Program Development and Algorithm Assignment

Many students think that programming is just sitting down and writing code to make your computer do something. There is much more involved that just writing code.

The following video is on one interpretation of what coding is: What is Programming video

In reality, programming involved much more than just writing code. Programs should be written with thorough consideration of the Software Development Life Cycle (SDLC). Section 2.17 in your book introduces it. The following video provides an introduction to what SDLC is: Software Development Life Cycle Explained

Here is a short video to talk about the difference between programming and coding: Programming vs Coding

Watch the 3 videos above. Then answer the following questions (in your own words):

1. What are the 7 stages of SDLC and why is each phase important?
2. Which stage do you think is the most important? Why?
3. Which stage do you think is the least important? Why?
4. You decide that you are going to bake a cake. Go through each of the 7 stages and use those to figure out what kind of cake you are going to make and how to accomplish it. Be very specific for each stage as to what would need to be done.

Computers are not smart – they do what they are told to do. So, you have to be very precise in telling them what to do. This often includes going through the first four stages of SDLC before ever programming. However, sometimes getting to the coding stage can be done by creating algorithms to write the code from. Please look at the following items:

- What is an algorithm article
- What is an algorithm video
- For fun - Big Bang Theory Friendship Algorithm

Now, based on the information from these, create an algorithm to make your favorite sandwich. Your algorithm must be detailed enough that anyone that can read, can follow your algorithm exactly as it is written to produce your favorite sandwich.

This is not considered a good algorithm:

1. Get a piece of bread
2. Spread peanut butter on it
3. Get another piece of bread
4. Spread jelly on it
5. Put the two pieces of bread together
6. Eat it!

Your algorithm should start with what type of sandwich it is, what ingredients are needed; what other equipment is needed (knife, pan, etc), precise steps on how to make the sandwich (similar to a recipe), and everyone following the steps should get the same result. I have seen the directions for making a peanut butter and jelly sandwich up to 8 pages typed – that person got an A.

Your answers should be typed in a file in a format that is readable to your instructor - Word document, .rtf file, .pdf file (not PAGES).

The following will be the components you will be graded on:

Criteria	Points
Questions 1 through 3 – 8 points each	24
Question 4 (5 points for each stage)	35
Algorithm	41
Total Points	100