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March 3, 2023

IT FDN 110 A

Assignment 7

https://github.com/kvb37

Exception Handling and Pickling Demo

Introduction

This week I learned how to use different kinds of exception handling in order to make user feedback more constructive. Furthermore, how to save files using pickling. I structured this assignment by creating a menu to go to different demonstrations.

Exception Handling

Before I started my code, I did research on exception handling and found that Programiz had great tutorials and explained how to use exception handling. Once I read through their examples I continued with my project.

I began with using a simple example to show a try/except method of handling errors. I began with asking the user for an input of numbers. Then under a try statement I divided these two numbers and print the value. If the second number was zero, then the code would run the except statement and ask for a non zero number for the second value.

The next demonstration was on how to do custom exception handling. The goal of this demo was to have the user guess my age by inputting a number, if the incorrect number was put in then the error would show up. I began by making a class for this error called 'NotMyAge'. Then set up my variables and collected the guess from the user in the form of an input statement and saved it under the variable 'guess'. Then I used a try/except statement. In the try statement, I used an if statement and stated that if age was equal to guess then print the user is correct. In the else portion of the script, I raised the exception I had made previously that was named 'NotMyAge'. Then in the except statement I called 'NotMyAge' and printed that it was an incorrect guess.

Pickling

There were two sites that I found were helpful in order to learn how to use pickling in order to serialize and deserialize data. These were Afternerd and DigitalOcean. They had great explanations and tutorials explaining picking.

I began this demonstration by collecting data from the user. I asked them for a candy and to ask if it was their favorite. I saved these inputs under the variables 'candy' and 'fav'. Then I imported the pickle and created a file to save my data into called "Demo.txt". I used the function pickle.dump to save the data which I had placed into a table. Then I closed the file and printed that the data had been saved. The data that was saved into the file is shown in Figure 1.

Figure 1: The result of saving data to the file using pickling in the text file.

The next step to the demonstration was getting the data out of the file and deserializing it. I began with a print statement telling the user that the data in the file was being shown to them. Then using a with statement opened the file to read it and used the variable 'file' to refer to this. I used the function 'pickle.load' to get the information from the file and saved the loaded data under the variable 'open'. This deserialized the data from the file. Then I printed the data saved under the variable 'open' to show it to the user.

Combining Pickling and Exception Handling

I began with having the user guess a number and saving it under the variable 'number'. The goal of the program was for the user to guess the correct number between one and ten. I converted their answer into an integer. I used a while loop and set the variable 'exit' to false so when the variable would be set equal to true then it would exit the loop.

I used the variable 'anumber' to compare and set it to a value of four. Under a try statement, the number that was guessed was the same as the variable 'anumber' then it would print that the user was correct. It would also ask them how many attempts it took to guess the correct answer. That data was saved into a file using pickling. If they got the incorrect answer, a custom exception handle was used to tell the user that their guess was incorrect. Then 'except' was used to print that they incorrectly guessed.

Under another if statement, the user was asked if they wanted to see how many attempts it took previously. If they said yes, then the data from the file would be deserialized and presented to the user. If not, then it would exit the program.

Summary

In this assignment, I learned how to use pickling and exception handling within my code.

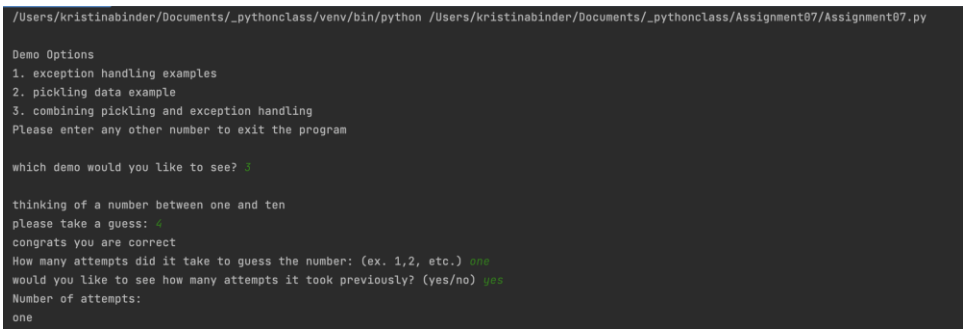

Figure 2: The script running in PyCharm.

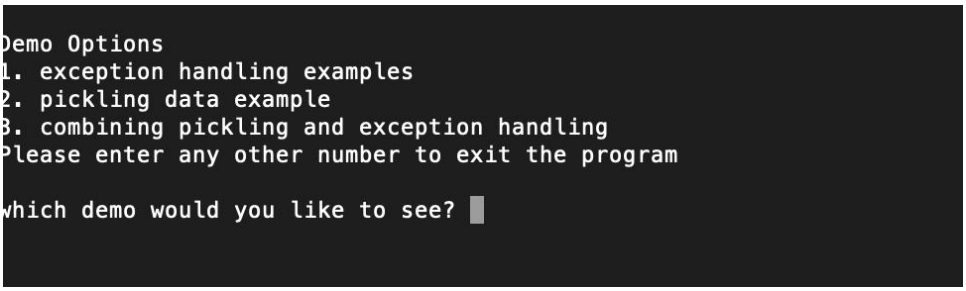

Figure 3: The script running in Terminal.

Citations

"Python Exception Handling." *Programiz*, https://www.programiz.com/python-programming/exception-handling.

"What Is Pickling in Python? (in-Depth Guide)." *Afternerd*, 14 Feb. 2021, https://www.afternerd.com/blog/python-pickle/.

Pankaj. "Python Pickle Example." *DigitalOcean*, DigitalOcean, 3 Aug. 2022, https://www.digitalocean.com/community/tutorials/python-pickle-example.