Programming Exercise 1.2

Sequential Processing Algorithm

Purpose. Learn how to write an algorithm with simple sequential logic, by writing your own algorithm "from scratch".

Write an algorithm for determining a customer's total at a cashier's station at a grocery store.

Requirements.

1. Use a word-processor program, like Word or Pages, to create a file named **SequentialProcessing.docx**.

2. So that we don't have to worry about branching and looping logic, let's assume that the station requires *EXACTLY* 8 items -- not 8 items or less, but exactly 8.

3. Write your algorithm for *any* eight items -- that is, do not assume what the items are. Use generic terms, like "item 1" and "item 2" -- do *not* say things like "bananas" and "bread". Think of it this way -- your algorithm should work for *any* eight items. It should be "reusable".

4. Get the prices for the 8 items one-at-a-time, and track the sum as you go. Add only two numbers at a time -- do *not* have a step that adds more than 2 numbers together at a time.

5. After all 8 items are totaled, add sales tax, if there is any in your state. Round the total to the nearest penny.

6. In the last step of the algorithm, write the total with a label like "Your total is" or "Pay the man" or whatever you want to say -- be creative

Note that the cashier will not have a cash register for this -- just a piece of paper, a pencil, a calculator, and your algorithm. Expect the cashier to follow your algorithm like a robot!

If you are unsure how to do the math for the sales tax, you'd better figure it out. Research it online. Work it out *before* you write your algorithm.

Be exact and brief in your instructions. Go through your instructions to make sure they work.

Example. For example, write…

```
Write on a piece of paper...
...
...
...
Read the price for the 4th item, and write it...
...
```