

Problem Solving and Programming in Business

Homework 4

E-mail me your project and print out the non-generated code to hand in. I need both.

Using the skeleton application you've been developing and enhancing all semester, develop your own implementation of the CyberPet classes that we have been recently using as an in-class example. Don't use cats and dogs; pick at least two other types of pets. (Be creative.) Create an object hierarchy of at least three levels, starting with a generic Pet at the top and becoming more and more specialized in each subclass.

Write a small VB.Net application to demonstrate the CyberPet attributes and methods at each level of the class hierarchy. That means creating various instances of each class and subclass, assigning their properties concrete values, and calling their methods. For each class and subclass, produce output that demonstrates inheritance and polymorphism. (You'll need to "override" for polymorphism.)

When developing your classes, pay careful attention to what attributes you make public, what you make private, and what you make protected. Use properties (readonly and readonly) where appropriate. Comment on how you are taking advantage of encapsulation in your code. (In the comments, of course.)

Thoroughly test your application. Watch out for "off by one" errors and always test the limits. **It's much more important to me that the features you do implement are well tested and totally bulletproof than whether or not you implement all of the features. In other words, quality is worth more than quantity.**

Be sure to use your best programming practices. These include but are certainly not limited to:

- Descriptive control object and variable identifier names
- Informative and meaningful comments in the source code
- Careful setting of the tab order
- Keeping to the "zero, one, infinity" principle
- Keeping to the "law of least astonishment"
- Aesthetic visual design
- Keeping the code "behind" the buttons to a minimum
- ... and everything else we've talked about (unless you want to hear me go on an on about them again and again!) [*And you know I will.*]