COMP 1409 Lab 7-a

Create a class called **Cat** that has these features:
• instance variables for name, year of birth, and weight in kilos.

• a default constructor and a second constructor that expects all three values to be passed as parameters. Call the "set" methods from the constructor.

• "get" and "set" methods for all instance variables. The "set" methods must validate their parameters. Name must be a String with at least one letter, i.e. not null and not an empty string. Year of birth and weight must not be negative. Display an appropriate error message for an invalid parameter and do not use it to set the field.

Create a class called **Cattery** that has these features:
• two instance variables: an Array of Cat types and a String to hold the name of the business, e.g. "Killer Cats Inc.".

• a constructor that initializes the instance variables. The name of the business should be passed as a parameter to the constructor.

• a method that adds a new Cat to the Array. Here is the method signature: **`public void addCat(Cat newCat)`**. When adding a Cat be sure not to over-write Cats already in the Array. You need to check the elements and add the Cat only where you find a null.

• a method that takes an int parameter and displays on the screen the details of the Cat stored at that index position. This method must ensure that the parameter is a valid index position and that the element is not null, and display an error message if the test fails.

• a method that takes an int parameter and removes from the collection the Cat stored at that index position. This method must ensure that the parameter is a valid index position and display an error message if it is not. How do you remove a Cat element from an Array?

• a method that uses a while loop to display the names of all the cats in the cattery, e.g.
```
The current guests in Killer Cats Inc:
Garfield
Furball
Fang
Grover
Silkie
```

Create a **TestCattery** using main(...) class will create Cats, add their references to the Cattery and test the other Cattery methods described above.

Demonstrate your completed project to your instructor or TA before leaving the lab and be sure we have checked it off. A suggested solution will be given during the next class and labs that have not been checked off will not receive any points.