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CYBER SECURITY PREPARATION PROGRAM
CSPP
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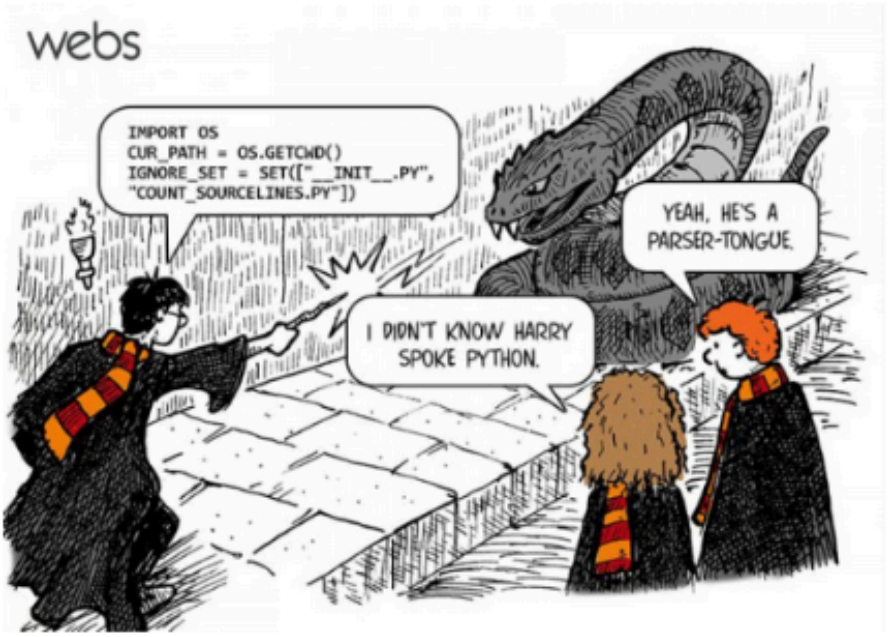
קורס למתחילים בסייבר
CSPP
מבואות סייבר
ניהול רשתות ובקר SOC
Python Final Project

Python Essentials - Mark V.

Welcome to the end of the course - Final Exam.



A joke to make you calm down:

What's the best way to code the snake game? In *python* script

Mission

Build a programm to support the following features (allowing the user to choose each time):

- Once executed print a welcome page using python asci Art (module!).
- Provide a Menu of option to the user
    1. Get a text file name, read (open) it and return the top 5 reoccuring words
    2. Provide the full information about my PC (Operation system, Ram, Storage... (bonus: get IP details)).
    3. Test internet connection. (Ping google.com - return only the answer - connected or not)
    4. Find how many times the word exists in a text file. (Get input from the user for a word and location of the file).
    5. (Bonus) Create an HTTP server of the "Pictures" folder of windows. (Check SimpleHTTPServer module)
    6. Exit the script

Assigment instructions

- Make sure the script is working and the output is correct!
- Add a screenshot of the script execution and examples
- Make sure to have fun when you write it
- You can (should) use everything from the course (loops, regex, ifs, cases, functions, modules...)
- No comments to your code - no score for your work...Don't forget to mention all neccesary modules for the script to run "requirments.txt"
- Mega Bonus: Implement with Tkinter (or any other Gui helper, and pack it as an executable)
- Keep showing the menu to the user until he decides to exit (using option number "6")

Necessarily imports for proper functionality

IMPORTS: install / import these following packages

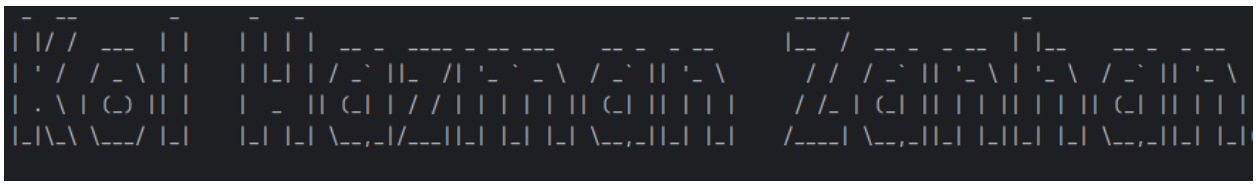
```
# Imports (cmd pip install)

import os
import platform
import psutil
import socket
import re
from collections import Counter
from art import text2art
import http.server
import socketserver
import urllib.request
```

1. Print a welcome page using python asci Art

CODE: displays welcome message in ASCII art using the `text2art` method.

```
# The Function to display welcome page
def welcome_page():
    print(text2art("Kol    Hazman    Zanhan,    Kol    Hazman    Muhan"))
```

RESULT:



2. Provide a menu of options for the user

CODE: displays a menu with various text, system, network options.

```
# The Function to display menu
def display_menu():
    print("\nMenu:")
    print("1. Get Top 5 Reoccurring Words in a Text File")
    print("2. Get Full Information About My PC")
    print("3. Test Internet Connection")
    print("4. Find How Many Times a Word Exists in a Text File")
    print("5. Create HTTP Server of the 'Pictures' Folder")
    print("6. Exit")
```

RESULT:

```
Menu:
1. Get Top 5 Reoccurring Words in a Text File
2. Get Full Information About My PC
3. Test Internet Connection
4. Find How Many Times a Word Exists in a Text File
5. Create HTTP Server of the 'Pictures' Folder
6. Exit
Choose an option:
```

3. Open a TXT file and return the Top 5 reoccurring words

CODE: this code extracts all words from a text string, then filters top 5.

```
# The Function to get top 5 reoccurring words in a text file
def top_5_words(file_name):
    with open(file_name, 'r') as file:
        text = file.read().lower()
        words = re.findall( pattern: r'\b\w+\b', text)
        word_counts = Counter(words)
        top_5 = word_counts.most_common(5)
        for word, count in top_5:
            print(f"{word}: {count}")
```

RESULT:

```
Choose an option: 1
Enter the text file name: C:\Users\alexc\Desktop\TheCode.txt
print: 27
the: 22
import: 20
f: 14
file: 13
```

4. Provide full information about my PC

CODE: gather & displays info about your PC system, hardware, network.

```
# The Function to get full information about PC, including IP address
def pc_info():
    print(f"Operating System: {platform.system()}")
    print(f"OS Version: {platform.version()}")
    print(f"Processor: {platform.processor()}")
    print(f"Machine: {platform.machine()}")
    print(f"Hostname: {socket.gethostname()}")
    print(f"IP Address: {socket.gethostbyname(socket.gethostname())}")
    print(f"RAM: {psutil.virtual_memory().total / (1024**3):.2f} GB")
    print(f"Storage: {psutil.disk_usage('/').total / (1024**3):.2f} GB")
```

RESULT:

```
Choose an option: 2
Operating System: Windows
OS Version: 10.0.19045
Processor: AMD64 Family 23 Model 96 Stepping 1, AuthenticAMD
Machine: AMD64
Hostname: DESKTOP-GMNSSAP
IP Address: 192.168.47.1
RAM: 31.42 GB
Storage: 475.95 GB
```

5. Test internet connection by pinging google.com

CODE: Pings Google to check internet connection.

```python
# The Function to test internet connection
def test_internet():
    try:
        # Determine the ping command based on the OS
        command = "ping -c 1 www.google.com" if platform.system().lower() != "windows" else "ping -n 1 www.google.com"
        # Execute the ping command
        response = os.system(command)
        # Check the response
        if response == 0:
            print("Connected")
        else:
            print("Not Connected")
    except Exception as e:
        print("Not Connected")
        print(f"Error: {e}")
```

RESULT:

```
Choose an option: 3

Pinging www.google.com [2a00:1450:4028:802::2004] with 32 bytes of data:
Reply from 2a00:1450:4028:802::2004: time=7ms

Ping statistics for 2a00:1450:4028:802::2004:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 7ms, Maximum = 7ms, Average = 7ms
Connected
```

6. Find how many times does a word exist in a text file

CODE: Counts how many times a word appears in a text file.

```python
# The Function to find how many times a word exists in a text file
def word_count(file_name, word):
    with open(file_name, 'r') as file:
        text = file.read().lower()
        count = text.split().count(word.lower())
        print(f"The word '{word}' occurs {count} times in the file.")
```

RESULT:

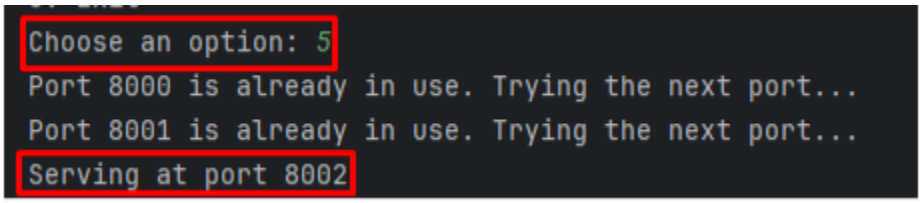
```
Choose an option: 4
Enter the text file name: C:\Users\alexc\Desktop\TheCode.txt
Enter the word to count: import
The word 'import' occurs 20 times in the file.
```

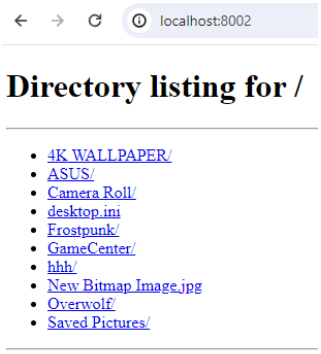
7. Create an HTTP server of the pictures folder

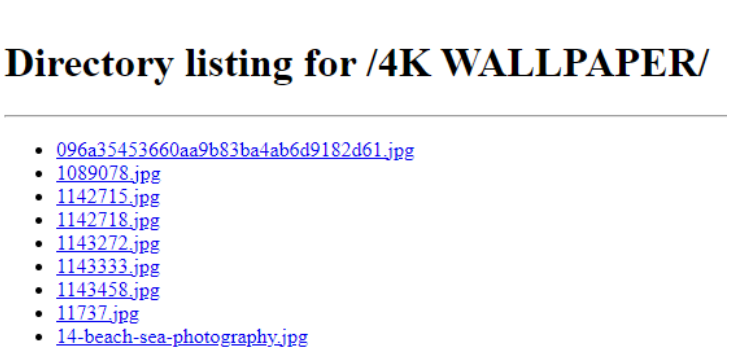
CODE: Shows pictures folder on your computer in a web browser.

```python
# The Function to create an HTTP server of the "Pictures" folder
def create_http_server():
    os.chdir(os.path.expanduser("~/Pictures"))
    PORT = 8000
    Handler = http.server.SimpleHTTPRequestHandler

    while True:
        try:
            with socketserver.TCPServer( server_address: ("", PORT), Handler) as httpd:
                print(f"Serving at port {PORT}")
                httpd.serve_forever()
        except OSError as e:
            if e.errno == 10048:  # Port is already in use
                print(f"Port {PORT} is already in use. Trying the next port...")
                PORT += 1
            else:
                print(f"Error: {e}")
                break
```

RESULT:







8. Provide an option to exit the script

CODE: This code exits the program if the user chooses option "6".

```
        elif choice == "6":
            print("Exiting...")
            break
```

RESULT:

```
Menu:
1. Get Top 5 Reoccurring Words in a Text File
2. Get Full Information About My PC
3. Test Internet Connection
4. Find How Many Times a Word Exists in a Text File
5. Create HTTP Server of the 'Pictures' Folder
6. Exit
Choose an option: 6
Exiting...

Process finished with exit code 0
```

PROJECT SOURCES - Class Recordings, Bard, ChatGPT, YouTube, Google, Programming brother, Brain.