

# Id finder project

[Github repo](#)

## Defining the project

1. This program enables the user to navigate through a Json file containing data describing the characteristics of planets and star systems in a video game. Using user input and prompting loops, the user can select the parameters they are looking for within the data, and at the end the IDs for those planets are printed.
2. The Json data contains a hierarchical dictionary describing star systems within the game and their characteristics. The main part of that dictionary I will be using is the “planets” list of dictionaries which each describe a planet and its characteristics.

Json provided by a friend who scraped the data from the game which will be included with the program files.

3. The program is built around 2 main classes
  - Node, holds user choices.
  - LinkedList, arranges the user choices and enables an undoing/redoing functionality.
- Beyond the classes, the structure of the program is built around 2 main prompting loops. An outer loop for choosing an action [find(), load\_star\_data(), show\_data(), show\_config(), end\_program()]. While the 2<sup>nd</sup> loop within the find() function iterates until the user is done choosing planet parameters.

4. I used a couple of functions and variables from one of my own libraries and another project I worked on.

Functions pulled from other sources:

[starfinder\_visuals.py] library

- color\_input(), pulled from custom visual library which just colors the default input() function
- Clear\_console(), pulled from custom visual library which resets cursor to top left
- Various text variables, (red, green, blue, yellow, violet, white/reset, dim(text), bold(text))

[starfinder\_config.py] pulled from another project and slightly altered to fit the data

- Config class, handles the json data (updates, loading, ensuring it exists)
- find\_config\_path(), finds the running program path and returns where config.json should be

[other libraries]

- os, for interacting with the operating system (file handling)
- json, for handling Json files
- Msvcrt, for windows, for reading individual characters in the console (used in color\_input())
- Tty, termios, for Linux, for reading individual characters in the console (used in color\_input())

5. Data structures:

- Dictionaries, used extensively for managing function calls and the Json data
- Lists, used for storing output information such as the ID list printed after searching
- Tuples, used for storing information which requires interpreting part of the tuple. For example, the parameter entries ("category", value).

- Or for the Boolean tuple used within the find() function which determine when to end the search with or without printing the IDs
- Linked lists and nodes, used for the undo/redo functionality of the program

6. [Test case 1]

User input:

1

air

jovian\_a

done

Results:

[Search Results]

=====

37-6

174-5

355-6

563-5

634-5

655-4

671-5

773-8

965-4

[Test case 2]

User input:

1

continental

no\_life

undo

life

methane

done

Results:

[Search Results]

=====

347-4

791-3

884-5

[Test case 3]

User input:

1

martian

dunes

undo

redo

life

done

Results:

[Search Results]

=====

120-2

574-3

7. I think the program runs well, but it isn't perfectly unbreakable. Specifically, the function that allows the user to add data paths to the config. It's possible for the user to enter a valid path but that path not lead to a Json file with the correct format. Other than that, I made sure to add checks to all other user inputs. So overall, the program is very flexible.