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Code:

Assignment2/Assignment2.ipynb at main · dxm62040ucm/Assignment2 (github.com)

Video:

https://drive.google.com/file/d/14IIzggO0TwwT5PDfMCWV_1nv2eapaa9E/view?usp=sharing

Assignment-2

1)

```python
#Write a program that takes two strings from the user: first_name, last_name. Pass these variables to
#fullname function that should return the (full name)
def fullname(first_name, last_name):
    full_name = f"{first_name} {last_name}"
    return full_name

def string_alternative(full_name):
    return full_name[::2]

def main():
    # Taking user input
    first_name = input("Enter your first name: ")
    last_name = input("Enter your last name: ")

    # Getting the full name using the fullname function
    full_name = fullname(first_name, last_name)
    print(f"Full Name: {full_name}")

    # Using the string_alternative function to get every other character
    alternative_chars = string_alternative(full_name)
    print(f"Every Other Character: {alternative_chars}")

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

```
Enter your first name: Good
Enter your last name: evening
Full Name: Good evening
Every Other Character: Go vnn
```

Given Program takes first name and last name as input. Both names are concatenated and alternative characters in the sentence are collected in the final result.

2)

```python
#Write a python program to find the wordcount in a file (input.txt) for each line and then print the output.
# Finally store the output in output.txt file.
def count_word_occurrences(line, word_count):
    words = line.split()

    for word in words:
        word = word.strip()
        word_count[word] = word_count.get(word, 0) + 1

def main():
    input_file_path = "input.txt"
    output_file_path = "output.txt"

    with open(input_file_path, 'r') as input_file:
        lines = input_file.readlines()

    # Output the original lines
    print("Input:")
    for line in lines:
        print(line.strip())

    # Count word occurrences for each line
    print("\nWord_Count:")
    total_word_count = {}
    for line in lines:
        count_word_occurrences(line, total_word_count)

    # Output the word count for each word
    for word, count in total_word_count.items():
        print(f"{word}: {count}")

    # Store the output in output.txt
    with open(output_file_path, 'w') as output_file:
        output_file.write("Input:\n")
        output_file.writelines(lines)
        output_file.write("\nWord_Count:\n")
        for word, count in total_word_count.items():
            output_file.write(f"{word}: {count}\n")

    print(f"\nOutput saved to {output_file_path}")

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

```
Input:
Python Course
Deep Learning Course

Word_Count:
Python: 1
Course: 2
Deep: 1
Learning: 1

Output saved to output.txt
```

I have Created a program, which counts number of words in a sentence. Input text file contains the sentence and output file contains words with count.

3)

```python
#Write a program, which reads heights (inches.) of customers into a list and convert these
#heights to centimeters in a separate list using:
def convert_heights_nested(heights_in_inches):
    heights_in_cm = []
    for height in heights_in_inches:
        height_cm = height * 2.54
        heights_in_cm.append(round(height_cm, 2))
    return heights_in_cm

def convert_heights_list_comprehension(heights_in_inches):
    return [round(height * 2.54, 2) for height in heights_in_inches]

def main():
    # Input heights as a list
    heights_in_inches = [float(input()) for i in range(int(input("Number of inputs: ")))]
    print(f"L1: {list(heights_in_inches)}")
    # Convert heights using nested loop
    heights_in_cm_nested = convert_heights_nested(heights_in_inches)

    # Convert heights using list comprehension
    heights_in_cm_comprehension = convert_heights_list_comprehension(heights_in_inches)

    # Output results
    print("\nOutput using Nested Loop:", heights_in_cm_nested)
    print("Output using List Comprehension:", heights_in_cm_comprehension)

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

```
Number of inputs: 4
150
155
145
148
L1: [150.0, 155.0, 145.0, 148.0]

Output using Nested Loop: [381.0, 393.7, 368.3, 375.92]
Output using List Comprehension: [381.0, 393.7, 368.3, 375.92]
```

I created a program that reads heights in inches from customers, stores them in a list, and converts them to centimeters using both a nested loop and a list comprehension.

The program then displays the original heights in inches, the converted heights using a nested loop, and the converted heights using list.