CS250: Data structures and algorithms

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**Lab 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}]

#Task 1

for name in rivers: print(name["name"])

#Task 2

total = 0

for length in rivers:

total += length["length"]

print("total length :",total)

for name in rivers:

if name["name"].startswith("M"):

print(name)

for i in range(len(rivers)):

print(rivers[i]["name"])

print("Length in kilometers of", rivers[i]["name"], rivers[i]["length"]\*1.6)

Task 2:

def overlap(u, v):

return [x for x in u if x in v]

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

def join(u, v):

bucket = [x for x in u]

bucket += [x for x in v if x not in u]

return bucket

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

#task3

def get\_names(spicy\_foods):

names = []

for food in spicy\_foods:

names.append(food["name"])

return names

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,

},

]

print(get\_names(spicy\_foods))

def get\_spiciest\_foods(spicy\_foods):

spiciest\_foods = []

for food in spicy\_foods:

if food["heat\_level"] > 5:

spiciest\_foods.append(food)

return spiciest\_foods

print(get\_spiciest\_foods(spicy\_foods))

def print\_spicy\_foods(spicy\_foods):

for food in spicy\_foods:

heat\_level\_emojis = "🌶" \* food["heat\_level"]

print(f"{food['name']} ({food['cuisine']}) | Heat Level: {heat\_level\_emojis}.")

print(print\_spicy\_foods(spicy\_foods))

def get\_spicy\_food\_by\_cuisine(spicy\_foods, cuisine):

for food in spicy\_foods:

if food["cuisine"].lower() == cuisine.lower():

return food

return None







