Assignment #2 Ant Farm Algorithim

The caretaker program first creates a colony object, then it calls an introduction method to get nessesary parameters for the colony from the user.

Within introduction method:

Asks the user for the following information, it passes information directly into a colony object:

1. Name of colony
2. Name of caretaker
3. Queens name
4. Starting size of the colony
5. How many times the colony can be fed
6. How many times they would like the queen to breed
7. If there will be an expansion to the colony

A simulation method is then called upon to run all the senario specified for how the colony can go about.

Within simulation method:

Sets the colony state to active.

Runs the senario so long as the colony is considered active.

The senario:

1. First sees if 20 days have past. If it has not been senario may continue. If it has then colony state is no longer active.
2. Sees if 10 days have past.

* If 10 days have not past, checks to see if there specified number of times colony can be fed.
  + If the colony can still be fed, it checks to see it can breed. If not colony is set to inactive.
    - If the colony can still breed, it breeds tripling the colony’s current size, if not colony set inactive and the first queen dies with the colony size being cut in half.
* If 10 days have past: a second queen is attempted to be bred.
  + If a queen is born, it is named and the first queen dies halfing the current size of the colony. Otherwise first queen dies halfing the current size of colony, and the colony is et to inactive.
* If over 10 days have past, it checks if the second queen was born. If not colony is set to inactive.
  + If the queen was born, it checks to see if colony can be fed.
    - If the colony can be fed, it checks to see if the queen is allowed to breed. If not the colony is set to inactive.
      * If the queen has not reach the amount of times bred, it may breed, if not the colony is set to inactive.

After the complettion of the simulation method, a method for giving information on the final state of the colony is called upon.

Wihtin the the get information method:

Information recicved from colony object and given to user:

* Colony Name
* Caretaker’s Name
* Queen’s name
* Starting Size of the colony
* Days the colony was fed
* Amount of times the user desired the colony to breed
* Amount of times the queen bred
* Amount of queen deaths
* If the colony was expanded
* If the second queen was born
* The name of the second queen
* Size of the ant population at the end of the senario