Lab assignment 8

U24cs076

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# 1a. Sum all items in a list

lst = [1, 2, 3, 4, 5]

sum\_lst = sum(lst)

print(sum\_lst)

# 1b. Multiply all items in a list

multiply\_lst = 1

for num in lst:

    multiply\_lst \*= num

print(multiply\_lst)

# 1c. Largest number from a list

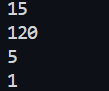
max\_lst = max(lst)

print(max\_lst)

# 1d. Smallest number from a list

min\_lst = min(lst)

print(min\_lst)



# 2. Count strings with same first and last character

string\_list = ['abbba', 'xybdmz', 'cvnhf', 'aba', '1221']

count = sum(1 for s in string\_list if len(s) >= 2 and s[0] == s[-1])

print(count)



# 3. Check if two lists have common members

lst1 = [1, 2, 3]

lst2 = [4, 5, 6]

has\_common = any(x in lst2 for x in lst1)

print(has\_common)



# 4a. Create a tuple and print one item

tuple1 = (1, 2, 3, 4)

print(tuple1[0])

# 4b. Create a tuple with different data types

tuple2 = (1, "Hello", 3.14, True)

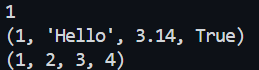
print(tuple2)

# 4c. Add an item to a tuple

tuple3 = (1, 2, 3)

tuple3 += (4,)

print(tuple3)



# 5. Replace the last value of tuples in a list

tuple\_list = [(10, 20, 40), (40, 50, 60), (70, 80, 90)]

tuple\_list = [t[:-1] + (100,) for t in tuple\_list]

print(tuple\_list)



# 6. Remove empty tuples

tuple\_data = [(), (), ('',), ('a', 'b'), ('a', 'b', 'c'), ('d')]

tuple\_data = [t for t in tuple\_data if t]

print(tuple\_data)



# 7. Sort a tuple by float element

tuple\_data2 = [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')]

tuple\_data2.sort(key=lambda x: float(x[1]), reverse=True)

print(tuple\_data2)



# 8. Find max and min in a set

s = {10, 20, 30, 40, 50}

max\_s = max(s)

min\_s = min(s)

print(max\_s, min\_s)



# 9. Check if a value exists in a set

s = {10, 20, 30, 40, 50}

value = 30

exists\_in\_set = value in s

print(exists\_in\_set)



# 10. Remove duplicates from a list

lst3 = ['apple', 'banana', 'apple', 'orange', 'banana']

lst3 = list(set(lst3))

print(lst3)



# 11. Concatenate dictionaries

dic1 = {1: 10, 2: 20}

dic2 = {3: 30, 4: 40}

dic3 = {5: 50, 6: 60}

dic\_combined = {\*\*dic1, \*\*dic2, \*\*dic3}

print(dic\_combined)



# 12. Remove a key from a dictionary

dic = {1: 'a', 2: 'b', 3: 'c'}

dic.pop(2, None)

print(dic)



# 13. Create combinations of letters

data = {'1': ['a', 'b'], '2': ['c', 'd']}

combinations = [x + y for x in data['1'] for y in data['2']]

print(combinations)



# 14. Create a dictionary from a string

string = 'a9prtovpcr'

dict\_from\_string = {char: string.count(char) for char in string}

print(dict\_from\_string)



# 15. Get top three items in a shop

shop\_data = {'item1': 45.50, 'item2': 35, 'item3': 41.30, 'item4': 55, 'item5': 24}

top\_items = sorted(shop\_data.items(), key=lambda x: x[1], reverse=True)[:3]

print(top\_items)

