

Assignment: Mastering Dictionaries

Objective: Enhance your understanding of dictionaries through practical programming exercises. This assignment focuses on real-world scenarios to improve your skills.

Part 1: Basics of Dictionaries

1. Create and Access a Dictionary

- Create a dictionary to store the following information about a person:
 - Name
 - Age
 - City
- Write a program to:
 - Print the person's name.
 - Add a new key-value pair for the person's occupation.
 - Update the person's city.

2. Updating and Deleting Keys

- Create a dictionary of three programming languages and their release years (e.g., Python: 1991, Java: 1995).
 - Perform the following operations:
 - Update the release year of one language.
 - Add a new language with its release year.
 - Delete one language from the dictionary.
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Part 2: Nested Dictionaries

1. Student Records

- Create a nested dictionary to store details of three students. Each student should have:
 - Name
 - Age
 - A dictionary of subjects with marks (e.g., `{"Math": 85, "Science": 90}`)
- Write a program to:
 - Print the name and age of the second student.
 - Add a new subject with marks for one student.
 - Update the marks of a subject for another student.

2. Dictionary Inside a List

- Create a list of dictionaries, where each dictionary represents a car with:
 - Brand
 - Model
 - Price
 - Write a program to:
 - Print the brand and model of the most expensive car.
 - Update the price of one car.
 - Add a new car to the list.
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Part 3: Looping Through Dictionaries

1. Iterating Over a Dictionary

- Create a dictionary of three countries and their capitals.
- Write a program to:
 - Print each country and its capital using a loop.
 - Check if a specific country is in the dictionary.
 - Print only the capitals using `.values()`.

2. Key-Value Operations

- Create a dictionary of products with their prices.
 - Write a program to:
 - Loop through the dictionary to print each product and its price.
 - Find and print the product with the highest price.
 - Check if a specific product exists in the dictionary.
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Bonus Challenge:

Write a program to:

- Create a dictionary of employees, where each key is an employee ID and the value is another dictionary containing their name, age, and department.
- Find and print the names of all employees in a specific department.