

Run program & result:

```

> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ 2a.cpp -o 2a } ; if ($?) { .\2a }
Input your name (first & last name): Khoi Duong
Input date (month, day, and year): 5 20 2022
Name: Khoi Duong
Today's date: 5/20/2022
PS D:\VS CODE\C C++\CS360\Lab1> 

```

3.

a.

Source code:

```

#include <iostream>

using std::cout, std::endl, std::string;

const string MY_NAME = "Khoi Duong";

int main (void){
    string name;

    name = "Name: " + MY_NAME;
    cout << name << endl;
}

```

```
    return 0;
}
```

Run program & Result:

```
PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ tempCodeRunnerFile.cpp -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRunnerFile }
Name: Khoi Duong
PS D:\VS CODE\C C++\CS360\Lab1> █
```

b.

Source code:

```
#include <iostream>

using std::cout, std::endl, std::string;

const string MY_NAME = "Khoi Duong";

int main (void){
    string name, last_name, first_name;

    last_name = MY_NAME.substr(5,5);
    first_name = MY_NAME.substr(0,4);
    name = "Name: " + last_name + ", " + first_name;
    cout << name << endl;

    return 0;
}
```

Run program & result:

```
PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ;  
if ($?) { g++ 3.cpp -o 3 } ; if ($?) { .\3 }  
Name: Duong, Khoi  
PS D:\VS CODE\C C++\CS360\Lab1> █
```

c.

Source code:

```
#include <iostream>  
  
using std::cout, std::endl, std::string;  
  
const string MY_NAME = "Khoi Duong";  
  
int main (void){  
    string name, last_name, first_name;  
  
    last_name = MY_NAME.substr(5,5);  
    first_name = MY_NAME.substr(0,1);  
    name = "Name: " + last_name + ", " + first_name;  
    cout << name << endl;  
  
    return 0;  
}
```

Run program & result:

```
PS D:\VS CODE\C C++\CS360\Lab1> cd
                                     > cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ 3.cpp -o 3 } ; if ($?) { .\3 }
Name: Duong, K
PS D:\VS CODE\C C++\CS360\Lab1> █
```

4.

a.

Source code:

```
#include <iostream>
#include <iomanip>

using std::cout, std::showpoint, std::fixed, std::right, std::setw;

const int a = 1066;
const int b = 1492;
const int c = 512;
const int d = 1;
const int e = -23;

int main (void){

    cout.precision(5);
    cout << fixed << showpoint;
    cout << right << setw(10) << a << '\n';
    cout << right << setw(10) << b << '\n';
    cout << right << setw(10) << c << '\n';
    cout << right << setw(10) << d << '\n';
    cout << right << setw(10) << e << '\n';

    return 0;
```



```
}
```

Run program & result:

```
PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ;  
if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }  
    1066  
    1492  
    512  
     1  
   -23  
PS D:\VS CODE\C C++\CS360\Lab1> 
```

The numbers are right justified.

b.

Source code:

```
#include <iostream>  
#include <iomanip>  
  
using std::cout, std::setprecision, std::fixed, std::endl;  
  
const float a = 1066;  
const float b = 1492;  
const float c = 512;  
const float d = 1;  
const float e = -23;  
  
int main (void){  
    float answer = (a+b) / (c+d+e);  
    cout << "The answer is " << "";  
    cout << fixed << setprecision(4) << answer << endl;
```

```
    return 0;
}
```

Run program & result:

```
PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }
The answer is 5.2204
PS D:\VS CODE\C C++\CS360\Lab1> █
```

The answer is 5.2204

c.

Source code:

```
#include <iostream>
#include <iomanip>

using std::cout, std::setprecision, std::fixed, std::showpoint, std::setw, std::right;

const float a = 23.62;
const float b = 46.0;
const float c = 43.4443;
const float d = 100.1;
const float e = 98.98;

int main (void){
    cout.precision(2);
    cout << fixed << showpoint;
    cout << right << setw(10) << a << '\n';
```

```

cout << right << setw(10) << b << '\n';
cout << right << setw(10) << c << '\n';
cout << right << setw(10) << d << '\n';
cout << right << setw(10) << e << '\n';

return 0;
}

```

Run program & result:

```

PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ tempCodeRunnerFile.cpp -o tempCodeRunnerFile } ; if ($
?) { .\tempCodeRunnerFile }
    23.62
    46.00
    43.44
   100.10
    98.98
PS D:\VS CODE\C C++\CS360\Lab1>

```

The numbers are right-justified and formatted in float-point notation with two decimal places.

d.

Source code:

```

#include <iostream>
#include <iomanip>

using std::cout, std::setprecision, std::fixed;

const float a = 23.62;
const float b = 46.0;
const float c = 43.4443;

```

```

const float d = 100.1;
const float e = 98.98;

int main (void){
    float answer = a+b+c+d+e;
    cout << "The sum of the numbers is: " << "";
    cout << fixed << setprecision(4) << answer << '\n';

    return 0;
}

```

Run program & result:

```

PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ;
if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }
The sum of the numbers is: 312.1443
PS D:\VS CODE\C C++\CS360\Lab1>

```

5.

a.

Source code (no manipulators):

```

#include <iostream>
#include <iomanip>

using std::cout;

void spacing (int n){
    for (int i = 0; i < n; i++) {
        cout << " ";
    }
}

```

```

}

int main (void){
    spacing(4);
    cout << "Good morning";
    spacing(11);
    cout << "Sarah";
    spacing(13);
    cout << "Sunshine!";

    return 0;
}

```

Run program & result:

```

PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ; if ($?) { g++ tempCodeRu
nnerFile.cpp -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRunnerFile }
    Good morning        Sarah        Sunshine!
PS D:\VS CODE\C C++\CS360\Lab1>

```

b.

Source code (with manipulators):

```

#include <iostream>
#include <iomanip>

using std::cout, std::setw, std::endl, std::right;

int main (void){
    cout << right << setw(16) << "Good Morning";
    cout << right << setw(4) << " ";
    cout << right << setw(12) << "Sarah";
}

```

```

cout << right << setw(8) << " ";
cout << right << setw(14) << "Sunshine!";

return 0;
}

```

Run program & result:

```

> cd "d:\VS CODE\C C++\CS360\Lab1\" ; if ($?) { g++ test.cpp -
o test } ; if ($?) { .\test }
    Good Morning          Sarah          Sunshine!
PS D:\VS CODE\C C++\CS360\Lab1> 

```

c.

Source code:

```

#include <iostream>
#include <iomanip>

using std::cout, std::setw, std::endl, std::right;

int main (void){
    cout << right << setw(16) << "Good Morning";
    cout << endl;
    cout << right << setw(12) << "Sarah";
    cout << endl;
    cout << right << setw(14) << "Sunshine!";

    return 0;
}

```

Run program & result:

```
PS D:\VS CODE\C C++\CS360\Lab1> cd "d:\VS CODE\C C++\CS360\Lab1\" ; if ($?) { g++ test.cpp  
o test } ; if ($?) { .\test }  
    Good Morning  
    Sarah  
    Sunshine!  
PS D:\VS CODE\C C++\CS360\Lab1> 
```