Writing Assignment: Everyday Algorithms

A computer is *a device that accepts input, and processes it in some way to produce a result automatically*.

Algorithms are an important part of the process step from the above definition.

`Algorithms:` sets of instructions for completing a task step-by-step

`Pseudocode:` short expressions in human language organized in a way that resembles what source code looks like

`Conditional:` a logical expression that determines if certain lines of code will run

`Loop:` repetition of code until a condition is met

Example 1: Leaving the house on a rainy day

```
1   look out the window
2   if it is raining outside
3      put on your rain boots
4      put on your raincoat
5   go outside
```

Example 2: Guessing Game

```
1    secretly pick your favorite number from 1 to 50
2    have your friend guess your favorite number
3    if your friend guesses a lower number
4       tell your friend to guess a higher number
5       go back to line 2
6    else if your friend guesses a higher number
7       tell your friend to guess a lower number
8       go back to line 2
9    else
10      tell your friend to stop guessing
```

Assignment: see next page...

Choose **one** of the following scenarios and write up an algorithm to solve it. You may assume that the kitchen is stocked with the necessary supplies.

Remember to be very specific - could someone with no prior knowledge complete the steps successfully?

1a. Prepare a bowl of cold cereal. You may choose to include fruit or other ingredients beyond cereal and milk, but make sure to state them explicitly. Assume that a carton of milk is in the refrigerator.

1b. Prepare a sandwich. Make sure to state what kind of sandwich you are making and what ingredients and utensils are required. Again, assume all required ingredients are in the kitchen, refrigerated if needed.

1c. Prepare a cup of tea using a tea bag. You may describe adding water, cream, sugar, lemon, honey, etc., but mention these ingredients in your write-up.

1d. Given a pile of pens, find and discard the ones that do not write any more.

1e. Peel an orange.

1f. Brush your teeth.

1g. Washing a set of dishes by hand.