***Week 1 Tasks – Syntax & Indentation***

1. ***Fix badly-indented code***.

Example of bad indentation:

python

def greet():

print("Hello")

print("Welcome")

***Fixed with comments:***

python

def greet(): # Define a function called greet

print("Hello") # Print greeting

print("Welcome") # Print welcome message

2. Add comments explaining each step (as shown above).

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***Variables & Types***

***1. Collect user profile & print typed summary***

python

name = input("Enter your name: ")

age = int(input("Enter your age: "))

height = float(input("Enter your height in meters: "))

print(f"Name: {name} (Type: {type(name)})")

print(f"Age: {age} (Type: {type(age)})")

print(f"Height: {height} m (Type: {type(height)})")

***2. Swap two variables without a temp variable***

python

a = 5

b = 10

a, b = b, a # Swapping without temp variable

print("a =", a)

print("b =", b)

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***Casting & I/O***

1. ***Read three numbers; output average***

```python

n1 = float(input("Enter first number: "))

n2 = float(input("Enter second number: "))

n3 = float(input("Enter third number: "))

average = (n1 + n2 + n3) / 3

print("Average:", average)

***\*2. Convert minutes to hours + minutes\****

python

minutes = int(input("Enter total minutes: "))

hours = minutes // 60

remaining\_minutes = minutes % 60

print(f"{minutes} minutes = {hours} hour(s) and {remaining\_minutes} minute(s)")

```

***Operators***

1. ***BMI Calculator***

python

weight = float(input("Enter weight in kg: "))

height = float(input("Enter height in meters: "))

bmi = weight / (height \*\* 2)

print("Your BMI is:", round(bmi, 2))

2***. Simple Interest***

python

p = float(input("Enter principal: "))

r = float(input("Enter rate of interest: "))

t = float(input("Enter time in years: "))

si = (p \* r \* t) / 100

print("Simple Interest:", si)

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***Strings***

1. ***Username from Full Name***

python

full\_name = input("Enter full name: ").lower().strip()

name\_parts = full\_name.split()

username = name\_parts[0][0] + name\_parts[-1]

print("Username:", username)

***2. Vowel/Consonant Counter***

python

text = input("Enter text: ").lower()

vowels = "aeiou"

vowel\_count = sum(1 for c in text if c in vowels)

consonant\_count = sum(1 for c in text if c.isalpha() and c not in vowels)

print("Vowels:", vowel\_count, "Consonants:", consonant\_count)

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***Conditionals***

1. ***Grade Calculator***

python

marks = float(input("Enter marks (out of 100): "))

if marks >= 90:

grade = "A"

elif marks >= 75:

grade = "B"

elif marks >= 60:

grade = "C"

elif marks >= 40:

grade = "D"

else:

grade = "F"

print("Grade:", grade)

Password Strength Classifier

python

password = input("Enter password: ")

length = len(password)

if length >= 8 and any(c.isdigit() for c in password) and any(c.isupper() for c in password):

print("Strong password")

elif length >= 6:

print("Moderate password")

else:

print("Weak password")

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***Loops***

1. ***Multiplication Table***

python

n = int(input("Enter a number: "))

for i in range(1, 11):

print(f"{n} x {i} = {n \* i}")

2***. Sum Numbers Divisible by 3***

python

limit = int(input("Enter a limit: "))

total = 0

for i in range(1, limit + 1):

if i % 3 == 0:

total += i

print("Sum of numbers divisible by 3:", total)

***CLI Unit Converter using menus, loops, and conditionals in Python:***

```python

def length\_converter():

print("\nLength Converter")

print("1. Meters to Kilometers")

print("2. Kilometers to Meters")

choice = input("Choose conversion: ")

val = float(input("Enter value: "))

if choice == '1':

print(f"{val} m = {val / 1000} km")

elif choice == '2':

print(f"{val} km = {val \* 1000} m")

else:

print("Invalid choice.")

def weight\_converter():

print("\nWeight Converter")

print("1. Kilograms to Grams")

print("2. Grams to Kilograms")

choice = input("Choose conversion: ")

val = float(input("Enter value: "))

if choice == '1':

print(f"{val} kg = {val \* 1000} g")

elif choice == '2':

print(f"{val} g = {val / 1000} kg")

else:

print("Invalid choice.")

def temperature\_converter():

print("\nTemperature Converter")

print("1. Celsius to Fahrenheit")

print("2. Fahrenheit to Celsius")

choice = input("Choose conversion: ")

val = float(input("Enter value: "))

if choice == '1':

print(f"{val}°C = {(val \* 9/5) + 32}°F")

elif choice == '2':

print(f"{val}°F = {(val - 32) \* 5/9}°C")

Main loop

while True:

print("\n=== CLI Unit Converter ===")

print("1. Length")

print("2. Weight")

print("3. Temperature")

print("4. Exit")

option = input("Select category: ")

if option == '1':

length\_converter()

elif option == '2':

weight\_converter()

elif option == '3':

temperature\_converter()

elif option == '4':

print("Exiting...")

break

else:

print("Invalid selection. Try again."