Predator-Prey-Scavenger Simulation Black Box Test Plan

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Introduction

The Predator-Prey-Scavenger Simulation program takes population count, birth rate, and death rate values for three populations in an ecosystem, and shows how the populations would change over the course of time. This black box test plan describes tests for the program that test its functionality. One of the tests checks that the program calculates and shows the proper values when it is given valid parameters. The other tests check that the program fails appropriately when given invalid values.

The program is started by running the EcosystemGUI class. No additional arguments are required in the command line because all required values are either default values in the program, or values provided by the user through the GUI.

Test ID	Description	Expected Results	Actual Results
default (SamuelJessee)	**Preconditions: Program has been started.** Do not change any values, and continue through the program until results are shown for the default values.	Wolf Count: 244 Birth Rate (via predation): 0.000680 Death Rate: 0.230000 Elk Count: 343 Birth Rate: 0.165000 Death Rate (via predation): 0.000600 Magpie Count: 334 Birth Rate (via predation): 0.000002 Death Rate: 0.100000 Birth Rate (natural prey deaths): 0.000600 Birth Rate (predator deaths): 0.000300	Wolf Count: 244 Birth Rate (via predation): 0.000680 Death Rate: 0.230000 Elk Count: 343 Birth Rate: 0.165000 Death Rate (via predation): 0.000600 Magpie Count: 334 Birth Rate (via predation): 0.000002 Death Rate: 0.100000 Birth Rate (natural prey deaths): 0.000600 Birth Rate (predator deaths): 0.000300
nonNumberCount (SamuelJessee)	**Preconditions: Program has been started.** Keep default names and colors and click close, then change Wolf Count to "abc" and click start.	Initial population counts must be integers.	Initial population counts must be integers.
negativeNumberCount (SamuelJessee)	**Preconditions: Program has been started.** Keep default names and colors and click close, then change Wolf Count to -1 and click start.	Population counts cannot be negative.	Population counts cannot be negative.
nonNumberRate (SamuelJessee)	**Preconditions: Program has been started.**	Birth/death rates must be numbers.	Birth/death rates must be numbers.

	Keep default names and colors and click close, then change Wolf Birth Rate to "abc" and click start.		
invalidRate (SamuelJessee)	**Preconditions: Program has been started.** Keep default names and colors and click close, then change Wolf Birth Rate to 1.01 and click start.	Birth/death rates must be between 0 and 1.	Birth/death rates must be between 0 and 1.
decimalCount (SamuelJessee)	**Preconditions: Program has been started.** Keep default names and colors and click close, then change Wolf Count to 10.01 and click start.	Initial population counts must be integers.	Initial population counts must be integers.

Document Revision History

Date	Author	Change Description
9/23/2015	Samuel Jessee	• created black box test plan.
10/7/2015	Samuel Jessee	• corrected typo in invalidRate test, created decimalCount test, and went through all black box tests with Project1.
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