# 0360-322 Winter 2009
# Assignment 1
**Due: Feb 11, 2009**

1.  Download three Java classes from course website. Study the code. It is not guaranteed that the code compiles, but it shows to you what it does. Briefly explain the purpose of this Java program.

2.  Based on your programming experience, explain how you would change (modifying existing classes, adding new classes, etc.) the downloaded program if we want the program to
    a.  return multiple matching guitars?
    b.  do less string comparison in search method?
    c.  handle other kinds of instruments?
    d.  Any other ideas to improve this program?

3.  When identifying use cases, we find a recurring pattern. For any type of object—like inventory items (guitar), a record in a database table, and so on—we will usually have to create an item, retrieve an item, update an item, and delete an item. These are called the CRUD operations. There are three options for writing use cases in this situation:
    a.  Write a separate use case for each operation.
    b.  Write one use case for all of the operations (a CRUD use case).
    c.  Omit the use cases from the specification.
    Which of the choices do you think is most appropriate in general? Why?

4.  Jeff Bezos started Amazon.com in 1993 and you know what a great idea like Amazon.com can turn into. Suppose you start to sell something simple such as Canadian stamps online. Create a use case model (that is, identify the high-level use cases and describe each of them in enough detail for your investors to understand) for the major use cases that describe the customer experience for your new online store. You should prioritize the use cases so that the investors can see which are most important and what you plan on implementing first.

5.  Suppose you amassed many thousands of digital pictures. You'd like a program to help organize, catalog, and manage your files. You plan on offering gallery-quality images for sale on a web site (that will come later). You need as much flexibility as possible in cataloging the photos as well as locating just the perfect photograph, based upon some sort of specification. There are many things that might be important for your specific needs.
    a.  You may have used some programs that let you manage digital photographs and liked many of their features or found some of them lacking. Do some research on two or three programs and construct a table that shows the features available for each of the programs.
    b.  Write down the features you think are important in the program you want to have developed to manage your photographs. Describe each feature briefly (one or two

sentences) to make sure the programmer has enough to know what they don't know.

    c. Take the features from your list in (b) and rank them from the most important to the least important. That is, the most important one is something that the program must have, or you won't pay for it. As you go down the list, you should get to things that you could be talked out of if it really would cost too much, as well as things that would be nice to have (like perhaps the ability to add voice files to describe the photo) that you really could do without, but that would delight you if they were there.

    d. If you are the programmer who is going to develop the photo manager, how would you develop this program? Why?

6. Identify a few possible use cases using the photo manager described in question 4, and write them in causal format. Pick one and write it in fully-dressed format.

7. Does it make sense to count the number of paths through a use case (that is, the number of scenarios)? Why or why not?