Tasks

Task1:
Write a Python program using function to count the number of strings from a given list of strings. The string length is 2 or more and the first and last characters are the same.

Task 2
Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples.
Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]
Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]

Task3:
Here is your list of elements [1,0,6,2,0.8,9,'Jamal','Adeel','Hamza','Ali','Jawad','C','Q',P]
Write a lambda expression which genernates these results
Result 1:[0,0.8,1,2,6,9]
Result 2:['Jamal','Adeel','Hamza','Ali','Jawad']
Result 3:["Adeel","Ali","Hamaza","Jamal","Jawad"]
Result 4: ["C","P","Q"]
Result5: Multiply each number of list with 5

Task 4:
Create a file with name Try.txt and write code of python in function structure which what nested functions
1. Def read()
You can display the result of upper question in it

2. Def write()
You will save the result of all question in files with with question number

Task1:

Write a Python program using function to count the number of strings from a given list of strings. The string length is 2 or more and the first and last characters are the same.

In [15]:
```
string_list = ['hello', 'level', 'world', 'noon', 'python']

def count_str(string_list):

    count = 0

    for string in string_list:
        if len(string) >= 2 and string[0] == string[-1]:
            count += 1

    return count
result = count_str(string_list)
print("Number of strings:", result)
```

```
Number of strings: 2
```

Task 2

Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples.
Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]
Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]

In [16]:
```
def sort_tuples(Sample_list):
    sorted_tuples = sorted(Sample_list, key=lambda x: x[-1])
    return sorted_tuples

# Test the function
Sample_list = [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]
result = sort_tuples(Sample_list)
print("Sorted List:", result)
```

```
Sorted List: [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]
```

Task3:

```
Here is your list of elements [1,0,6,2,0.8,9,'Jamal','Adeel','Hamza','Ali','Jawad','C','Q',P]
Write a lambda expression which genernates these results
Result 1:[0,0.8,1,2,6,9]
Result 2:['Jamal','Adeel','Hamza','Ali','Jawad']
Result 3:["Adeel","Ali","Hamaza","Jamal","Jawad"]
Result 4: ["C","P","Q"]
Result5: Multiply each number of list with 5
```

In [23]:

```
elements = [1, 0, 6, 2, 0.8, 9, 'Jamal', 'Adeel', 'Hamza', 'Ali', 'Jawad', 'C', 'Q', 'P']


result1 = sorted(filter(lambda x: isinstance(x, (int, float)), elements))


result2 = list(filter(lambda x: isinstance(x, str) and len(x) != 1, elements))


result3 = sorted(filter(lambda x: isinstance(x, str) and len(x) != 1, elements), reverse=True)


result4 = list(filter(lambda x: isinstance(x, str) and len(x) == 1, elements))


result5 = list(map(lambda x: x * 5 if isinstance(x, (int, float)) else x, elements))

# Print the results
print("Result 1:", result1)
print("Result 2:", result2)
print("Result 3:", result3)
print("Result 4:", result4)
print("Result 5:", result5)
```

```
Result 1: [0, 0.8, 1, 2, 6, 9]
Result 2: ['Jamal', 'Adeel', 'Hamza', 'Ali', 'Jawad']
Result 3: ['Jawad', 'Jamal', 'Hamza', 'Ali', 'Adeel']
Result 4: ['C', 'Q', 'P']
Result 5: [5, 0, 30, 10, 4.0, 45, 'Jamal', 'Adeel', 'Hamza', 'Ali', 'Jawad', 'C', 'Q', 'P']
```

Task 4:

Create a file with name Try.txt and write code of python in function structure which what nested functions
1. Def read()
You can display the result of upper question in it

2. Def write()
You will save the result of all question in files with with question number.
Also apply try and except in case file does not exist then exception case will run.

In [45]:
```
def read_txt():
    try:
        with open("Try.txt","r") as file:
            result = file.read()

    except Exception as e:
        print(f"Error in retrieve file {e}")


def write_txt():
    try:
        with open("Try.txt","w") as file:
            elements = [1, 0, 6, 2, 0.8, 9, 'Jamal', 'Adeel', 'Hamza', 'Ali', 'Jawad', 'C', 'Q', 'P']


            result1 = sorted(filter(lambda x: isinstance(x, (int, float)), elements))


            result2 = list(filter(lambda x: isinstance(x, str) and len(x) != 1, elements))


            result3 = sorted(filter(lambda x: isinstance(x, str) and len(x) != 1, elements), reverse=True)


            result4 = list(filter(lambda x: isinstance(x, str) and len(x) == 1, elements))


            result5 = list(map(lambda x: x * 5 if isinstance(x, (int, float)) else x, elements))

            # Print the results
            file.write("Result 1:", result1)
            file.write("Result 2:", result2)
            file.write("Result 3:", result3)
            file.write("Result 4:", result4)
            file.write("Result 5:", result5)


    except Exception as e:
        print(f"Error occur {e}")
```

```
write()
read()
```

```
Results saved to 'Try.txt'
Result 1: [0, 0.8, 1, 2, 6, 9]
Result 2: ['Jamal', 'Adeel', 'Hamza', 'Ali', 'Jawad', 'C', 'Q', 'P']
Result 3: ['Q', 'P', 'Jawad', 'Jamal', 'Hamza', 'C', 'Ali', 'Adeel']
Result 4: ['C', 'Q', 'P']
Result 5: [5, 0, 30, 10, 4.0, 45, 'Jamal', 'Adeel', 'Hamza', 'Ali', 'Jawad', 'C', 'Q', 'P']
```

In [ ]:

In [ ]: