Unit4_Assessment

December 18, 2024

1 Unit 4 Career Preparation: Technical Assessment

1.1 Problem 1

Write a script that: * Reads the file `problem1.txt`. * Adds each line to a new list. * Prints the new list.

[5]:
```
lines_list = []

with open('problem1.txt', 'r') as file:
    for line in file:
        lines_list.append(line.strip())

print(lines_list)
```

```
['item1', 'item2', 'item3', 'item4', 'item5']
```

1.2 Problem 2

Write a script that: * Reads the file `problem2.txt`. * Counts how many times 192.168.1.1 appears in the file. * Prints the result.

[19]:
```
ip_addr = ("192.168.1.1")

ip_count = 0

with open('problem2.txt','r') as file:
    for ip in file:

        ip_count += ip.count(ip_addr)

print(ip_count)
```

```
5
```

1.3 Problem 3

Write a script using a function (`dedupe`) that: * Takes a list `l = [1,5,7,2,4,3,5,1,6,2,6]`. * Returns a new list that contains all of the elements from the first list, excluding duplicates.

[7]:
```python
def dedupe(input_list):
    seen = set()

    dedupe_list = []
    for item in input_list:
        if item not in seen:
            dedupe_list.append(item)
            seen.add(item)
    return dedupe_list

line = [1,5,7,2,4,3,5,1,6,2,6]


result = dedupe(line)

print("original list:", line)
print("list without duplicates:", result)
```

```
original list: [1, 5, 7, 2, 4, 3, 5, 1, 6, 2, 6]
list without duplicates: [1, 5, 7, 2, 4, 3, 6]
```

1.4 Problem 4

Write a program (using a function) that: * Asks the user for a long string containing multiple words. * Prints back the same string, except with the words in reverse order.

For example, if the user types the string: 'My name is robert', it will print 'robert is name My'.

[2]:
```python
def reverse_words(input_string):

    words = input_string.split()
    reverse_words = words[::-1]
    return " ".join(reverse_words)

user_input = input("please enter a string." )

result = reverse_words(user_input)
print(result)
```

```
please enter a string. hi my name is Azir
```

```
Azir is name my hi
```

1.5 Problem 5

Write a script that: * Opens the file `problem5.txt`. * Counts each port and puts the results in a dictionary.

[9]:
```
def count_ports(filename):

    port_counts = {}
    try:
        with open(filename, 'r') as file:
            for line in file:
                ports = line.strip().split()
                for port in ports:
                    if port.isdigit():
                        port_counts[port] = port_counts.get(port, 0) + 1
    except FileNotFoundError:
        print(f"Error: The file '{filename}' was not found.")
    except Exception as e:
        print(f"An error occurred: {e}")
    return port_counts


filename = "problem5.txt"


port_count_results = count_ports(filename)
print("Port counts:", port_count_results)
```

```
Port counts: {'80': 7, '443': 3, '22': 5, '21': 2, '25': 3, '389': 1, '3389': 1,
'445': 3}
```

[ ]:
```

```