`Problem-1:` Write a Python function that takes a list and returns a new list with unique elements of the first list.

Exercise 1:

Input:

```
[1,2,3,3,3,3,4,5]
```

Output:

```
[1, 2, 3, 4, 5]
```

In [ ]:

```
```

`Problem-2:` Write a Python function that accepts a hyphen-separated sequence of words as parameter and returns the words in a hyphen-separated sequence after sorting them alphabetically.

Example 1:

Input:

```
green-red-yellow-black-white
```

Output:

```
black-green-red-white-yellow
```

In [ ]:

```
# Write code here
```

`Problem 3:` Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.

```
Sample String : 'CampusX is an Online Mentorship Program fOr EnginEering studentS.
'
Expected Output :
No. of Upper case characters :  9
No. of Lower case Characters :  47
```

In [ ]:

```
# Write code here
```

`Problem 4:` Write a Python program to print the even numbers from a given list.

```
Sample List : [1, 2, 3, 4, 5, 6, 7, 8, 9]
Expected Result : [2, 4, 6, 8]
```

In [ ]:

```
# Write code here
```

Problem 5: Write a Python function to check whether a number is perfect or not.

A Perfect number is a number that is half the sum of all of its positive divisors (including itself).

Example :

```
The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors
, and 1 + 2 + 3 = 6.
Equivalently, the number 6 is equal to half the sum of all its positive divisors: (
1 + 2 + 3 + 6 ) / 2 = 6.

The next perfect number is 28 = 1 + 2 + 4 + 7 + 14. This is followed by the perfec
t numbers 496 and 8128.
```

In [ ]:

```
# Write code here
```

Problem-6: Write a Python function to concatenate any no of dictionaries to create a new one.

```
Sample Dictionary :
dic1={1:10, 2:20}
dic2={3:30, 4:40}
dic3={5:50,6:60}
Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
```

In [ ]:

```
# Write code here
```

Problem-7 Write a python function that accepts a string as input and returns the word with most occurence.

```
Input:
hello how are you i am fine thank you

Output
you -> 2
```

In [ ]:

```
# Write code here
```

Problem-8 Write a python function that receives a list of integers and prints out a histogram of bin size 10

```
Input:
[13,42,15,37,22,39,41,50]

Output:
{11-20:2,21-30:1,31-40:2,41-50:3}
```

In [ ]:

```
# Write code here
```

Problem-9 Write a python function that accepts a list of 2D co-ordinates and a query point, and then finds the the co-ordinate which is closest in terms of distance from the query point.

```
List of Coordinates
[(1,1),(2,2),(3,3),(4,4)]
Query Point
```

```
(0,0)

Output
Nearest to (0,0) is (1,1)
```

In [ ]:

```
# Write code here
```

`Problem-10` **:Write a python program that receives a list of strings and performs bag of word operation on those strings**

https://en.wikipedia.org/wiki/Bag-of-words_model

In [ ]:

```
# Write code here
```

`Problem 11:` Write a Python program to add three given lists using Python map and lambda.

In [ ]:

```
# Write code here
```

`Problem-12:` Write a Python program to create a list containing the power of said number in bases raised to the corresponding number in the index using Python map.

`Input:`

```
list1 = [1,2,3,4,5,6]
```

`Output:`

```
[1,2,9,64,625,-]
```

In [ ]:

```
# Write code here
```

`Problem-13` Using filter() and list() functions and .lower() method filter all the vowels in a given string.

In [ ]:

```
# Write code here
```

`Problem-14` **: Use reduce to convert a 2D list to 1D**

In [ ]:

```
# Write code here
```

`Problem 15` **- A dictionary contains following information about 5 employees:**

- **First name**
- **Last name**
- **Age**
- **Grade(Skilled,Semi-skilled,Highly skilled)**
  Write a program using map/filter/reduce to a list of employees(first name + last name) who are highly skilled

In [ ]:

```
# Write code here
employees = [
    {
        'fname':'Nitish',
        'lname':'Singh',
        'age' : 33,
        'grade':'skilled'
    },
    {
        'fname':'Ankit',
        'lname':'Verma',
        'age' : 34,
        'grade':'semi-skilled'
    },
    {
        'fname':'Neha',
        'lname':'Singh',
        'age' : 35,
        'grade':'highly-skilled'
    },
    {
        'fname':'Anurag',
        'lname':'Kumar',
        'age' : 30,
        'grade':'skilled'
    },
    {
        'fname':'Abhinav',
        'lname':'Sharma',
        'age' : 37,
        'grade':'highly-skilled'
    }

]
```

In [ ]:

```
list(map(lambda x:x['fname'] + ' ' + x['lname'],list(filter(lambda x:True if x['grade']
== 'highly-skilled' else False,employees))))
```

Out[ ]:

```
['Neha Singh', 'Abhinav Sharma']
```

In [ ]: