LAB 10: Set and Dictionary

Part A: Learn Set

1. **Multiple way to create set**

    ```
    setA = set()

    setA = {}

    setA = {067069, 076059, 065670, 065590}

    vowel_letters = {'a', 'e', 'i', 'o', 'u'}
    setA = {'King', 01, -2, 'The Land'}
    ```

2. **Duplicate Items in a Set**

    ```
    numbers = {1, 2, 3, 3, 1, 5}
    print(numbers)
    ```

3. **Adding Items in a Set**

    Given a set with items as below:

    ```
    numbers = {145, 100, 65, 79}
    ```

    a. Use `add()` to add 94 to the set
    b. Use `update()` to add list into set [23, 56, 78]

4. **Remove item from set**
    Using the same set elements from Part A:3. Use `discard()` to remove 100.

Part B: Learn Dictionary

1. **Creating a dictionary**
    ```
    learnABC = { "a":"apple","b" :"ball","c":"cat","d":"doll"}

    print(learnABC)
    ```
2. **Valid and invalid dictionary**
    Which one is the valid or invalid dictionary?

    ```
    myData = {
      1: "Python",
      (1, 2): 1,
      3: [1, 2, 3]
    }
    print(myData)
    ```

```
myData = {
  1: "Python",
  [1, 2]: "2, 3",
}
print(myData)
```

3. Duplicate in Dictionary

```
myData = {
    1:"hello",2:22,2:22,3:"hello",3:33
}

print(myData)
```

```
myData = {
    1:"hello",2:22,3:22,4:"hello",5:33
}

print(myData)
```

4. Accessing the dictionary
   a. Using key

```
languages = {"bm": " Bahasa Melayu", "Eng": "English",
"cn": "cantonese"}

print(languages["bm"])
```

   b. Using `items()` method.

```
print(languages.items())
```

Part C: Test yourself!

1. Given a set {1, 2, "Hello", "Python"}. Write a Python program to iterate over the set.
2. Write a Python program to find element in setA but not in setB.
3. Write a Python program to convert string to set, set to list and set to tuple.
4. Using set, write a Python program to count number of vowels from given strings "Programming with Python".
5. Write a Python program to add an item (state: Kedah) into the dictionary. Given a dictionary {name: "Amira", "age": 35}
6. From question 5 above, write a Python program to display all items in the dictionary using loops.
7. Given a values numbers = {145, 100, 65, 79}, write a Python program to sum all the values in the dictionary.

8. Given a dictionary keys and items myData = { 1:"hello",2:22,2:22,3:"hello",3:33}, write a Python program to check if multiple keys exist in a dictionary.