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Foundations of Programming, Python

Assignment 7

Error Handing and picking data in python

Introduction

For this assignment we will be editing an existing script from the previous week. This assignment will mainly focus on implementing error handling operations via the “try” and “except” python key words. Data pickling will also be discussed and implemented within the script. A short review of webpages addressing these python features will also be discussed within this paper. For validation purposes, the script will be run in spyder and in the anaconda terminal and screen shots will be made available. A link to the Github post will also be posted within this documentation for review purposes.

Try some pickles

The concept of error handling initially appeared straight forward. In other words, rather than have you script crash, we could instead introduce exceptions. With exceptions, we can display a descriptive error of our choosing and still allow the script to continue to execute its operations rather than being terminated. The issue arose in the actual implementation. It was not entirely clear how the “except” keyword would operate in a loop setting. Whether it would terminate the loop or continue was mainly determined through multiple trial runs. Ultimately, through further online research, w3school proved to have the best balance between quantity and quality of the information regarding error handling keywords1. The website also allows the user to type out the python code which was very useful before implementing it into the assignment script. One main issue I noticed with other resource stems mainly with the presentation of the information. While the information is thorough, it is not very appealing to look at and can easily intimidate a new user. When seeking information on error handling and its corresponding keywords, the python documentation was the first resource to consult2. Just like the previous webpages referenced, the official python documentation is indeed thorough but frankly overwhelming in its presentation.

The other feature being implemented in this week’s assignment is pickling. As opposed o previous assignment where data was stored in a text file, pickling allows for the serialization or de-serialization of data to be store as binary information. This process first requires the script to import the pickle module through the “import pickle” statement at the top of the script.

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Figure 1: "try" and "except" implementation when reading in file with pickling

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Figure 2: "try" and "except” implementation when writing to file with pickling

From online research, one main page stood out in regard to information pertaining to pickling3. The webpage provided the basic information need to understand pickling and its implementation without going too in depth into security risks and so on, though they were slightly referenced. In the end, it all comes down to being able to locate easily digestible information, especially as a new programmer. Another webpage worth mentioning that was useful in understanding the pickle module contained an article by Christopher Tao4. The information was easy to follow and partitioned in a manner that did not appear overwhelming at first glance.

Modifying the Script

The existing script was modified mainly at point where user interaction would occur, when data type where being changed or when data was being written to or read from a .dat file. In other words, whenever these operations were to occur, a “try” keyword would be implemented to prevent any potential crashes due to invalid inputs or potential type casting issues for example. For validation purposes the script was run in spyder and in the anaconda user terminal. A GitHub post for this assignment can be found at <https://github.com/sirRockIII/Assignment_07.git>.

Summary

This assignment involved the modification of the CDInventory script from last week. These modifications required the use of error handling python features via the “try” and “except” keywords. Specific areas of interest were in areas of user interaction where input values needed to be validated. These modifications would allow the script to continue to run despite any potential errors. Once these changes had been made, we then incorporated pickling into our script. This required us to first import the pickle module before then dumping or loading the data to or from a designated .dat file.

References

1. <https://www.w3schools.com/python/python_try_except.asp>
2. <https://docs.python.org/3/tutorial/errors.html>
3. <https://www.tutorialspoint.com/python-pickling>
4. <https://towardsdatascience.com/do-not-use-python-pickle-unless-you-know-all-these-facts-d9e8695b7d43>

Appendix

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