Git-hub link: Sabitha-C/Neural-networks (github.com)

1. **Code:**

```
def fullname(first_name, last_name):
    full_name = first_name + " " + last_name
    return full_name

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

def main():
    first_name = input("First_name = ")
    last_name = input("Last_name = ")
    full_name = fullname(first_name, last_name)
    print("Full_Name:", full_name)
    str_alt = string_alternative(full_name)
    print("Every other character in the full_name string:", str_alt)
main()
```

Output:

```
First_name = Sabitha
Last_name = Cheekla
Full_Name: Sabitha Cheekla
Every other character in the full_name string: SbtaCeka
```

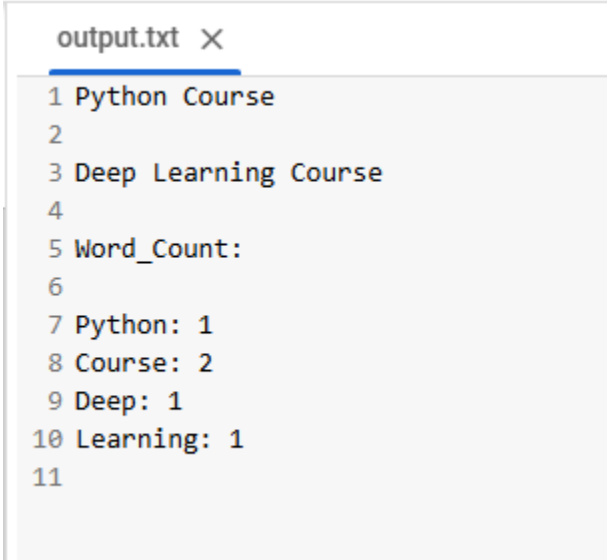
Description: I defined two functions, fullname and string_alternative. In fullname, I concatenated first_name and last_name to form and return full_name, while in string_alternative, I used slicing [::2] on full_name to return an alternative string. In main, I prompted the user for their first and last names, used fullname to get and print full_name, then called string_alternative to print every other character, and finally executed the program by calling main.

2. Code:

```
def file_word_count(line, word_count):
    for word in line.split():
        word_count[word] = word_count.get(word, 0) + 1

def main():
    input_file = '/content/drive/My Drive/input.txt'
    output_file = '/content/drive/My Drive/output.txt'

    word_count = {}
    lines = []

    try:
        with open(input_file, 'r') as input:
            for line in input:
                line = line.strip()
                if line:
                    lines.append(line)
                    file_word_count(line, word_count)

        with open(output_file, 'w') as output:
                if len(lines) > 0:
                  output.write(lines[0] + '\n\n')
                if len(lines) > 1:
                  output.write(lines[1] + '\n\n')

                  output.write("Word_Count:\n\n")
                  for word, count in word_count.items():
                    output.write(word + ": " + str(count) + "\n")


        print("Output written to" + output_file)

    except FileNotFoundError:
        print("Error: File " + input_file + "not found.")

main()
```

```
Output written to/content/drive/My Drive/output.txt
```

Output:



Description: I defined two functions, file_word_count and main. In file_word_count, I split a line into words and updated their counts in the word_count dictionary. In main, I specified paths of input and output files, then using try–except block I tried to open the input file and I appended the lines using append method and updated word counts using file_word_count, and wrote the first two lines and word counts to the output file, handled the file not found errors in except block and called main function to execute the program.

3.Code1: Nested Interactive loop:

```
def inches_to_cm(height):
    return round(height * 2.54, 2)

def main():
    height1 = [150,155, 145, 148]
    height2 = []
    for height in height1:
        height2.append(inches_to_cm(height))

    print("Heights in inches:", height1)
    print("Heights in centimeters:", height2)

main()
```

Output:

```
Heights in inches: [150, 155, 145, 148]
Heights in centimeters: [381.0, 393.7, 368.3, 375.92]
```

Description:

I defined a function inches_to_cm that converts a height in inches to centimeters by multiplying it by 2.54 and rounding the result. In the main function, I created a list height1 containing heights in inches and an empty list height2 for the converted heights. I used a for loop to iterate over each height in height1, converting each height to centimeters using the inches_to_cm function, and appended the converted values to height2 using method. Finally, I printed both the original heights in inches and the converted heights in centimeters and called main function to execute the program.

Code2: List Comprehensions:

```
def inches_to_cm(height):
    return round(height * 2.54, 2)
height = [150, 155, 145, 148]
height1 = [inches_to_cm(height) for height in height]

print("L1:", height)
print("Output:", height1)
```

Output:

```
L1: [150, 155, 145, 148]
Output: [381.0, 393.7, 368.3, 375.92]
```

Description: I defined a function inches_to_cm that converts a height in inches to centimeters using the formula and rounded it to 2 decimal points. Then, I created a list height with heights in inches and used a list comprehension to convert each height to centimeters and stored the results in height1. Finally, I printed both the original height list and the converted height1 list.