Exercise 3

1. Create a dictionary with three key-value pairs: 'name': 'Alice', 'age': 25, and 'city': 'New York'.
2. Given person = {'name': 'Bob', 'age': 30}, what is the output of person['name']?
3. Given fruit_prices = {'apple': 2, 'banana': 1, 'cherry': 3}, write a loop to print all keys and their corresponding values.
4. How can you update the value of 'age' to 40 in the dictionary person = {'name': 'Bob', 'age': 30}?
5. Write a function that checks if a given key exists in a dictionary.
6. Given a nested dictionary data = {'student': {'name': 'Alice', 'marks': {'math': 90, 'science': 85}}}, write code to access the science marks.
7. Given two dictionaries, dict1 = {'a': 1, 'b': 2} and dict2 = {'b': 3, 'c': 4}, write code to merge them, ensuring that if a key exists in both dictionaries, the value from dict2 overwrites the value from dict1.
8. Create a list of dictionary. Each dictionary stores name, and marks in 3 subjects.
9. Write Python code to extract:
   The name of the teacher.
   The math score of the student named 'Charlie'.
   The list of all students' names from :

```
data = {
    'class': 'Grade 5',
    'students': [
        {'name': 'Alice', 'subjects': {'math': 85, 'science': 92}},
        {'name': 'Bob', 'subjects': {'math': 78, 'science': 88}},
        {'name': 'Charlie', 'subjects': {'math': 95, 'science': 89}}
    ],
    'teacher': {'name': 'Mrs. Smith', 'subject': 'science'}
}
```