Comprehensive Python course for AI

Exercises 11 && 12

2023 01 November

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Exercises 11

Score: 350

Question 01 (Tuple)

❖ **Create a Python program with below details:**

- ✓ **Input a count of students.**
- ✓ **Collect each student's unique ID, name, and score into tuples.**
- ✓ **Store these tuples in a list.**
- ✓ **Input a name to search the list.**
- ✓ **Display the matching student's details, if found..**

Question 02 (Set)

❖ **Given two lists: list1 = [1, 2, 3, 4, 5, 6, 6, 7] and list2 = [5, 6, 7, 8, 9], write a program to create a list that contains only the unique elements from both list1 and list2. (using set)**

Question 03 (Set)

❖ **Given a list items containing strings (filenames with extensions) and integers, write a Python program to extract and display the unique file extensions from the filenames in the list. Non-string items should be ignored.**

Question 04 (Tuple)

Given dictionary books with book titles and their authors, perform the following:

```
books = {
    "Book1": {"title": "Learn Python", "authors": ["Author A", "Author B"]},
    "Book2": {"title": "AI Basics", "authors": ["Author C"]}
}
```

1.Shallow Copy Experiment:
•Make a shallow copy of books.

•Add "Author D" to "Book1" in this copy.

•Compare changes in the original dictionary.

2.Deep Copy Experiment:
•Create a deep copy of books.

•Add "Author E" to "Book1" in the deep copy.

•Discuss differences observed between the shallow and deep copy results.

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Exercises 12

Score: 300

Question 01 (File Handling)

❖ **Write a Python program to analyze text files in a directory structure. You are given a directory named root_folder containing various files (.txt, .py, .pdf, .ipynb) and subfolders. Your program should:**

- ✓ Traverse root_folder to find all .txt files.
- ✓ For each .txt file, calculate:
  - ✓ The number of lines.
  - ✓ The number of unique words.
- ✓ Create and write these details into a new file named text_file_analysis.txt.

Question 02 (File Handling)

❖ **Write a program that prompts the user to input a file extension (like "py"), then searches the user's Desktop and its subdirectories for all files with that extension. The program should count and display the total number of matching files found.**

Thanks

Good Luck!

Don't give up on your dreams ☺