Devin Johnson, Tychicus Johnson

Software Documentation Guide

Environmental Justice

The Design:

- The application is designed in a user-friendly manner using a menu and text prompts.
- Data Structure Used and Why
    - A dynamic array is used as a skeleton for the entire application. Each column of information is inserted into a variable, and all the variables are inserted into a struct. Every struct represents an element in the array.
    - The dynamic array was chosen because of its versatility. We knew that the best way to organize the data was to insert the data into a struct. The question that we needed to answer was how do we use and manipulate the data? The dynamic array allows us to accomplish every one of our functions.

Data Set

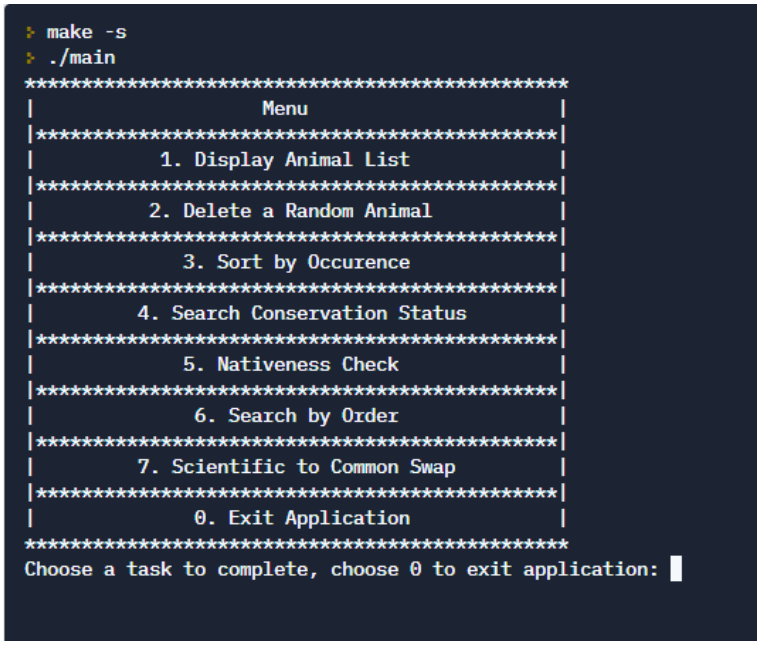
- Original Data Set:
    - https://www.kaggle.com/datasets/nationalparkservice/park-biodiversity?select=species.csv
- Revised Data Set and Code can be found here:
    - https://github.com/DJohnson2021/CSC-228-Data-Structures-and-Algorithms

Performance of Algorithms

- All of the algorithms used in the applications work as intended, but a couple of them have room for improvement in time constriction and the input they use. The application displays the time duration of each algorithm in ticks for the user. We had to compromise with some algorithms because it was not possible to manipulate the data set in the way we wanted. Further testing and improvement are required.

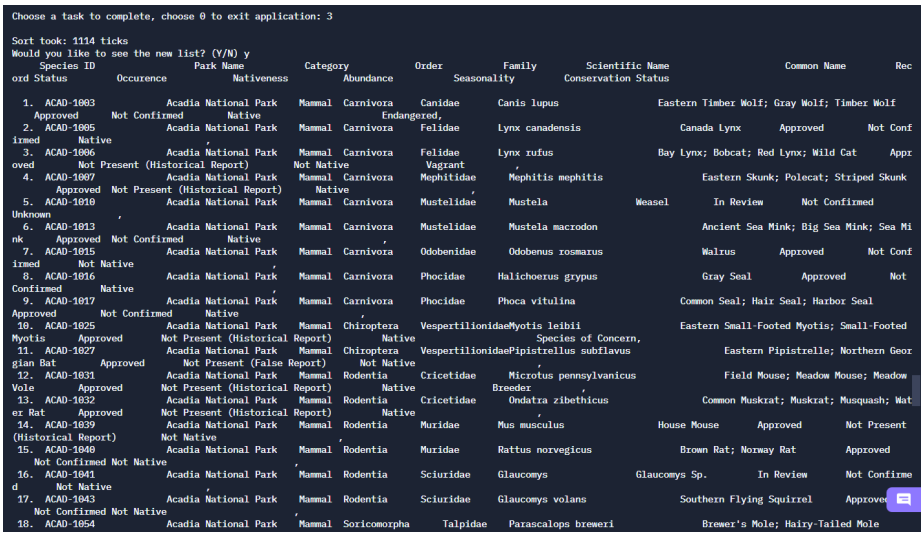
How to?

- After running the application, a menu, as well as a text prompt, should be displayed.



- The is an operation corresponding to a number from zero to seven. The program should ask you to enter a number to complete a task. If a number outside the range given is chosen, the program will ask you again to select a task until a recognizable number is entered.
- After choosing a task for the program to complete, the program will execute the task.

- After the task is completed, the program will display the time it took to complete the task in ticks.
- Some tasks manipulate the information within the data set. After the completion of these tasks, the program will ask you if you would like to view the new list. You as the user are required to enter either “y” or “n” in response to the prompt. The program will automatically capitalize the characters you enter for its use.



- After printing the new list, the program will ask you if you would like the program to execute another task. You will need to enter “y” or “n” as a response. If “n” is entered the program will end. If “y” is entered, the program will prompt you to enter a number just like in the beginning.

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Task completed. Would you like to choose another task?(Y/N) n
Application Closed
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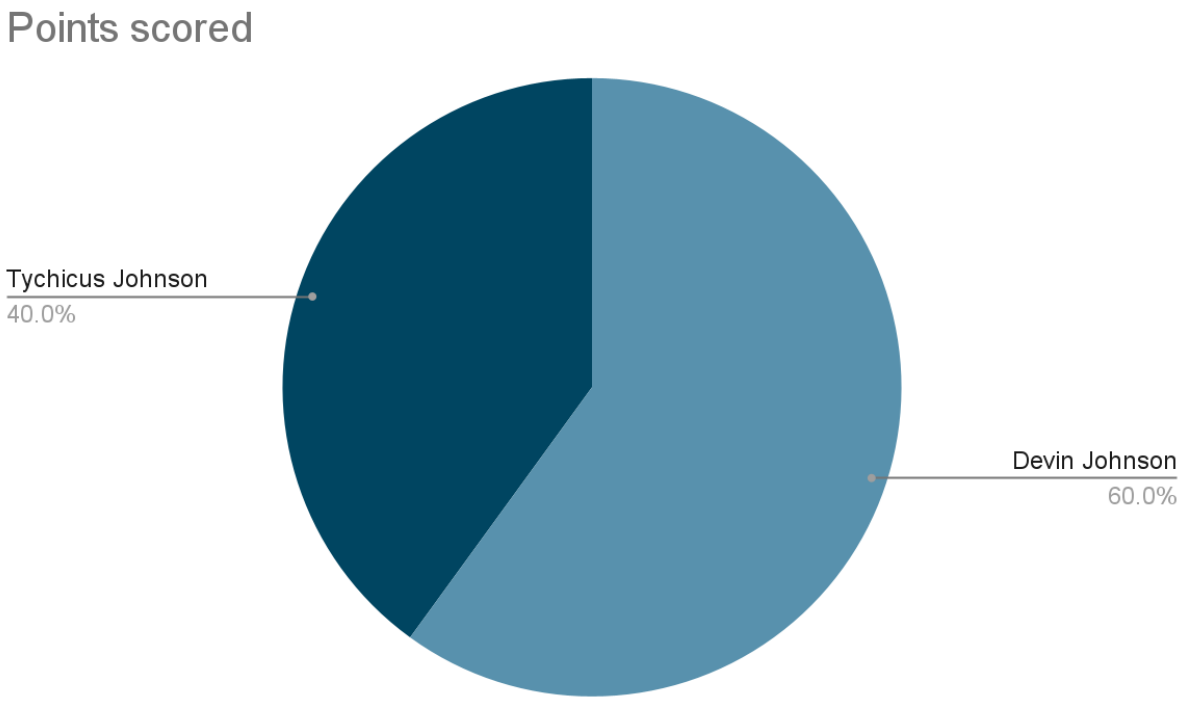
Division of Duties:



- Devin Johnson and Tychicus Johnson worked together to establish the dynamic array and its core functions
- Devin Johnson did three out of the five group functions required
- Devin Johnson helped Tychicus Johnson complete the last two group functions
- Tychicus Johnson completed his own individual functions

- Devin Johnson completed his own individual functions and included an extra function as well