Design Homework Problem for the GIS Project:

You will produce an interim object-oriented design for your upcoming GIS major project, which you will submit as HW3.

Analyze the GIS project specification for details about the project. While doing this, be sure that you give careful consideration to the following questions:

- What classes are needed for the system, including operational control if this is script-driven?
- What relationships exist among those classes? In particular, where are there knows-a relationships, and where are
- there has-a relationships?
- What responsibilities should each class have? Pay attention to how the actions within the system are described.

You should identify a reasonable set of classes, and document each of those classes with a class form. Apply the object-oriented design principles discussed in class. There is no specified minimum number of classes; however, it is better to have too many than to have too few. Your design should largely isolate file accesses (input/output) from computation. You should, of course, attempt to identify classes that correspond to useful clear abstractions, provide public interfaces that are both useful and coherent, and achieve a reasonable balance of responsibilities among the classes.

The class forms should follow the template given below:

Class name:	The name should be descriptive.
Purpose:	Give a one or two sentence description of the role the class plays in the system.
Data members:	For each data member, list a descriptive name, indicate the expected data type, and give a clear one-sentence description of its purpose. If the data member is an object of a class, indicate whether the relationship is one of aggregation or association.
Methods:	For each method, give a descriptive name, and a clear, one sentence description of what the method does.

You must also produce a diagram illustrating what communications take place between the classes/objects that will make up the system. For each such communication, you must indicate the classes involved, the direction of the communication, and give a brief but informative description of the nature of the communication.

Your design will be evaluated, and a discussion of reasonable design alternatives will be held in class or posted on the course website. Submit your design as a typed MS Word document or a plain text file; handwritten responses are not acceptable. Warning: do not wait for feedback on your HW solution before moving forward with your GIS Major project.