**Lab 04**

**Calculations, Random, and Formatting**

**Java Joe’s**

Java Joe’s sells Colombian Supreme, Organic Gold Decaf, and Heavenly Chai. A customer placing an order needs to specify the amount of each product to order (even if the amount is zero). The amount of each product is specified in whole ounces.

A customer is prompted for the amount of each item. Given the price per ounce of each item, an invoice is then printed. The item prices are shown in the table below.

As an added bonus, when an order is placed at Java Joe’s, there is a bonus discount, a random amount between $1 and $5, in whole dollar increments.

A run of the program should look exactly like this, except it is different for different product amounts. Also, on each program run, the randomly generated bonus may be different.

Welcome to Java Joe's!

Enter your name: Fred Flintstone

How many ounces of Colombian, Decaf, and Chai? 12 0 15

Invoice for Fred Flintstone

Colom Supr Organ Gold Heavn Chai

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Quantity (oz) 12 0 15

Unit Price 0.35 0.85 1.10

Amount 4.20 0.00 16.50

Total 20.70

Bonus Discount -4.00

Grand Total 16.70

Thank you for ordering!

Considering the leftmost column of the screen as column 1, the pennies digit of Colombian Supreme is in column 28, of Organic Gold, 40, and of Heavenly Chai, 52.

Remember the formula for choosing a random number between two values from the slides on 6 September, here modified for when you need a floating point value:

double value

= static\_cast<double>(rand() % (MAX\_VALUE - MIN\_VALUE + 1) + MIN\_VALUE);

Your selection of the correct data types for the input values and for the calculations is very important. You should have no magic numbers in your program. Use only the concepts and techniques presented in chapters 1 – 3 for this program.

As always, make sure you have a file header comment that gives your name and the program’s purpose. Read over the and make sure your program conforms to it.