

Practice Problems





1. Turn every item of a list into its square

Input : [2, 4, 5, 6, 7, 8]

Output : [4, 16, 25, 36, 64]

2. Count the characters in String and use Dictionary

Input = "google"

Output = {'g' : 2, 'o' : 2, 'l' : 1, 'e' : 1}

Use character as key and value as count



3. Return a new set of identical items from two sets

Given:

```
set1 = {10, 20, 30, 40, 50}  
set2 = {30, 40, 50, 60, 70}
```

Expected output:

```
{40, 50, 30}
```

4. Update the first set with items that don't exist in the second set

Given:

```
set1 = {10, 20, 30}  
set2 = {20, 40, 50}
```

Expected output:

```
set1 {10, 30}
```



5. Replace list's item with new value if found

You have given a Python list. Write a program to find value 20 in the list, and if it is present, replace it with 200. Only update the first occurrence of an item.

Given:

```
list1 = [5, 10, 15, 20, 25, 50, 20]
```

Expected output:

```
[5, 10, 15, 200, 25, 50, 20]
```



6. Sort a list based on every second element in nested list

Input : [[3, 4] , [1, 2] , [3, -1] , [4, -2]]

Output : [[-2, 4] , [-1, 3] , [2, 1] , [4, 3]]

7. Copy specific elements from one tuple to a new tuple

Write a program to copy elements 44 and 55 from the following tuple into a new tuple.

Given:

```
tuple1 = (11, 22, 33, 44, 55, 66)
```

Expected output:

```
tuple2: (44, 55)
```

8. Convert two lists into a dictionary

```
keys = ['Ten', 'Twenty', 'Thirty']  
values = [10, 20, 30]
```

Expected output:

```
{'Ten': 10, 'Twenty': 20, 'Thirty': 30}
```

9. Count all letters, digits, and special symbols from a given string

Input : "Py#\$234TH"

Output : chars = 4 , digits = 3 , symbols = 2

10. Rename key of a dictionary

Write a program to rename a key `city` to a `location` in the following dictionary.

Given:

```
sample_dict = {  
    "name": "Kelly",  
    "age": 25,  
    "salary": 8000,  
    "city": "New york"  
}
```

Expected output:

```
{'name': 'Kelly', 'age': 25, 'salary': 8000, 'location': 'New york'}
```