Practical Exercices

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1 Requirements

- Deadline : Friday
- Presentation should be online, explaining each exercise and tested the code.
- You are free to use the material, documentation

2 Basic Dictionary Operations

Exercise 1:

Create a dictionary with the names of three countries as keys and their capitals as values. Write a program to:

- Retrieve the capital of one of the countries.
- Add a new country and its capital to the dictionary.

Exercise 2:

Modify the dictionary from Exercise 1 by updating the capital of one of the countries. Print the updated dictionary.

3 Accessing Values

Exercise 3:

Write a program where the user inputs a key, and the program retrieves the corresponding value from a predefined dictionary. Include error handling if the key does not exist.

Hint: Use the .get() method to provide a default value when the key is not found.

4 Dictionary Methods

Exercise 4:

Given the dictionary:

```
    scores = {"Alice": 90, "Bob": 85, "Charlie": 88}
```

- Check if “Alice” is in the dictionary.
- Retrieve and print all keys and values using the appropriate dictionary methods.

5 Nested Dictionaries

Exercise 5:

Create a nested dictionary to represent a simple database of students. Each key should be a student’s name, and the value should be another dictionary containing their age, grade, and favorite subject. For example:

```
    students = {
    "John": {"age": 15, "grade": "10th", "favorite_subject": "Math"},
    "Jane": {"age": 14, "grade": "9th", "favorite_subject": "Science"}
}
```

Write a program to:

- Add a new student to the database.
- Retrieve and print a specific student’s favorite subject.

6 Advanced Challenges

Exercise 6:

Given a dictionary of fruits and their prices:

```
    fruits = {"apple": 2, "banana": 1, "cherry": 3}
```

Write a program that asks the user to input a fruit and checks if it is available. If it is, print its price; otherwise, display a message saying it is not available.

Exercise 7:

Implement a dictionary-based voting system where:

- The keys are candidates' names, and the values are their respective vote counts.
- Users can cast votes by entering a candidate's name.
- The program updates the vote count and displays the current standings.

7 Github

Exercise:

- Create a GitHub repository named Python_Intermediate.
- Push your code in .py file to that repository.