ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ

UNIVERSITY OF PIRAEUS

Πανεπιστήμιο Πειραιώς

Τμήμα Πληροφορικής

Πρόγραμμα Μεταπτυχιακών Σπουδών «Πληροφορικής»

ΕΡΓΑΣΙΑ ΣΤΟ ΜΑΘΗΜΑ ΑΝΤΙΚΕΙΜΕΝΟΣΤΡΑΦΕΙΣ ΠΡΟΓΡΑΜΜΑΤΙΣΜΟΣ

ΟΝΟΜΑΤΕΠΩΝΥΜΟ : ΜΑΡΙΑ ΑΜΟΡΓΙΑΝΟΥ

ΑΡΙΘΜΟΣ ΜΗΤΡΩΟΥ : ΜΠΠΛ2205

The ZooManagmentApp project is a Java console-based application for managing a zoo. It allows users to perform various operations such as viewing all available animals, adding new animals, searching for animals by name or code, deleting animals by code, and feeding the animals.

Here's a breakdown of the key components and their functionalities:

1. Animal class: It is the base class representing an animal. It has properties such as code, name, homotaxy, weight, and maximum age. It provides getters and setters for accessing and modifying the animal's attributes.

2. Mammal, Bird, and Reptile classes: These are derived classes from the Animal class, representing specific types of animals. They inherit the properties and methods from the Animal class and provide specialized behavior specific to each type.

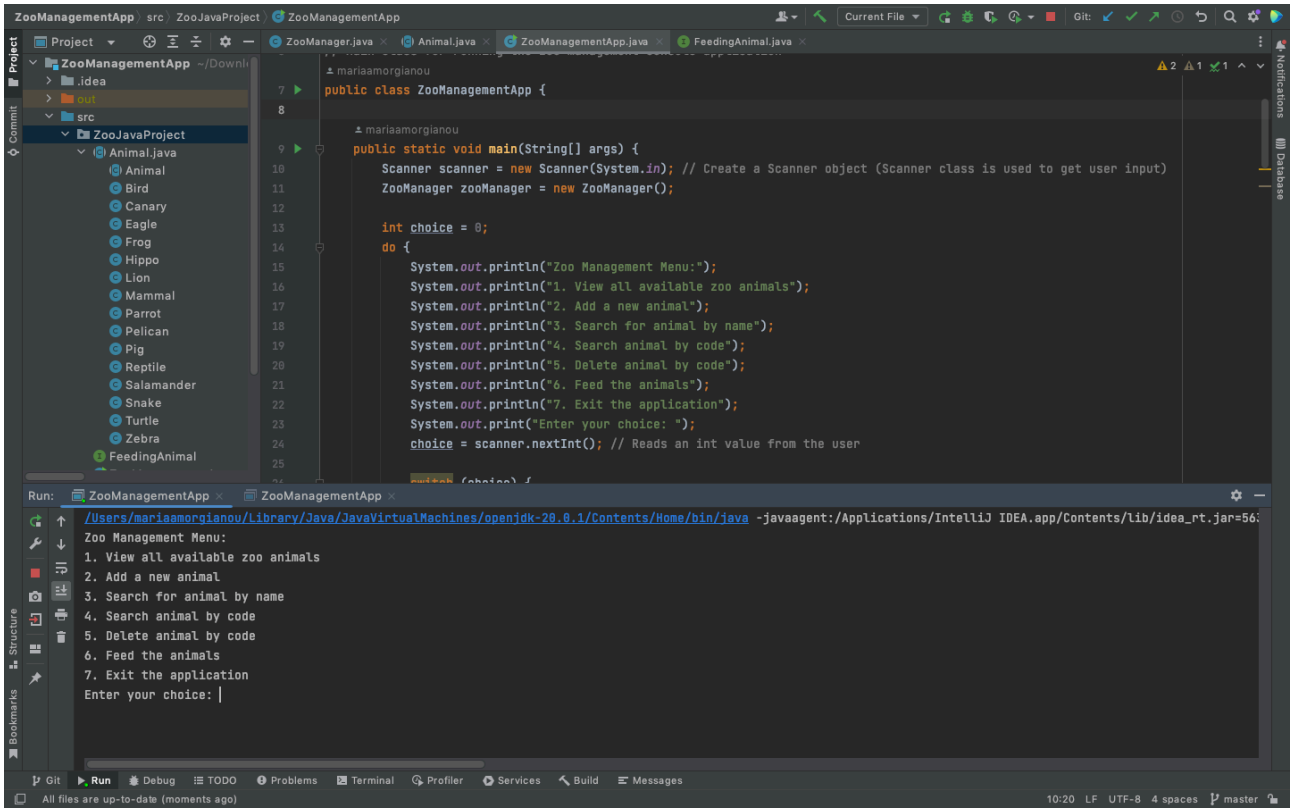
3. ZooManager class: It is responsible for managing the zoo and performing operations on the animals. It has methods such as adding an animal, searching for an animal by name or code, deleting an animal by code, viewing all animals, and feeding the animals.

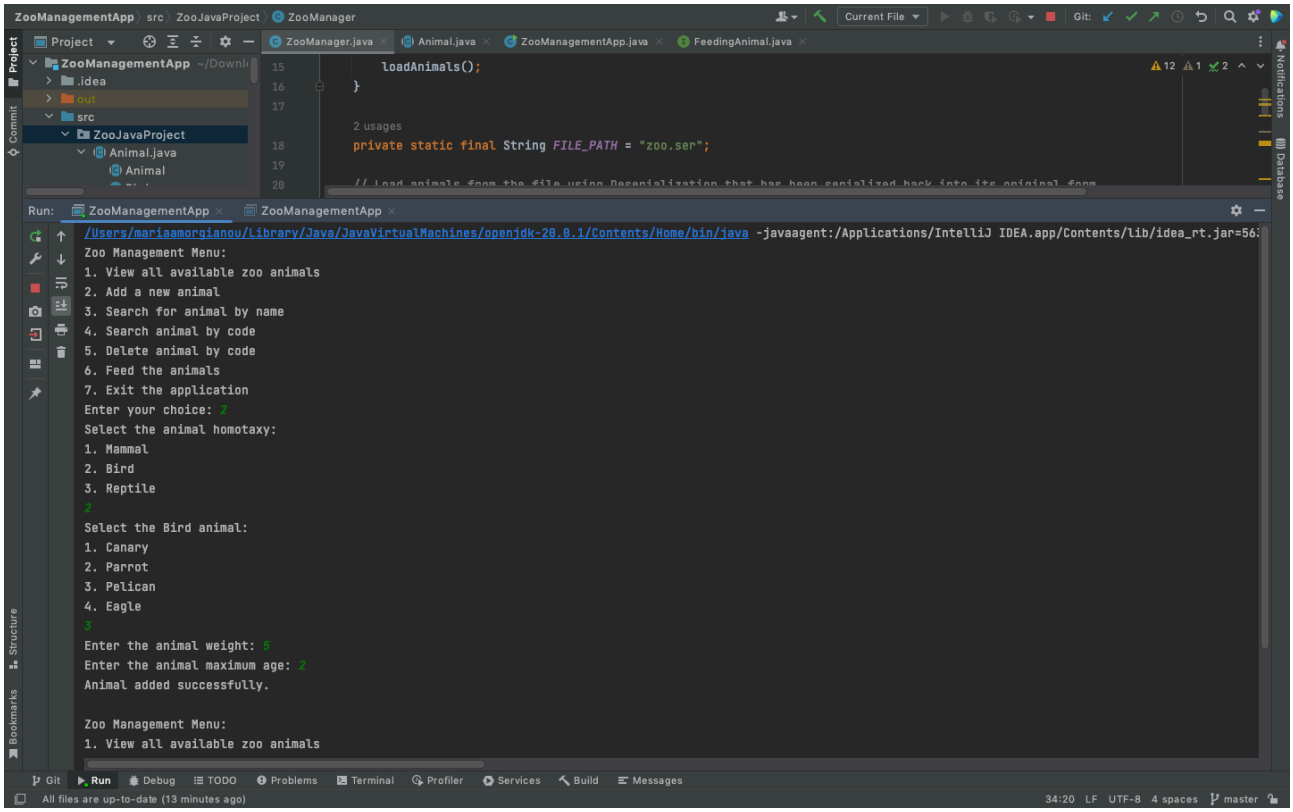
4. ZooManagementApp class: It is the main class for running the zoo management console application. It presents a menu to the user and allows them to choose different options by interacting with the console. It uses the Scanner class to read user input and calls the respective methods of the ZooManager class based on the user's choice.

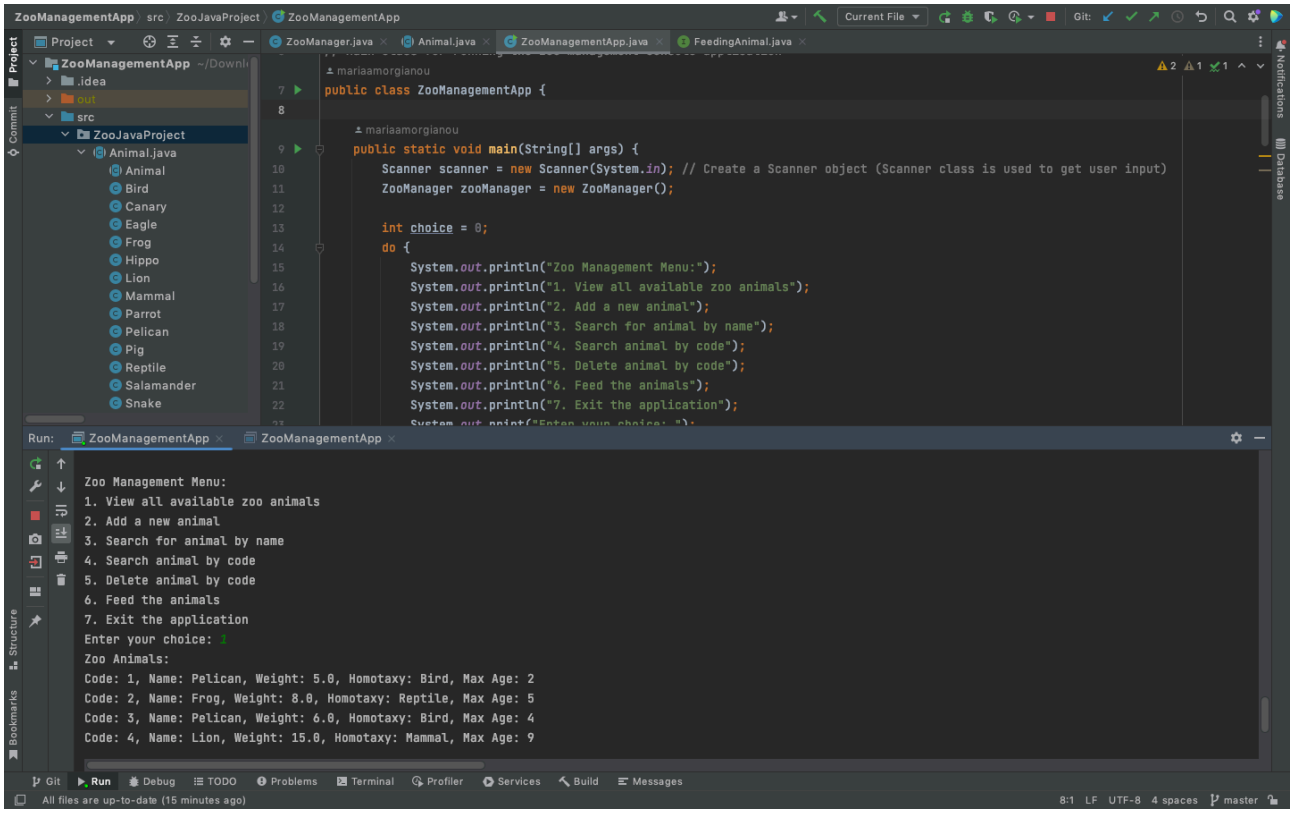
The application follows a menu-driven approach, where the user selects an option from the menu, and the corresponding functionality is executed. The ZooManager class manages the list of animals and performs operations on it based on user input.

Overall, the zoo project provides a n application for managing animals in a zoo using classes, inheritance, encapsulation, interface, serialization and user input in a console application.

Below you can see some screenshots:


ZooManagementApp
src
ZooJavaProject
ZooManagementApp
Project
ZooManager.java
Animal.java
ZooManagementApp.java
FeedingAnimal.java
mariaamorgianou
public class ZooManagementApp {
public static void main(String[] args) {
Scanner scanner = new Scanner(System.in); // Create a Scanner object (Scanner class is used to get user input)
ZooManager zooManager = new ZooManager();
int choice = 0;
do {
System.out.println("Zoo Management Menu:");
System.out.println("1. View all available zoo animals");
System.out.println("2. Add a new animal");
System.out.println("3. Search for animal by name");
System.out.println("4. Search animal by code");
System.out.println("5. Delete animal by code");
System.out.println("6. Feed the animals");
System.out.println("7. Exit the application");
System.out.print("Enter your choice: ");
choice = scanner.nextInt(); // Reads an int value from the user
Run:
ZooManagementApp
/Users/mariaamorgianou/Library/Java/JavaVirtualMachines/openjdk-20.0.1/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=56
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice:
Git
Run
Debug
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (moments ago)
10:20
LF
UTF-8
4 spaces
master


ZooManagementApp
src
ZooJavaProject
ZooManager
ZooManager.java
Animal.java
ZooManagementApp.java
FeedingAnimal.java
loadAnimals();
}
2 usages
private static final String FILE_PATH = "zoo.ser";
Run:
ZooManagementApp
/Users/mariaamorgianou/Library/Java/JavaVirtualMachines/openjdk-20.0.1/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=56
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 2
Select the animal homotaxy:
1. Mammal
2. Bird
3. Reptile
2
Select the Bird animal:
1. Canary
2. Parrot
3. Pelican
4. Eagle
3
Enter the animal weight: 5
Enter the animal maximum age: 2
Animal added successfully.
Zoo Management Menu:
1. View all available zoo animals
Git
Run
Debug
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (13 minutes ago)
34:20
LF
UTF-8
4 spaces
master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Animal.java
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Canary
Eagle
Frog
Hippo
Lion
Mammal
Parrot
Pelican
Pig
Reptile
Salamander
Snake
mariaamorgianou
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System.out.println("3. Search for animal by name");
System.out.println("4. Search animal by code");
System.out.println("5. Delete animal by code");
System.out.println("6. Feed the animals");
System.out.println("7. Exit the application");
Run:
ZooManagementApp
ZooManagementApp
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 1
Zoo Animals:
Code: 1, Name: Pelican, Weight: 5.0, Homotaxy: Bird, Max Age: 2
Code: 2, Name: Frog, Weight: 8.0, Homotaxy: Reptile, Max Age: 5
Code: 3, Name: Pelican, Weight: 6.0, Homotaxy: Bird, Max Age: 4
Code: 4, Name: Lion, Weight: 15.0, Homotaxy: Mammal, Max Age: 9
Git
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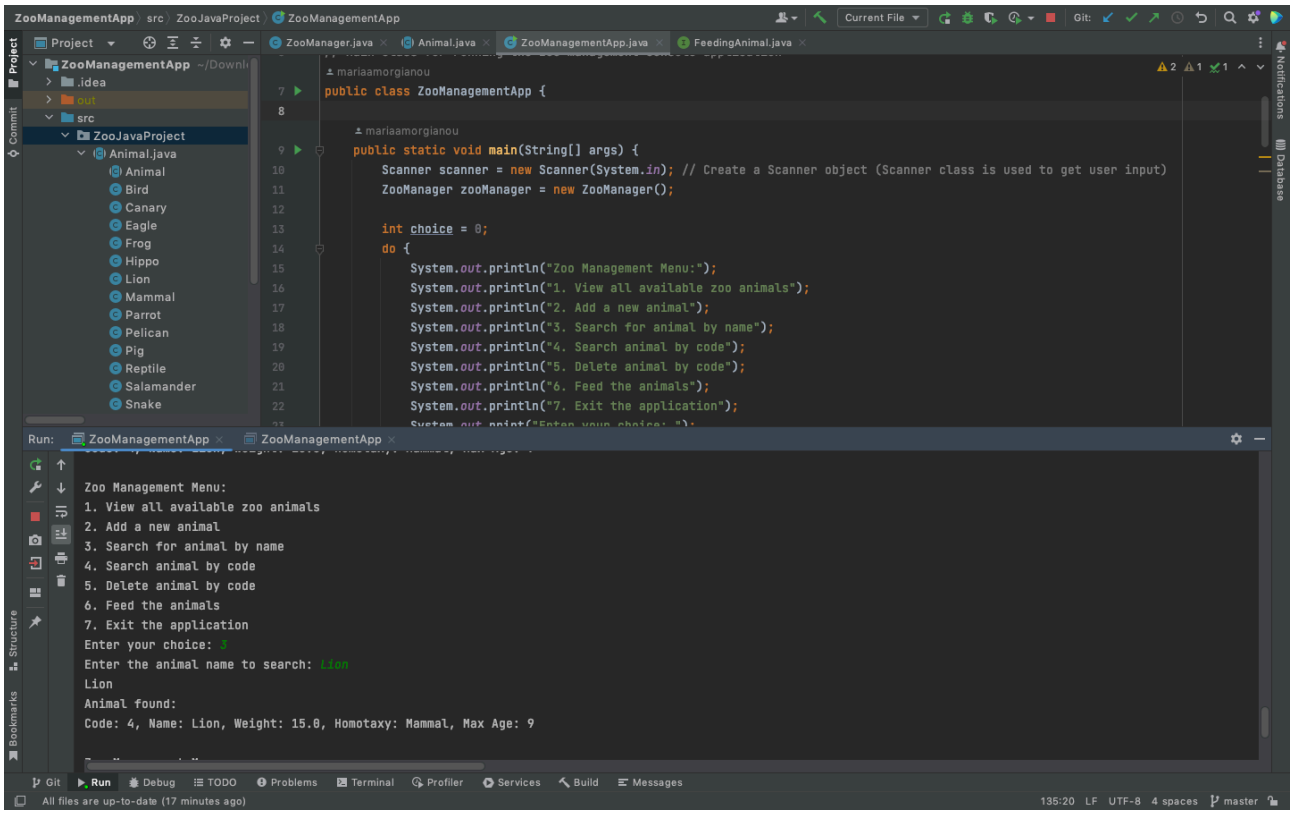
Debug
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (15 minutes ago)
8:1
LF
UTF-8
4 spaces
master


ZooManagementApp
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ZooJavaProject
Animal.java
Animal
Bird
Canary
Eagle
Frog
Hippo
Lion
Mammal
Parrot
Pelican
Pig
Reptile
Salamander
Snake
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int choice = 0;
do {
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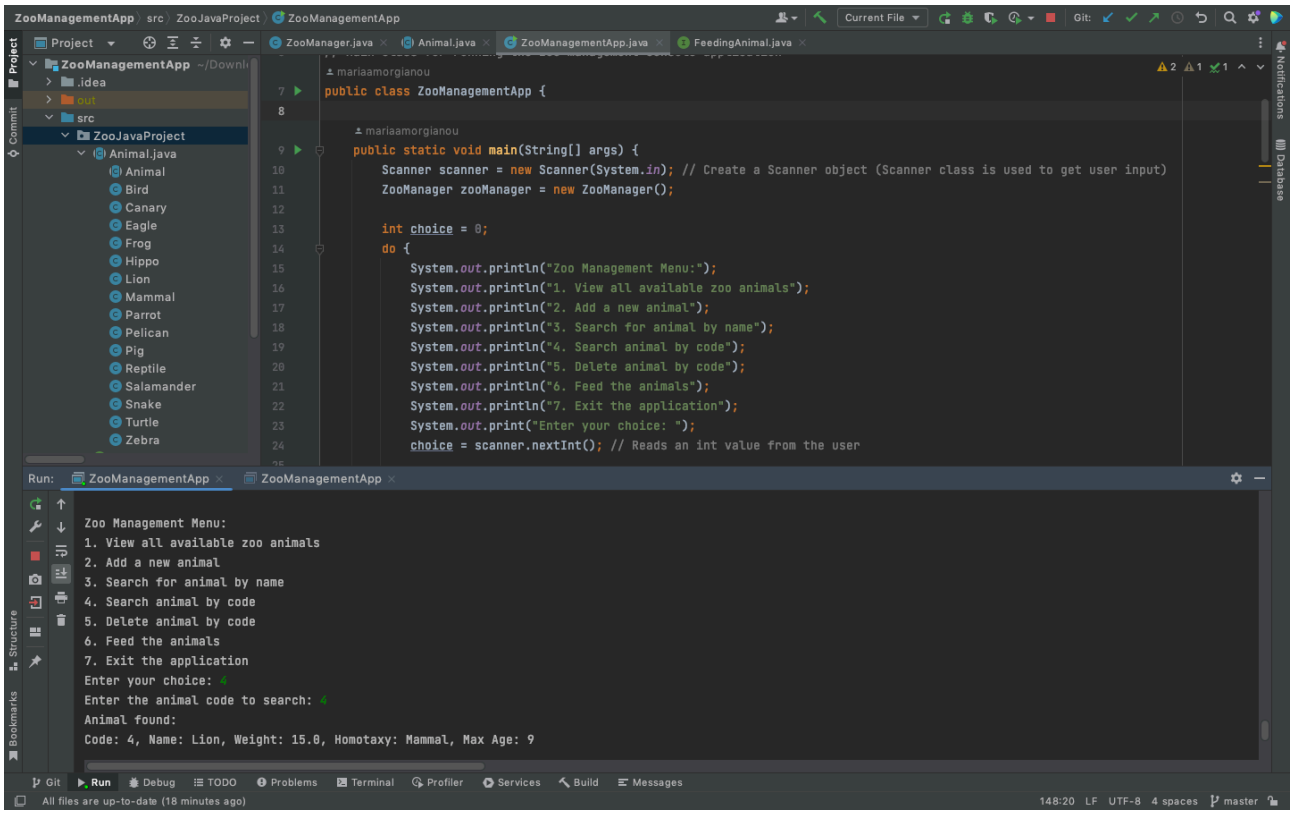
System.out.println("1. View all available zoo animals");
System.out.println("2. Add a new animal");
System.out.println("3. Search for animal by name");
System.out.println("4. Search animal by code");
System.out.println("5. Delete animal by code");
System.out.println("6. Feed the animals");
System.out.println("7. Exit the application");
Run:
ZooManagementApp
ZooManagementApp
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 3
Enter the animal name to search: Lion
Lion
Animal found:
Code: 4, Name: Lion, Weight: 15.0, Homotaxy: Mammal, Max Age: 9
Git
Run
Debug
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (17 minutes ago)
135:20
LF
UTF-8
4 spaces
master


ZooManagementApp
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ZooManager.java
Animal.java
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FeedingAnimal.java
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ZooJavaProject
Animal.java
Animal
Bird
Canary
Eagle
Frog
Hippo
Lion
Mammal
Parrot
Pelican
Pig
Reptile
Salamander
Snake
Turtle
Zebra
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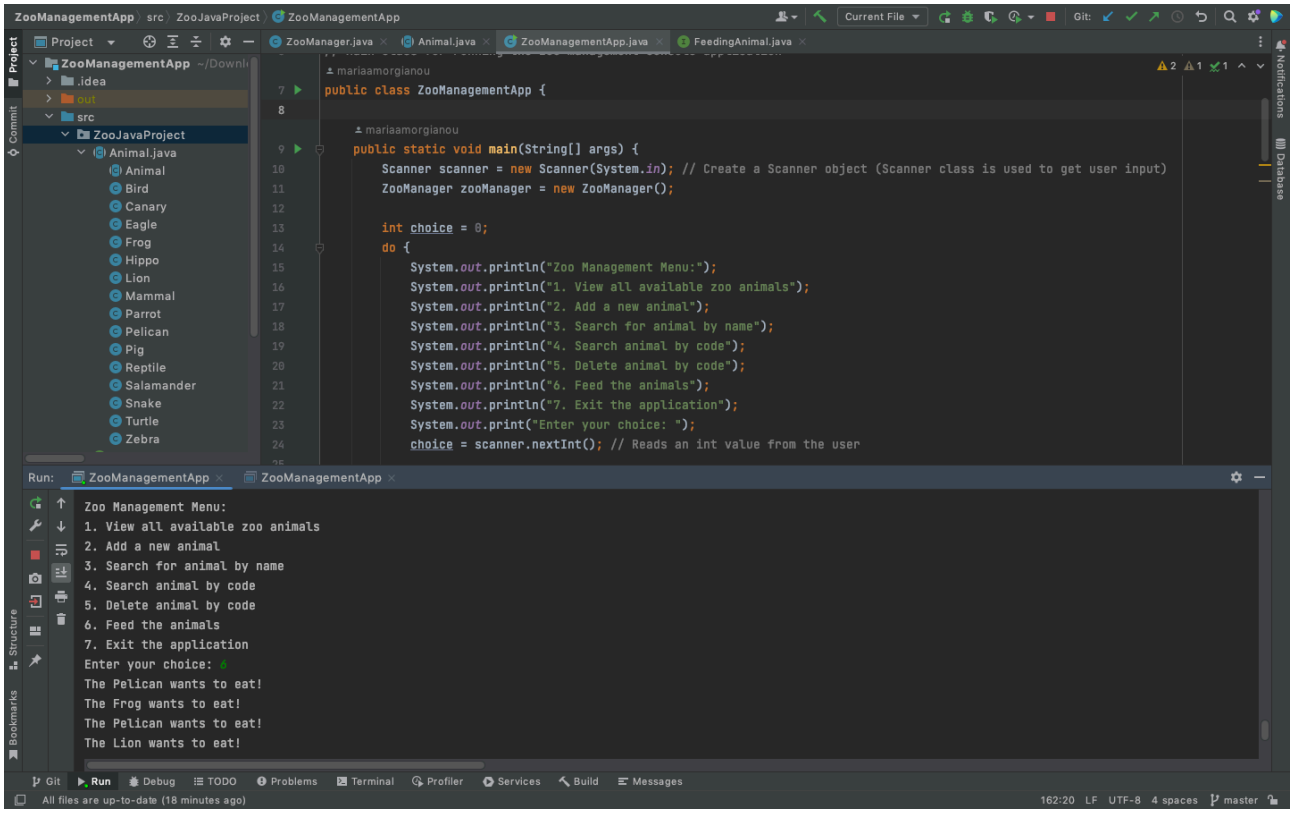
System.out.println("3. Search for animal by name");
System.out.println("4. Search animal by code");
System.out.println("5. Delete animal by code");
System.out.println("6. Feed the animals");
System.out.println("7. Exit the application");
System.out.print("Enter your choice: ");
choice = scanner.nextInt(); // Reads an int value from the user
Run:
ZooManagementApp
ZooManagementApp
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 4
Enter the animal code to search: 4
Animal found:
Code: 4, Name: Lion, Weight: 15.0, Homotaxy: Mammal, Max Age: 9
Git
Run
Debug
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (18 minutes ago)
148:20
LF
UTF-8
4 spaces
master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Frog
Hippo
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Parrot
Pelican
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Snake
Turtle
Zebra
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do {
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System.out.println("3. Search for animal by name");
System.out.println("4. Search animal by code");
System.out.println("5. Delete animal by code");
System.out.println("6. Feed the animals");
System.out.println("7. Exit the application");
System.out.print("Enter your choice: ");
choice = scanner.nextInt(); // Reads an int value from the user
Run:
ZooManagementApp
ZooManagementApp
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 6
The Pelican wants to eat!
The Frog wants to eat!
The Pelican wants to eat!
The Lion wants to eat!
Git
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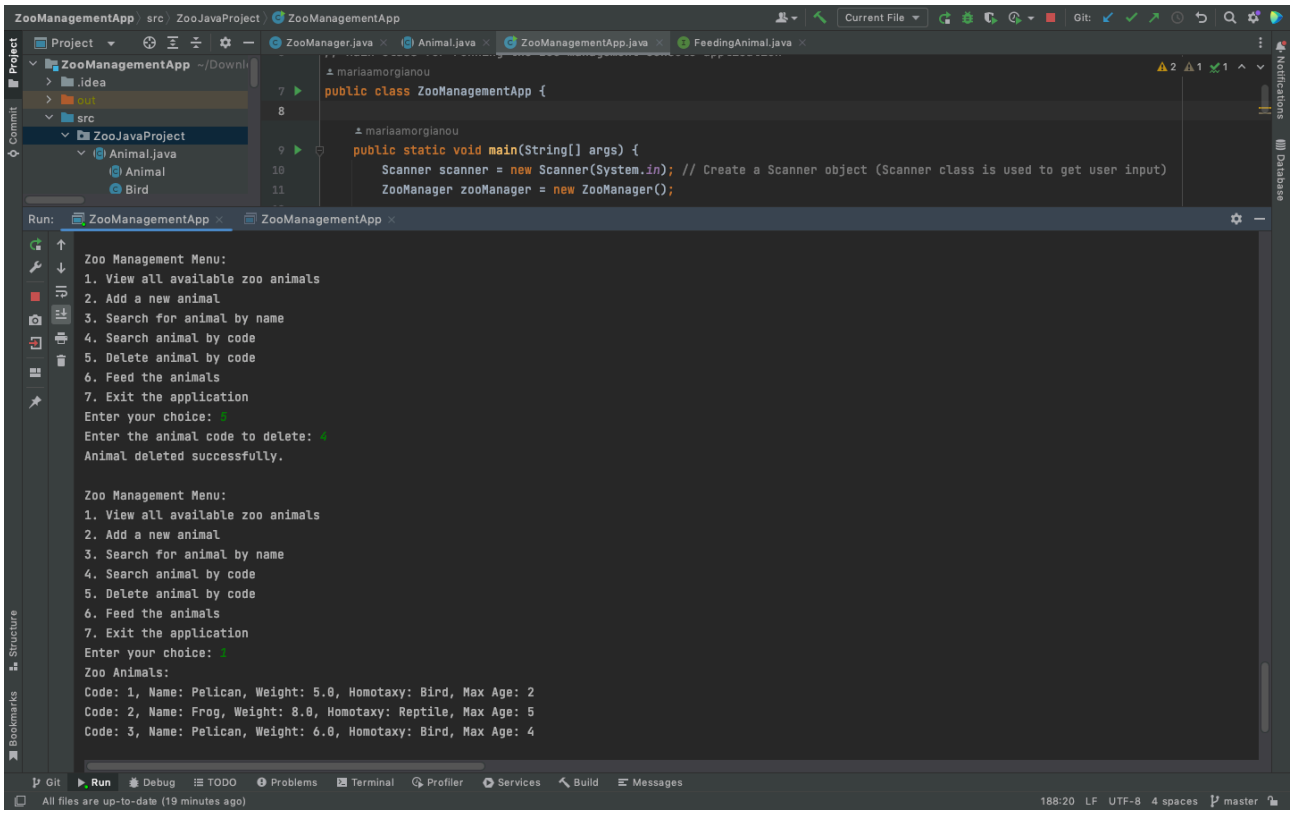
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (18 minutes ago)
162:20
LF
UTF-8
4 spaces
master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ZooManagementApp
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ZooManager.java
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ZooManagementApp ~/Downl
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Animal.java
Animal
Bird
mariaamorgianou
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ZooManager zooManager = new ZooManager();
Run:
ZooManagementApp
ZooManagementApp
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 5
Enter the animal code to delete: 4
Animal deleted successfully.
Zoo Management Menu:
1. View all available zoo animals
2. Add a new animal
3. Search for animal by name
4. Search animal by code
5. Delete animal by code
6. Feed the animals
7. Exit the application
Enter your choice: 1
Zoo Animals:
Code: 1, Name: Pelican, Weight: 5.0, Homotaxy: Bird, Max Age: 2
Code: 2, Name: Frog, Weight: 8.0, Homotaxy: Reptile, Max Age: 5
Code: 3, Name: Pelican, Weight: 6.0, Homotaxy: Bird, Max Age: 4
Git
Run
Debug
TODO
Problems
Terminal
Profiler
Services
Build
Messages
All files are up-to-date (19 minutes ago)
188:20
LF
UTF-8
4 spaces
master