

Jungle Friends Primate Sanctuary

Project to design and implement a Sanctuary care for New World primates who have been cast-off from the pet trade, retired from research, or confiscated by authorities. _

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- Project1 - PDP

Features

- Sanctuary implements different types of housing: Isolation and Enclosures
- Isolation is used to keep monkeys when they first arrive at the sanctuary and anytime they are receiving medical attention. Isolation consists of series of cages each of which can house a single animal.
- Enclosures are much larger and can host a single troop (i.e., a group) of monkeys.
- Each troop in a enclosure consists of a single species that is found in the New World (some of which are pictured below): drill, guereza, howler, mangabey, saki, spider, squirrel, and tamarin.
- Enclosures are initially configured to house a particular species of monkeys but can be repurposed for a different species if they are empty.
- The capacity of an enclosure is dependent upon the size of the enclosure and the size of the monkeys in the enclosure.
- Monkeys that are received by the sanctuary must go into isolation where they are assessed and given medical attention.
- Monkeys that have received medical attention may be moved to an available enclosure if there is room.
- The list of species that are currently being housed in alphabetical order which includes where in the sanctuary each species is (both in enclosures and in isolation) is produced.
- Information on where in the sanctuary a particular species is housed is provided.
- Sign for a given enclosure that lists each individual monkey that is currently housed there. For each individual monkey, the sign should include their name, sex, and favorite food.
- Alphabetical list (by name) of all of the monkeys housed in the Sanctuary and their corresponding location
- Shopping list of the favorite foods of the inhabitants of the Sanctuary.

How to Run

1. Add Java to Windows - <https://windowsreport.com/outdated-java-windows-10/> You'll find below a path to the latest Java version in case you need it. Then, you can find JAR file openers or executors, and we recommend some. Using Command Prompt is also a handy solution if you don't want to install third-party tools.
2. Download a JAR file opener
3. Open the File Explorer and the folder that includes the file you need to run.
4. You should right-click the JAR file and select Open with from the context menu.
5. Click Choose another app and then select to open it with Java(TM) Platform SE binary.

Or-

1. Press the Win key + X hotkey and select Command Prompt (Admin) to open it as administrator.
2. Then input the following command (replacing the example with the actual path of the file you need to run) and press Enter: `java -jar c:pathtojarfile.jar`

How to use the program

Call the methods of the class to check the working of the Sanctuary class.

Description of Examples to show functionality of Project

test1: To test negative sanctuary id

1. Create a new sanctuary class with negative sanctuary id
2. throws an illegal argument exception

test2: To expand the given isolation

1. call the method to expand the isolation size with the new value of n
2. function adds n to existing isolation size
3. store the new isolation size

test3: To expand the given enclosure

1. call the method to expand the enclosure size with the new value of m
2. function adds m to existing enclosure size
3. store the new enclosure size

test4: To add a new monkey

1. Add 5 new monkeys to the sanctuary
2. Validate the list of cageID in isolation that are created newly.

test5: To move a monkey to enclosure

1. Add 5 new monkeys to the sanctuary
2. Validate the list of cageID in isolation that are created newly.
3. Call the function `setHealthStat` passing the medical health status as true to change the monkey location to enclosure
4. validate with decrease in isolation cages and the increase in enclosures added

test6: Test if a given enclosure is full

1. Add 4 new monkeys to the sanctuary of isolation size $n = 5$
2. Validate the list of cageID in isolation that are created newly.
3. each enclosure has a initial size of 1.
4. Run a loop to Call the function `setHealthStat` passing the medical health status as true to change the monkey location for all monkeys into enclosure.
5. Check if illegal error is thrown because of no space

test7: Test alphabet list of species

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move a monkey to enclosure
3. call the function to get list of all the species that are housed and the list of their location
4. Validate if the list is as expected.

test8: Test the species housed and if no not housed

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move a monkey to enclosure
3. call the function to find if a particular species of monkey exists in either the enclosure or isolation or both or none
4. Validate if the list is as expected.

test8: Test the species housed and if no not housed

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move a monkey to enclosure
3. call the function to find if a particular species of monkey exists in either the enclosure or isolation or both or none
4. Validate if the list is as expected.

test9: Test if sign is generated for monkeys in a given enclosure

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move few monkeys to enclosure
3. call the function to find generate the sign which includes details of the monkey name,sex and favorite food
4. Validate if the list is as expected.

test10: to generate a list of all monkeys that are housed along with their location details in alphabetical order

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move a monkey to enclosure
3. get monkeys in enclosure and add the details to treemap with monkey name and location in enclosure
4. get monkeys in isolation and add the details to treemap with monkey name and location in isoaltion

test10: get a shopping list of favorite food of monkeys and total qantities for each food

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move a monkey to enclosure
3. Iterate through the monkeys in both the housing and find their fav food
4. based on the size of the monkey add the quantity of the food needed

test11: move a monkey to isolation based on medical status

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move few the monkeys to enclosures
3. move one of the monkey from enclosure back to isolation by changing its medical status as false
4. check if there is space in isolation, if there is space then add this monkey to isolation and remove it from enclosure.

test12: test capacity of enclosure

1. Add 5 new monkeys to the sanctuary(isolation cages)
2. Move one of the monkeys to enclosures
3. call the function to check if total monkeys in enclosure is updated
4. call the capacity fucntion to check if capacity is updated.

Design and Model changes

Previously:

1.no functionality to move monkey from enclosure to isolation. 2.Housing just variable was used to determine which housing a given monkey is in.

New:

1.functionality provided for moving a monkey both from enclosure to isolation and isolation to enclosure. 2.SetHealthStat method is used which determines if monkey needs to be shifted from either enclosure to isolation or the other way.

Assumptions

- Monkey cannot exist independently without being housed.
- If there is no space in the isolation to add the monkey then the monkey cannot be created.
- Monkey cannot die, it can only be moved between isolation and enclosure based on the medical status.
- Cageno, enclosureno can be same but they are differentiated based on 'E' or 'I' added at the end of the number.
- Monkeys are categorized into 3 sizes, based on which the quantity of food they eat and the space they occupy is decided.
- Capacity is calculated as enclosureSize-sizeOfMonkey.
- All monkeys are either a male or a female.
- All monkeys have a favorite food.

Limitation

- Monkeys of only 3 sizes are considered.
- Limited amount of space to house a given monkey.
- When there is no space in current sanctuary the monkeys are not shifted to other sanctuaries. Error message is thrown for user.

Citation

None