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CMPT 220

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Project 2 Milestone

Abstract

For this project, I designed and programmed an application that stores data about turtles. The application was written in the Java programming language in the NetBeans IDE. It includes a database that stores information on individual turtles and a user interface to read and write to the database. In this report, I describe the program that I created and what still needs to be done in order to complete it.

Introduction

My inspiration for this project came from my fascination with turtles and my desire to help in both research and conservation efforts for endangered turtle species. I also saw this as an opportunity to learn how databases work and get some experience using them so that I will be more prepared to take courses that involve database programming in the near future. In the next section, I explain what my program does and how specific users interact with it. I conclude by summarizing the goals accomplished by my program.

Detailed System Description

My program was designed to help biologists and wildlife conservationists keep track of individual turtles that they come across while doing their field work. Users start by entering the species of a turtle they found, its length, weight, pattern on the top of its shell, pattern on its head

and neck, skin color, the date they found it, and any additional information worth noting into the appropriate data fields. An identifying number is added to the information entered by the user before it is all stored as an entry in the turtle database. The entry remains in the database until the user decides to delete it. The user can update an entry using a table in the UI that is connected to the database or by writing code and invoking the setter methods in the Turtle class (see UML diagram at the end of the report). Initially, I had plans to include a feature that would allow the user to attach an image of the turtle they found to its database entry so that it would be easier to recognize it when they access the entry in the future. However, I have not figured out how to successfully implement this feature yet and I will continue to work on it over the next few weeks. In addition, I need to create a class that sorts database entries based on the values in a specified column (eg. species, length, date found) and a class that converts and displays the length and weight of a turtle in Imperial units before I can consider my program complete. Hopefully, though, I can also spend some time improving the usability of my program by finding more attractive fonts and colors for the UI.

Conclusion

The purpose of my program is to help scientists track turtle populations and determine whether their numbers are healthy or action needs to be taken to protect them from extinction. Although my program is not completely done and there are programs already in use that likely do a better job of serving my program's purpose, I believe that going through the long process of building it will expand my knowledge of databases as I hoped it would and greatly improve my problem-solving skills. These are things that I am sure I will find valuable as I continue to learn about computer science and build programs.

Turtle

-id: int
-species: String
-lengthCm: double
-weightKg: double
-shellTopPattern: String
-headPattern: String
-skinColor: String
-dateFound: Date
-notes: String

+Turtle()
+Turtle(id: int, species: String, lengthCm: double, weightKg: double, shellTopPattern: String, headPattern: String, skinColor: String, dateFound: Date, notes: String)
+getId(): int
+getSpecies(): String
+setSpecies(species: String): void
+getLengthCm(): double
+setLengthCm(lengthCm: double): void
+getWeightKg(): double
+setWeightKg(weightKg: double): void
+getShellTopPattern(): String
+setShellTopPattern(shellTopPattern: String): void
+getHeadPattern(): String
+setHeadPattern(headPattern: String): void
+getSkinColor(): String
+setSkinColor(skinColor: String): void
+getDateFound(): Date
+setDateFound(dateFound: Date): void
+getNotes(): String
+setNotes(notes: String): void