PRIMATES

ABOUT THE PROJECT

Primates is an application system that keeps track of the daily functioning of a Sanctuary. The application provides a digital replacement for paper records. The system keeps track of all the monkeys, where they are, the food they like, their species, gender, size, weight, and age. It also provides reports about the sanctuary capacity and if the sanctuary can accept more primates. The sanctuary has 2 types of housing - Isolation and Enclosures. Primates that are accepted to the sanctuary are put into isolation and then moved to Enclosure after preliminary checks. An enclosure is a group of primates (troop) of the same species. If a sanctuary is full then primates can be moved to other sanctuaries.

LIST OF FEATURES

1. Sanctuary starts with n Isolation cages and m Enclosures, each enclosure has an initial area. These values can be increased as and when the need arises.
2. The sanctuary initially provides the following food items - “eggs, fruits, insects, leaves, nuts, seeds, and tree sap”, and species - “drill, guereza, howler, mangabey, saki, spider, squirrel, and tamarin”. New food items and species can also be added.
3. If an enclosure is empty any species can enter the enclosure but if an enclosure has a primate then all other primates should belong to the same species.
4. Small primates need 1 Sq.m of area, Medium primates need 5 Sq.m, and large primates require 10 Sq.m
5. The application provides a list of primates (by species and by name) and their housing.
6. A shopping list that contains the quantity of food for each item - 500 grams for large primates, 250 grams for medium primates, 100 grams for small primates.
7. For an enclosure, the program gives out a list of all the animals, their age, and their favorite food.
8. The application allows to search for a particular species and where it can be found.

HOW TO RUN AND USE THE PROGRAM

In terminal: cd to .jar file

Type the command: *java -jar <fileName>.jar*

The program does not need any user interaction. Running the jar file runs and produces an example output of the application.

DESCRIPTION OF EXAMPLES

ExampleRun1

1. Created a Sanctuary with 5 cages, 3 enclosures, and 20 sq.m area for each enclosure.
2. Added 5 different primates to the sanctuary.
3. Tried to add a 6th primate to show that no more primates can be added.
4. Increased the number of Isolations from 5 to 8.
5. Added the 6th primate to the sanctuary.
6. Searched for species in the sanctuary to get their current housing.
7. Searched for a species not in the sanctuary to show that an exception will be thrown.
8. Printed out all the details about the sanctuary such as the species list and their housing, each primate and where it is being housed, and the shopping list of the sanctuary.

ExampleRun2

1. Tried to create sanctuaries with negative arguments to show the exceptions.
2. Created a sanctuary with 5 cages, 0 troops, and a 20 sq.m troop area per troop.
3. Tried to add primate with illegal arguments to show the exceptions that are produced.
4. Added 4 primates to the sanctuary.
5. Tried to add a new species which wasn't allowed by default to show exception.
6. Added a new species to the allowed species list and added a primate.
7. Printed out the count of primates in the sanctuary.
8. Tried to move a primate to an enclosure with no space to show the exception produced.

ExampleRun3

1. Created a sanctuary and added new species and a food item to it.
2. Added 5 primates to the sanctuary.
3. Moved a primate to the enclosure and reported the change in housing.
4. Tried to move the same primate to enclosure again causing an exception.
5. Added more primates to Isolation and moved them to the enclosure and back (stress testing the model).
6. Displayed various details about the housing and sanctuary.
7. Created a new sanctuary and moved an animal to it when enclosure capacity reached.

DESIGN/ MODEL CHANGES

While the original design consists of an abstract Hosuing class, the implementation removed this abstract class. The functions provided by Isolation and Enclosure were similar on paper but their method signatures, return types and parameters are different. The original design V1 has 2 enums SIZE and FOOD but these were dropped to provide flexibility of adding/changing these at runtime. Instead, they are considered as a list that can be updated.

ASSUMPTIONS

The application was developed from the viewpoint of an employee working in a sanctuary using a user interface to interact with the system. The application works in this perspective. The only assumption made in this project is that no 2 primates will have the same name. All names should be unique. When moving a primate from this sanctuary to the other sanctuary, the other sanctuary is assumed to not have a primate with a similar name if there is one then the sanctuary will not accept the primate. The other sanctuary should also provide similar food and accept similar species. Since the species accepted by a sanctuary is different from one another.

LIMITATIONS

The application offers a single interface and provides the functionalities mentioned in the list of features. The system is not as loosely coupled as hoped and does not allow to change Primate details once they are entered.

CITATIONS

None