

# LAB 1: Data Structures in Python

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## **TASK#1:**

### **CODE:**

```
rivers=[{'name': 'Nile','length':4157},
        {'name': 'Yangtze','length':3434},
        {'name': 'Murray-Darling','length':2310},
        {'name': 'Volga','length':2290},
        {'name': 'Mississippi','length':2540},
        {'name': 'Amazon','length':3915}]
for i in range(len(rivers)):
    print(rivers[i]['name'])
    print('Length of',rivers[i]['name'],'river in kilometers is ',rivers[i]['length']*1.6)
m=0
for j in range(len(rivers)):
    m+=rivers[j]['length']
print(m)
for x in range(len(rivers)):
    if (rivers[x]['name'][0]=='M'):
        print(rivers[x]['name'])
```

### **RESULT:**

```
Nile
Length of Nile river in kilometers is  6651.200000000001
Yangtze
Length of Yangtze river in kilometers is  5494.400000000001
Murray-Darling
Length of Murray-Darling river in kilometers is  3696.0
Volga
Length of Volga river in kilometers is  3664.0
Mississippi
Length of Mississippi river in kilometers is  4064.0
Amazon
Length of Amazon river in kilometers is  6264.0
18646
Murray-Darling
Mississippi
```

## TASK#2:

### CODE:

```
List1=[1.0, 2.0, 4.5]
List2=[2.0, 4.5, 5.0]
def overlap(List1, List2):
    z=[]
    for l in List1:
        if l in List2:
            z.append(l)
    print(z)

def join(List1, List2):
    result=[]
    for i in List1:
        if i not in result:
            result.append(i)
    for i in List2:
        if i not in result:
            result.append(i)
    print(result)
```

### RESULT:

```
In [2]: overlap(List1,List2)
[2.0, 4.5]

In [3]: join(List1, List2)
[1.0, 2.0, 4.5, 5.0]
```

### TASK#3:

#### CODE:

```
spicy_foods = [
    {
        "name": "Green Curry",
        "cuisine": "Thai",
        "heat_level": 9,
    },
    {
        "name": "Buffalo Wings",
        "cuisine": "American",
        "heat_level": 3,
    },
    {
        "name": "Mapo Tofu",
        "cuisine": "Sichuan",
        "heat_level": 6,
    },
]

def get_names(spicy_foods):
    m=[]
    for i in spicy_foods:
        m+= [i['name']]
    return m

def get_spiciest_foods(spicy_foods):
    m=[]
    for i in spicy_foods:
        if i['heat_level']>=5:
            m+= [i]
    return m

def print_spicy_foods(spicy_foods):
    for i in spicy_foods:
        n=i['name']
        c=i['cuisine']
        h=i['heat_level']
        print(n, '(', c, ')', 'Heat Level:', ('🌶️')*h)

def get_spicy_food_by_cuisine(spicy_foods, cuisine):
    for i in spicy_foods:
        c=i['cuisine']
        if c==cuisine:
            print(i)
def print_spiciest_foods(spicy_foods):
```

```

for i in spicy_foods:
    if i['heat_level']>5:
        n=i['name']
        c=i['cuisine']
        h=i['heat_level']
        print(n,('(',c,')','Heat Level:',(🌶️)*h)

def get_average_heat_level(spicy_foods):
    m=0
    for i in spicy_foods:
        m+=i['heat_level']
    print('Average heat level of all spicy foods is',m/len(spicy_foods))

def create_spicy_food(spicy_foods, spicy_food):
    print(spicy_foods+[spicy_food])

spicy_food= {
'name': 'Griot',
'cuisine': 'Haitian',
'heat_level': 10,
}
cuisine="Thai"

def main():
    print("Calling all the functions in main")
    print(get_names(spicy_foods))
    print(get_spiciest_foods(spicy_foods))
    print_spicy_foods(spicy_foods)
    get_spicy_food_by_cuisine(spicy_foods, cuisine)
    print_spiciest_foods(spicy_foods)
    get_average_heat_level(spicy_foods)
    create_spicy_food(spicy_foods, spicy_food)

if __name__=="__main__":
    main()

```

## RESULT:

```

Calling all the functions in main
['Green Curry', 'Buffalo Wings', 'Mapo Tofu']
[{'name': 'Green Curry', 'cuisine': 'Thai', 'heat_level': 9}, {'name': 'Mapo Tofu', 'cuisine': 'Sichuan', 'heat_level': 6}]
Green Curry ( Thai ) Heat Level: 🌶️🌶️🌶️🌶️🌶️🌶️
Buffalo Wings ( American ) Heat Level: 🌶️🌶️🌶️
Mapo Tofu ( Sichuan ) Heat Level: 🌶️🌶️🌶️🌶️🌶️
{'name': 'Green Curry', 'cuisine': 'Thai', 'heat_level': 9}
Green Curry ( Thai ) Heat Level: 🌶️🌶️🌶️🌶️🌶️🌶️
Mapo Tofu ( Sichuan ) Heat Level: 🌶️🌶️🌶️🌶️🌶️
Average heat level of all spicy foods is 6.0
[{'name': 'Green Curry', 'cuisine': 'Thai', 'heat_level': 9}, {'name': 'Buffalo Wings', 'cuisine': 'American', 'heat_level': 3},
{'name': 'Mapo Tofu', 'cuisine': 'Sichuan', 'heat_level': 6}, {'name': 'Griot', 'cuisine': 'Haitian', 'heat_level': 10}]

```