LAB 1: Data Structures in Python

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Task 1:

```
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"])

total=0
for j in range(len(rivers)):
    total+=rivers[j]["length"]
print(total)

for name in range(len(rivers)):
    if (rivers[name]["name"][0])=='M':
     print(rivers[name]["name"])

for i in range(len(rivers)):
    print(rivers[i]["name"])
    print("Length in kilometres of", rivers[i]["name"], rivers[i]["length"]*1.6)
```

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

Task 2:

```
def overlap(x,y):
    return[i for i in x if i in y]

print(overlap([1.0,2.0,4.5], [2.0,4.5,5.0]))

def joint(x,y):
    z = [j for j in x]
    z += [j for j in y if j not in x]
    return z

print(joint([1.0,2.0,4.5], [2.0,4.5,5.0]))
```

```
(((IPdb [3]))): runfile('C:/Users/333zi/untitle
[2.0, 4.5]
[1.0, 2.0, 4.5, 5.0]
```

Task 3:

```
def get_names(spicy_foods):
 f1=[]
 for i in spicy_foods:
  f1=f1+ [i['name']]
 return f1

def get_spiciest_foods(spicy_foods):
 f2=[]
 for i in spicy_foods:
  if i['heat_level']>=5:
   f2=f2+[i]
 return f2

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

def get_spicy_food_by_cuisine(spicy_foods,cuisine):
 for i in spicy_foods:
  f4=i['cuisine']
 if f4==cuisine:
  print(i)

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

def get_average_heat_level(spicy_foods):
 f5=0
 for i in spicy_foods:
  f5=f5+i['heat_level']
 print('Average heat level of all spicy foods is',f5/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(get_names(spicy_foods))
print(get_spiciest_foods(spicy_foods))
print(print_spicy_foods(spicy_foods))
print(get_spicy_food_by_cuisine(spicy_foods, cuisine))
print(print_spiciest_foods(spicy_foods))
print(get_average_heat_level(spicy_foods))
print(create_spicy_food(spicy_foods, spicy_food))

if __name__=="__main__":
  main()
```