Lab #8: Insect Collector

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*12/1/2023*

Algorithm

This lab demonstrates Polymorphism and virtual methods. The primary program will allow the user to create a list of insects that all have different properties. When the program ends, it will show information about the insects.

For this to work, each different kind of insect will have to have a common parent class. This parent class will be called Insect. The insect class will have a color and a size. There will be getters and setters for each of these. Second, there will be a function called “eat” that needs to be implemented by each insect.

There will be 4 different types of insects, an Ant, a Grasshopper, a Beetle, and a Termite. Each of these will implement the eat method and have constructors and destructors with print statements to show the flow of the program.

The main flow of the program will happen when the list of insects is filled by the user. They will be repeatedly prompted for the type of insect to create and then the color of the insect. When they have input that information, a size is randomly generated for the new insect. Finally, that insect is put in the list of insects.

When the list of insects is completely filled, each insect will be printed out. Then all dynamically allocated memory will be freed and the program will end.

Screen-Shots of Running Program

A screen shot of a computer

Description automatically generated

A screen shot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Integrity Statements

* I have not shared the source code in my program with anyone other than the pre-approved human sources.
* I have not used source code obtained from another student, or any other unauthorized source, either modified or unmodified.
* If any source code or documentation used in my program was obtained from another source, such as the course textbook or course notes, that has been clearly noted with a proper citation in the comments of my program.
* I have not knowingly designed this program in such a way as to defeat or interfere with the normal operation of any machine it is graded on or to produce apparently correct results when in fact it does not.