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IT FDN 110 A Wi 24: Foundations of Programming: Python

Assignment05

https://github.com/ajawhar24/UW-Intro-to-Python

Advanced Collections and Error Handling

Introduction

In Assignment 05, we apply the skills learned in Module 5. In Module 5, we learned about dictionaries and how they differ from lists, we learned about json files, how to use try and except as an error handling method, and how to post our code in a repository on github.

Creating the Script

In Python, a List is an ordered collection of elements, while a Dictionary is an unordered collection of key-value pairs. We used dictionaries to collect data from a user based on a student's registration information for a course. We then wrote data from a file into a Dictionary, which can read the file and parse its content, organizing it into key-value pairs based on our desired structure. Reading data into a Dictionary involves parsing a file's content and populating the Dictionary accordingly. We then used JSON (JavaScript Object Notation), instead of CSV files to store our data. JSON files are a lightweight data interchange format often used to transmit data between a server and a web application, and it closely resembles a Python Dictionary. Within our code, we utilized the idea of Structured Error Handling in Python, which involves using try-except blocks to handle exceptions gracefully, improving program robustness. Try-except is recommended for error handling as it allows the program to gracefully handle unexpected issues, preventing crashes and providing better user experience.

Finally, GitHub was utilized to share our program with the rest of the class. GitHub is a web-based platform for version control using Git, facilitating collaborative software development. It is used to store, share, and manage code repositories, enabling collaboration, version tracking, and code review in software projects.

Summary

In conclusion, Lists are ordered collections, and Dictionaries are unordered key-value pairs. We employed Dictionaries to gather student registration data, reading from a file and organizing it into key-value pairs. JSON, a lightweight data format, replaced CSV for data storage. Structured Error Handling with try-except blocks improved program robustness and was used to catch any errors the user might input. And finally, GitHub, a platform for Git version control, facilitated collaborative development, which allowed students to share and store code with the rest of the class.