Jacob Johnson

Week 3 Lab (Do not do Lab 3.5)

Fill in the blank:

1. -20

2. 2 \* x + pow(3,4)

3. coercion

4. casting

5. #include <iostream>

6. whitespace

7. insertion

8. iomanip

9. creates a new line of output

**Lab 3.1 (skip exercise 4 in this section)**

Please input the number of items bought:

5

Please input the price:

4.99

The total bill is $25.

When we change to cout << setprecision(2) << showpoint; we do not get a total price that allows decimals but rather one that rounds to an int. The fixed attribute instructs the program to output numbers with decimals.

Please input the number of items bought:

10

Please input the price:

4.99

The total bill is $49.9000

When we change the precision to 4 we get four digits to the right of the decimal point instead of two.

// It will then print out the total price.

// The input will come from the keyboard and the output will go to

// the screen.

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#include <iostream>

#include <iomanip>

using namespace std;

int main()

{

int quantity; // contains the amount of items purchased

float itemPrice; // contains the price of each item

float totalBill; // contains the total bill.

cout << setprecision(2) << fixed << showpoint; // formatted output

cout << "Please input the number of items bought:" << endl;

cin >> quantity;

cout << "Please input the price:" << endl;

cin >> itemPrice;

totalBill = quantity \* itemPrice; // calculate the total bill

cout << "The total bill is $" << totalBill << endl; // display the total bill

return 0;

}

**Lab 3.2**

// This program will bring in two prices and two quantities of items

// from the keyboard and print those numbers in a formatted chart.

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#include <iostream>

#include <iomanip>

using namespace std;

int main()

{

float price1, price2; // The price of 2 items

int quantity1, quantity2; // The quantity of 2 items

cout << setprecision(2) << fixed << showpoint;

cout << "Please input the price and quantity of the first item" << endl; // ask for price1 and quantity1 from user

cin >> price1 >> quantity1; // get price1 and quantity1 from user

cout << "Please input the price and quantity of the second item" << endl; // ask for price2 and quantity2 from user

cin >> price2 >> quantity2; // get price2 and quantity2 from user

cout << setw(15) << "PRICE" << setw(12) << "QUANTITY\n\n";

cout << setw(15) << price1 << setw(12) << quantity1 << endl; // output price and quantity 1

cout << setw(15) << price2 << setw(12) << quantity2 << endl; // output price and quantity 2

return 0;

}

**Lab 3.3**

// This program will input the value of two sides of a right triangle and then

// determine the size of the hypotenuse.

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#include <iostream>

#include <cmath> // needed for math functions like sqrt()

#include <iomanip>

using namespace std;

int main()

{

float a, b; // the smaller two sides of the triangle

float hyp; // the hypotenuse calculated by the program

cout << "Please input the value of the two sides" << endl;

cin >> a >> b;

// assignment statement that determines the hypotenuse

hyp = sqrt( pow(a,2) + pow(b,2) );

cout << "The sides of the right triangle are " << a << " and " << b << endl;

cout << setprecision(2) << fixed << showpoint; // formatted output

cout << "The hypotenuse is " << hyp << endl; // output hypotenue measurement

return 0;

}

**Lab 3.4**

**// This program will determine the batting average of a player.**

**// The number of hits and at bats are set internally in the program.**

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**#include <iostream>**

**using namespace std;**

**const int AT\_BAT = 421;**

**const int HITS = 123;**

**int main()**

**{**

**float batAvg;**

**batAvg = static\_cast<float>(HITS) / static\_cast<float>(AT\_BAT); // an assignment statement**

**cout << "The batting average is " << batAvg << endl; // output the result**

**return 0;**

**}**

END LAB (do not do 3.5)