**Programming Basics Project Program 1 Report, Pseudocode, and Algorithm**

**Problem Statement:**

To make a profit, a local store marks up the prices of its items by a certain percentage. Write a C++ program that reads the original price of the item sold, the percentage of the marked-up price, and the sales tax rate. The program then outputs the original price of the item, the percentage of the mark-up, the store’s selling price of the item, the amount of the sales tax, and the final price of the item. (The final price of the item is the selling price plus the sales tax.). Your program must prompt for the input and label the output. Compile and run your program with the following test data:

• Original price of item: $99.00

• Mark-up percentage: 60%

• Sales tax rate: 5.25%

• The final price of the item with tax should be $166.72

**Analysis:**

User Inputs:

* The original price of the item
* Percentage Markup
* Sales Tax

Supplied Constants:

* Final Sales Price = Original Price with Percentage Markup and Sales Tax multiplied in

Processing:

* Percentage Markup
* Sales Tax
* Final Sales Price = (Original Price + (Original Price \* Percentage Markup)) + (Original Price + (Original Price \* Percentage Markup)) \* Sales Tax

Output:

Original price, markup, sales tax, and all of those combined in the final sales price

Verification:

* Used a calculator to verify math with the test data

Algorithm:

1. Ask for original price
2. Original price is added to the markup via formula
3. Sales tax is added via formula
4. Display “Original price”, “Markup price”, “Sales tax amount”, and “Final sales price”
5. What did you find most challenging with this program?

Making sure the math was correct putting the different inputs in the proper order within parentheses for proper multiplication.

1. What problems did you encounter and how did you solve them?

setprecision was giving me a decimal with an exponent. Solved by reviewing what is required realizing “fixed” is needed for a proper display of decimals with “setprecison”.

1. What did you learn from writing this program?

How to properly ask the user for input and not rely on hard coded variables.

**Programming Basics Project Program 2 Report, Pseudocode, and Algorithm**

**Problem Statement:**

Three employees in a company are up for a special pay increase. Create a file in your project called SalaryData.txt and type in the following data:

Miller Andrew 65789.87 5

Green Sheila 75892.56 6

Sethi Amit 74900.50 6.1

Each input line consists of an employee’s last name, first name, current salary, and percent pay increase. For example, in the first input line, the last name of the employee is Miller, the first name is Andrew, the current salary is 65789.87, and the pay increase is 5%. Write a program that reads data from the specified file and stores the output in the file SalaryOut.txt. For each employee, the data must be output in the following form: firstName lasName updatedSalary. Format the output of decimal numbers to two decimal places.

**Analysis:**

User Inputs:

* Data into a separate text file

Supplied Constants:

* Last name
* First name
* Current salary
* Pay increase percent = 5%(0.05

Processing:

* Open file
* Lines read from file until end of file
* New file is created
* Data placed in new file sorted by last name
* Source file is closed

Output:

Verification:



Algorithm:

1. What did you find most challenging with this program?

2. What problems did you encounter and how did you solve them?

3. What did you learn from writing this program?