

Assignment-2

GITHUB URL:

<https://github.com/varshathatikonda23>

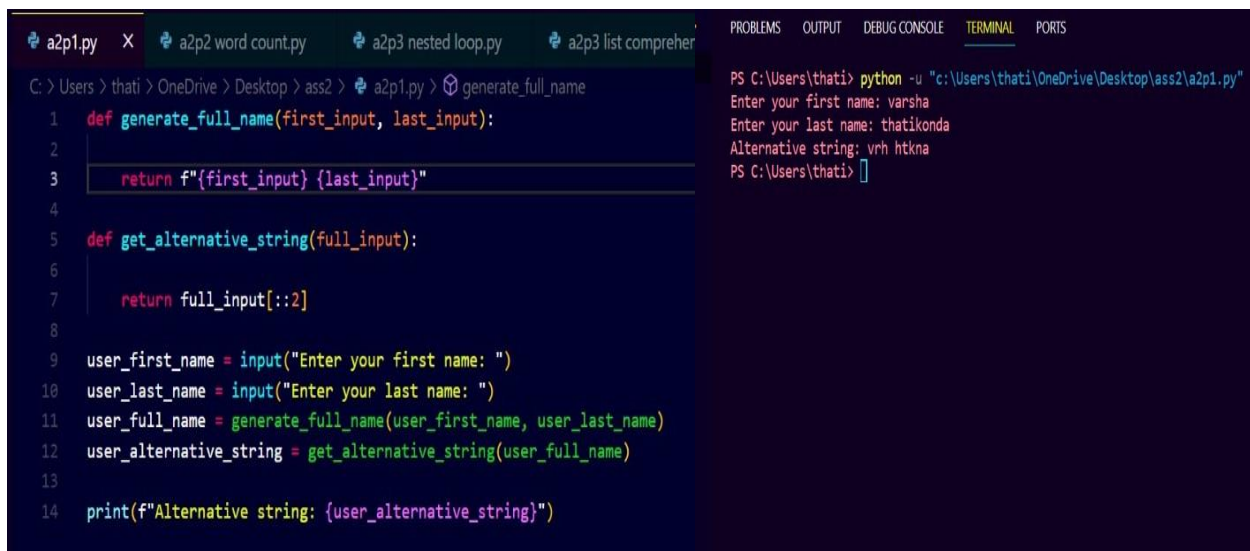
2nd assignment 2 URL:

<https://github.com/varshathatikonda23/Neural-Ass-2>

recording:

<https://drive.google.com/file/d/11YvcBIGCLYrmgUOMrDhVikjS8sgEDaxa/view?usp=sharing>

1. Write a program that takes two strings from the user: first name, last name. Pass these variables to full name function that should return the (full name).



```
a2p1.py X a2p2 word count.py a2p3 nested loop.py a2p3 list comprehen
C: > Users > thati > OneDrive > Desktop > ass2 > a2p1.py > generate_full_name
1 def generate_full_name(first_input, last_input):
2
3     return f"{first_input} {last_input}"
4
5 def get_alternative_string(full_input):
6
7     return full_input[::-2]
8
9 user_first_name = input("Enter your first name: ")
10 user_last_name = input("Enter your last name: ")
11 user_full_name = generate_full_name(user_first_name, user_last_name)
12 user_alternative_string = get_alternative_string(user_full_name)
13
14 print(f"Alternative string: {user_alternative_string}")

PS C:\Users\thati> python -u "c:\Users\thati\OneDrive\Desktop\ass2\a2p1.py"
Enter your first name: varsha
Enter your last name: thatikonda
Alternative string: vrh htkna
PS C:\Users\thati>
```

2. Write a python program to find the wordcount in a file (input.txt) for each line and then

print the output. o Finally store the output in output.txt file.

```
a2p1.py a2p2 word count.py X a2p3 nested loop.py a2p3 list comprehension.py
C: > Users > thati > OneDrive > Desktop > ass2 > a2p2 word count.py > ...
1  from collections import Counter
2
3  def calculate_word_counts_per_line(input_filepath, output_filepath):
4      """Calculates word counts for each line in an input file and writes them, along with the original lines, to an ou
5
6      try:
7          with open(input_filepath, 'r') as input_file:
8              input_lines = input_file.readlines()
9
10             word_counts_per_line = [(line.strip(), len(line.split())) for line in input_lines]
11
12             with open(output_filepath, 'w') as output_file:
13                 for line, word_count in word_counts_per_line:
14                     output_file.write(f"{line}\nWord_Count:\n")
15                     for word, count in Counter(line.split()).items():
16                         output_file.write(f"{word}: {count}\n")
17                     output_file.write(f"Total_Words: {word_count}\n\n")
18
19             print(f"Word counts along with the original lines written to '{output_filepath}' successfully.")
20
21     except FileNotFoundError:
22         print(f"Error: Input file '{input_filepath}' not found.")
23     except IOError as e:
24         print(f"Error: An error occurred while reading or writing files: {e}")
25
26 if __name__ == "__main__":
27     input_filepath = "input.txt"
28     output_filepath = "output.txt"
29     calculate_word_counts_per_line(input_filepath, output_filepath)
30
```

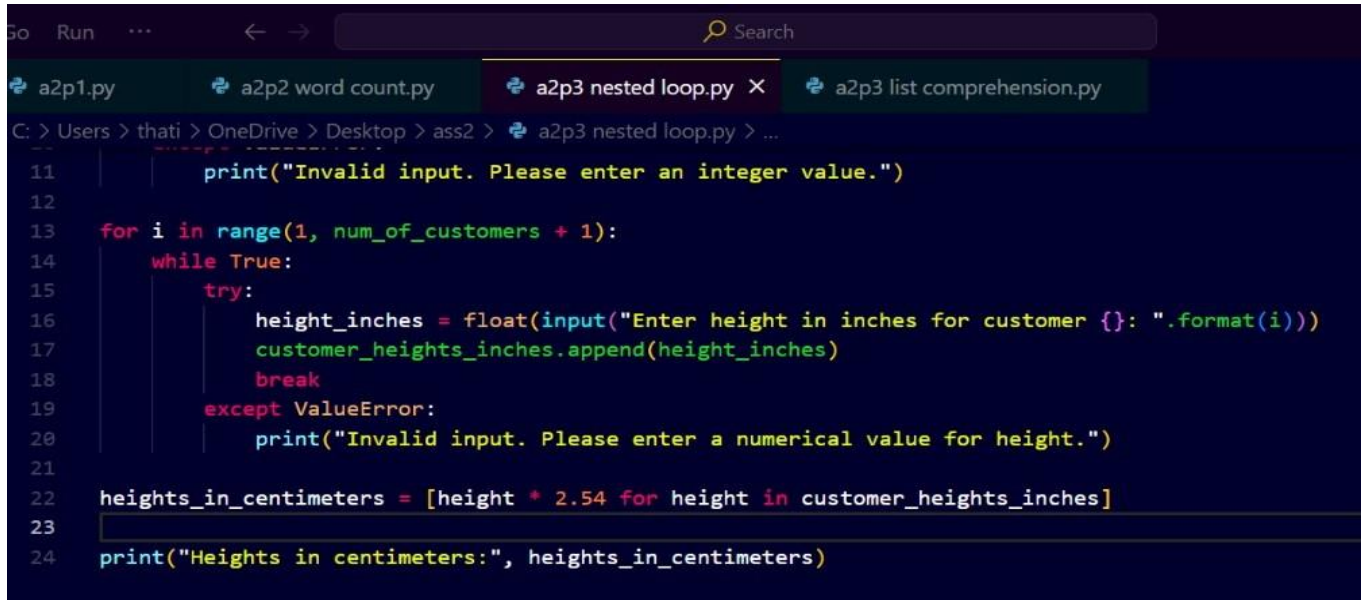
output:

```
Go Run ... Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\thati> python -u "c:\Users\thati\OneDrive\Desktop\ass2\a2p2 word count.py"
Word counts along with the original lines written to 'output.txt' successfully.
PS C:\Users\thati>
```

output	input
Python Course Deep Learning Course	Python Course Word_Count: Python: 1 Course: 1 Total_Words: 2 Deep Learning Course Word_Count: Deep: 1 Learning: 1 Course: 1 Total_Words: 3

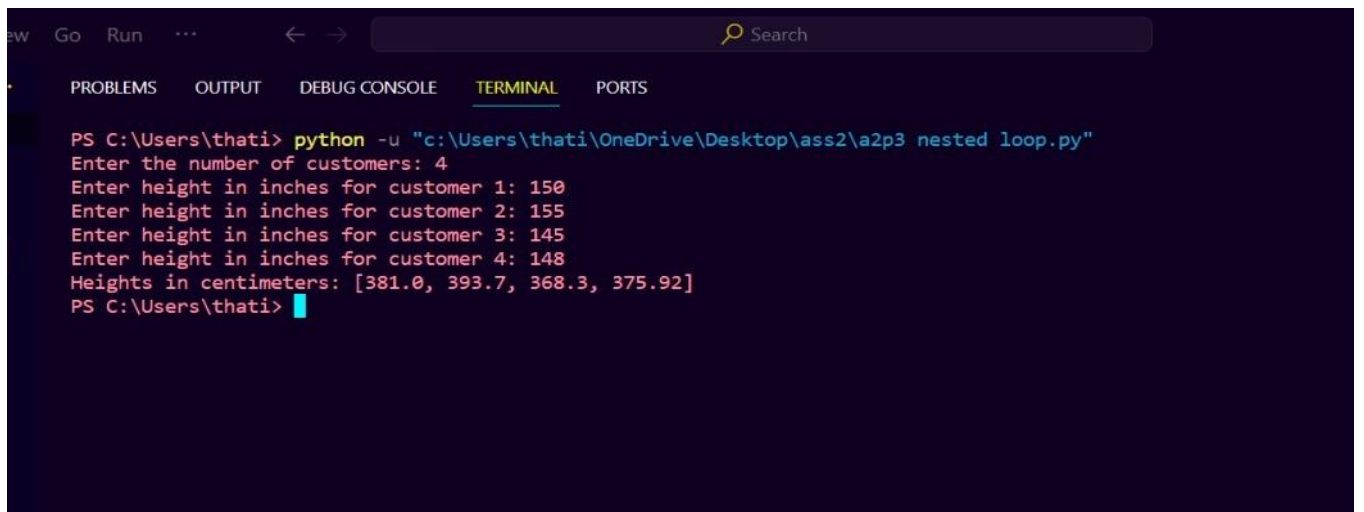
3. Write a program, which reads heights (inches.) of customers into a list and convert these heights to centimeters in a separate list using:

1) Nested Interactive loop.



```
Go Run ... Search
a2p1.py a2p2 word count.py a2p3 nested loop.py X a2p3 list comprehension.py
C: > Users > thati > OneDrive > Desktop > ass2 > a2p3 nested loop.py > ...
11     print("Invalid input. Please enter an integer value.")
12
13 for i in range(1, num_of_customers + 1):
14     while True:
15         try:
16             height_inches = float(input("Enter height in inches for customer {}: ".format(i)))
17             customer_heights_inches.append(height_inches)
18             break
19         except ValueError:
20             print("Invalid input. Please enter a numerical value for height.")
21
22 heights_in_centimeters = [height * 2.54 for height in customer_heights_inches]
23
24 print("Heights in centimeters:", heights_in_centimeters)
```

Output:



```
PS C:\Users\thati> python -u "c:\Users\thati\OneDrive\Desktop\ass2\a2p3 nested loop.py"
Enter the number of customers: 4
Enter height in inches for customer 1: 150
Enter height in inches for customer 2: 155
Enter height in inches for customer 3: 145
Enter height in inches for customer 4: 148
Heights in centimeters: [381.0, 393.7, 368.3, 375.92]
PS C:\Users\thati>
```

2) List comprehensions.

```
Go Run ... Search
a2p1.py a2p2 word count.py a2p3 nested loop.py a2p3 list comprehension.py X
C: > Users > thati > OneDrive > Desktop > ass2 > a2p3 list comprehension.py > ...
1  def convert_to_centimeters(height_inches):
2      return height_inches * 2.54
3  while True:
4      try:
5          num_clients = int(input("Enter the number of clients: "))
6          if num_clients <= 0:
7              raise ValueError("Please enter a positive integer for the number of clients.")
8          break
9      except ValueError as error_msg:
10         print(f"Error: {error_msg}")
11 heights_inches_list = []
12 for i in range(num_clients):
13     while True:
14         try:
15             client_height = float(input(f"Enter height in inches for client {i + 1}: "))
16             if client_height <= 0:
17                 raise ValueError("Please enter a positive number for height.")
18             heights_inches_list.append(client_height)
19             break
20         except ValueError as error_msg:
21             print(f"Error: {error_msg}")
22 heights_centimeters_list = [convert_to_centimeters(height) for height in heights_inches_list]
23 average_height_inches = sum(heights_inches_list) / num_clients
24 average_height_centimeters = sum(heights_centimeters_list) / num_clients
25 print("\nHeights in inches_list)ches:", heights_inches_list)
26 print("Heights in centimeters:", heights_centimeters_list)
27 print(f"\nAverage Height (in inches): {average_height_inches:.2f} inches")
28 print(f"Average Height (in centimeters): {average_height_centimeters:.2f} cm")
```

Output:

```
w Go Run ... Search
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\thati> python -u "c:\Users\thati\OneDrive\Desktop\ass2\a2p3 list comprehension.py"
Enter the number of clients: 4
Enter height in inches for client 1: 150
Enter height in inches for client 2: 155
Enter height in inches for client 3: 145
Enter height in inches for client 4: 148

Heights in inches_list)ches: [150.0, 155.0, 145.0, 148.0]
Heights in centimeters: [381.0, 393.7, 368.3, 375.92]

Average Height (in inches): 149.50 inches
Average Height (in centimeters): 379.73 cm
PS C:\Users\thati>
```