TECHNIK NEST
INNOVATIVE MINDS, NESTING SUCCESS

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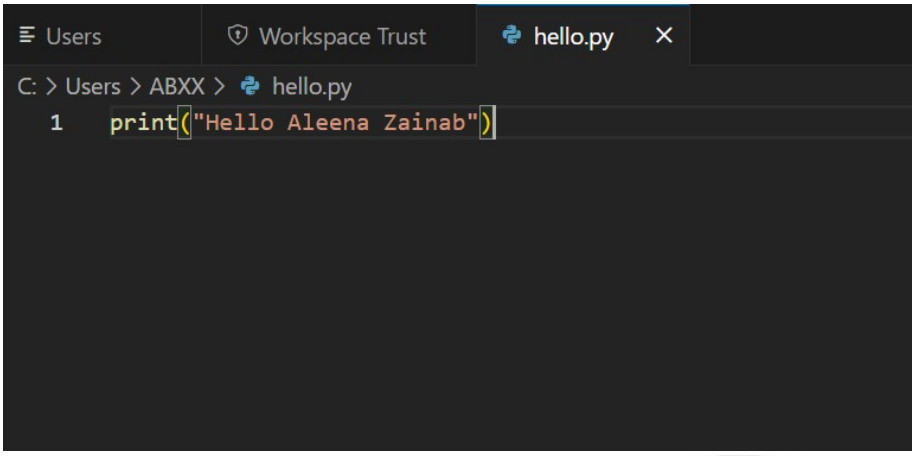
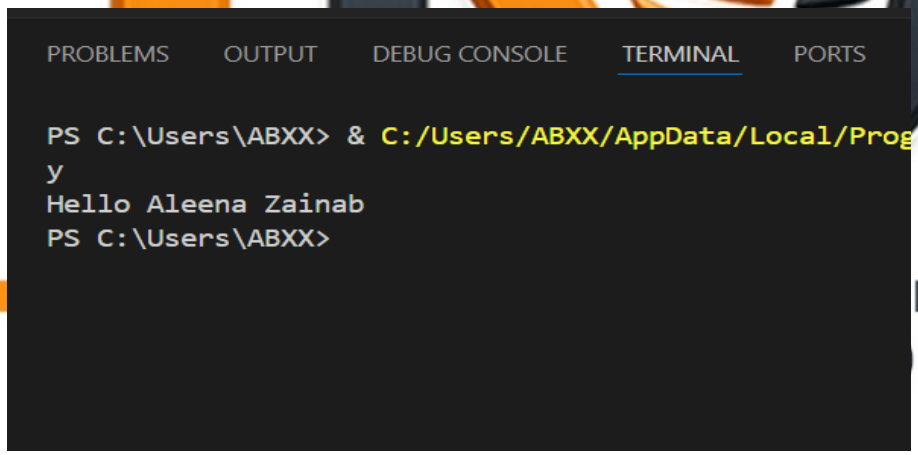
Task no: Task 1

Question: 1

TASK # 1 :Run hello script printing your name;



OUTPUT:



Task 2: Fixed badly intended code and comments:

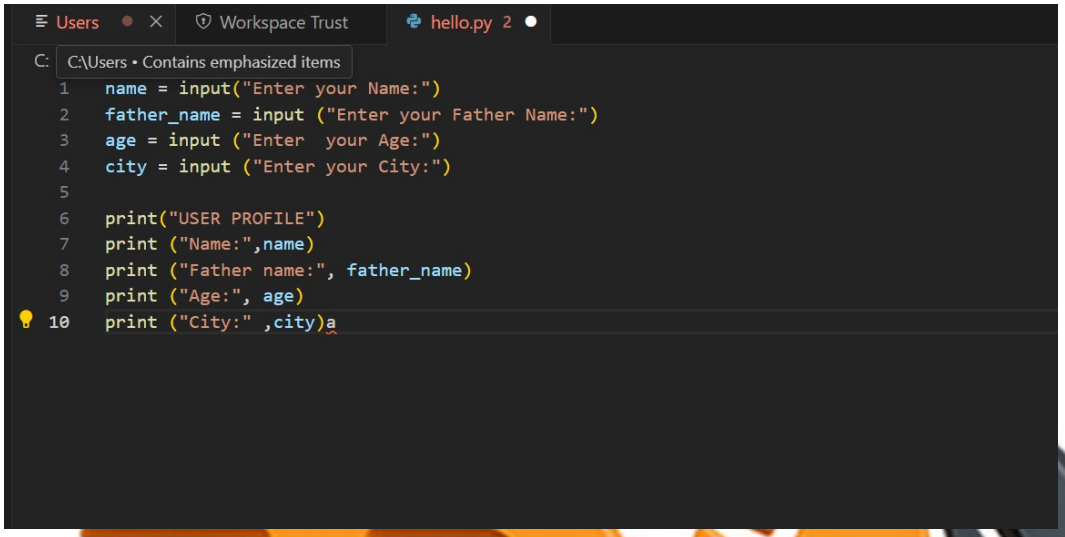
```
C: > Users > ABXX > hello.py > ...
1   for i in range(3): #its for loop and will run in sequence {0,1,2} also block(:)means the print is in loop
2       print("indented loop",i) # intended by 4 spaces beacause it is in the loop + every time when loop will
3       # start the value in coma will repeat and new value of i will be wriiten in output
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

indented loop 2
PS C:\Users\ABXX> & C:/Users/ABXX/AppData/Local/Programs/Python/Python313/python.exe c:/Users/ABXX/hello.py
indented loop 0
indented loop 1
indented loop 2
```

Task 3: PART 1 Collect user profile and print typed summary



Output:

```
Enter your Name:Aleena Zainab
Enter your Father Name:Sami Ullah
Enter  your Age:19
Enter your City:Chawal
USER PROFILE
Name: Aleena Zainab
Father name: Sami Ullah
Age: 19
City: Chawal
```

PART 2: Swap two variables without temp variable:

Task 3:

```
C: > Users > ABXX > hello.py > ...
  1    #user sy value lyn gy
  2    x = int(input("Enter the first number:"))
  3    y = int(input ("Enter the second number:"))
  4    #now swap withoud 3rd variable
  5    x = x + y
  6    y = x - y
  7    x = x - y
  8    #swap krny ky liyay
  9    print("After swap:")
 10    print("First number:", x)
 11    print("Second number:", y)
```

Output:

```
SyntaxError: '(' was never closed
PS C:\Users\ABXX> & C:/Users/ABXX/AppData
Enter the first number:4
Enter the second number:95
After swap:
First number: 95
Second number: 4
```

Task 4:

Part 1: Read three numbers; output average.

```
C: > Users > ABXX > hello.py > ...
1    # User se 3 numbers lena
2    x = float(input("Enter first number: "))
3    y= float(input("Enter second number: "))
4    z = float(input("Enter third number: "))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\ABXX> & C:/Users/ABXX/AppData/Local/Programs/Python/Pytho
Enter first number: 5
Enter second number: 9
Enter third number: 6
Average of three numbers is: 6.666666666666667
```

Output:

Part 2: Convert minutes to hours + minutes.

```
I: > Users > ABXX > hello.py > ...
1   # Take minutes from the user
2   minutes = int(input("How many minutes? "))
3
4   # Conversion logic apply krna
5   hours = minutes // 60
6   left_minutes = minutes % 60
7
8   # Result showw
9   print("Time:", hours, "hours and", left_minutes, "minute")
10
```

Output:

Task 5:

Part 1: BMI calculator:

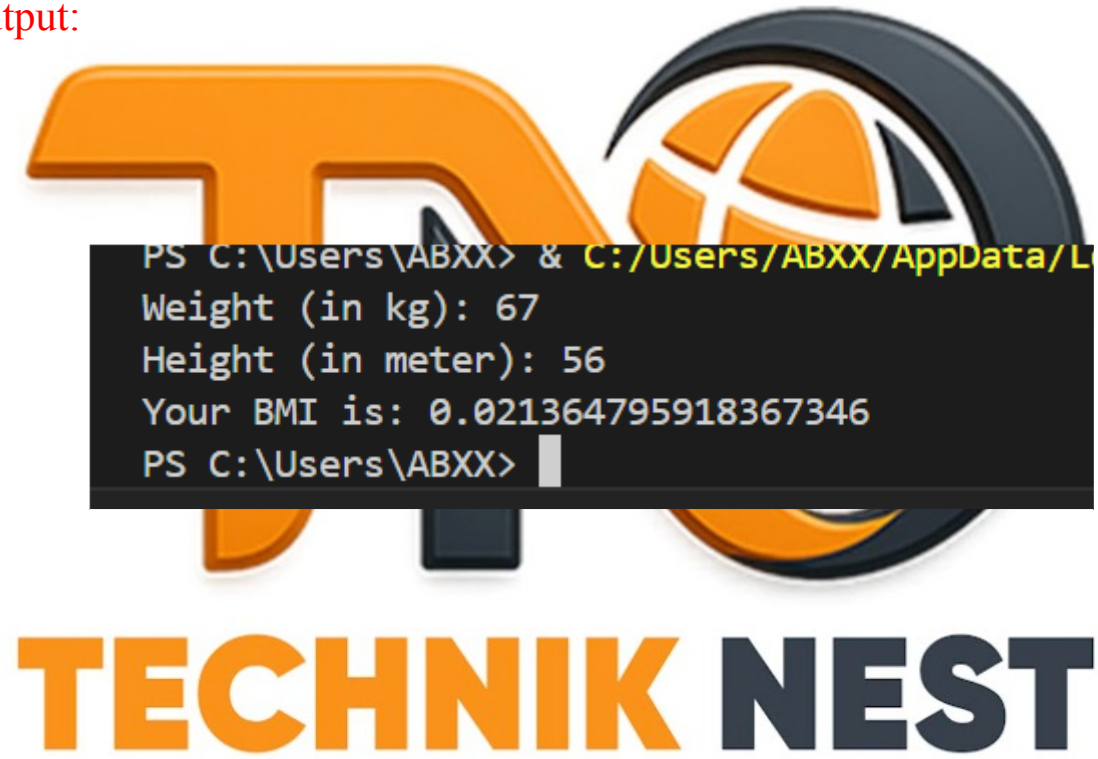
```python
# User se weight aur height lo
a = float(input("Weight (in kg): "))
b = float(input("Height (in meter): "))

# BMI ka formula
bmi = a / (b ** 2)

# Result
print("Your BMI is:", bmi)

```

Output:



TECHNIK NEST

PART 2: Simple interest calculator

```
> Users > ABXX > hello.py > ...
1   # Asal amount, rate aur time user Lyna hy
2   Actual_money= float(input("How much money is given: "))
3   interest = float(input("interest rate "))
4   time_limit = float(input("Gave for how many years/: "))
5
6   # S.I ka formula
7   profit = (Actual_money * interest * time_limit) / 100
8
9   # Output print
10  print("Your interest is:", profit)
```

Output:

```
How much money is given: 4000
interest rate 1000
Gave for how many years/: 2
Your interest is: 80000.0
PS C:\Users\ABXX>
```

Task 6: : Username builder from full name and vowel / consonant counter

```python
# Take user full name
full_name = input("Write your full namme: ")

# name convert in to small letter so comparison will be easy
full_name_lower = full_name.lower()

# Name parts split with space
parts = full_name_lower.split()

# make user name  with first and second part  + len is used due to more  number of parts
if len(parts) >= 2:
    username = parts[0] + "." + parts[1]
else:
    username = parts[0]

# Username print
print("Username:", username)

# Vowels list
vowels = 'aeiou'

# Counters start
vowel_count = 0
consonant_count = 0

#  check every letter
for char in full_name_lower:
    if char.isalpha():  # if this is the letter then (space, . ignore)
```

Output:

```
Write your full namme: Aleena Zainab
Username: aleena.zainab
number of vowel: 7
consonent of vowel: 5
PS C:\Users\ABXX>
```

Task#7:

Part 1 : Grade Calculator

```python
# Step 1: Take marks from user
marks = int(input("Write you marks(1 to 100): "))

# Step 2: Conditions check
if marks >= 90:
    print("A+ Grade")
elif marks >= 80:                    #elseif is written as elif in python
    print("A Grade")
elif marks >= 70:
    print("B Grade")
elif marks >= 60:
    print("C Grade")
elif marks >= 50:
    print("D Grade")
else:
    print("Fail")
```

Output:

```
Write you marks(1 to 100): 45
Fail
PS C:\Users\ABXX> & C:/Users/ABX
```

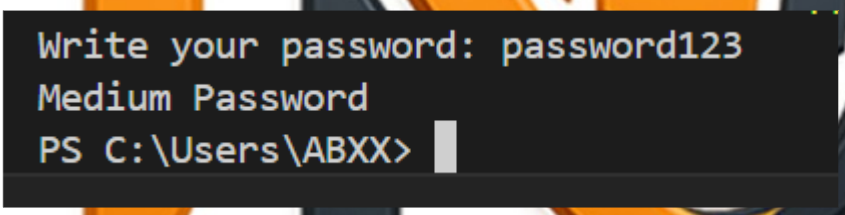
Part 2: Password strength checking

```python
# Step 1: Take Password
password = input("Write your password: ")

# Step 2: Check strength
if len(password) < 6:         #len is used to check the strenght of the characters
    print("Weak Password")
elif password.isalnum():    #.isalnum is used to check if only characters and num are use
    print("Medium Password")
elif any(char in "!@#$%^&*()_+-=~" for char in password):
    print("Strong Password")  # if symbol are used it is strong password
else:
    print("Can't check password strength")

```

Output:



Task # 8:

Part 1: Multiplication Table:

C: > Users > ABXX > hello.py > ...

```python
# Multiplication Table
num = int(input("which number's table you want? "))

for i in range(1, 11):      # Loop will be from 1 to 10
    result = num * i
    print(f"{num} x {i} = {result}")

```

Output:

Part 2: Sum of numbers divisible by three:

```python
# Sum of numbers divisible by 3
#end is used first taky baqi code ka pat ho loop kitni bar chalna hy
end = int(input("From 1 to which number you want to check? "))

total = 0

for i in range(1, end + 1):
    if i % 3 == 0:          # Agar number 3 se divide hota hai
        total += i          # Total me add karo

print("The sum of numbers divided by three are:", total)

```

Output:

```
From 1 to which number you want to check? 67
The sum of numbers divided by three are: 759
PS C:\Users\ABXX>
```

Challenge Task

- **CLI unit converter: length, temperature, loops and conditions**

Code;

```python
print("Welcome to Unit Converter!\n")  # Program ka welcome message, \n nayi line ke liye

while True:  # Jab tak user exit nahi karta, loop repeat hota rahega
    print("What would you like to convert?")  # User se poocha ja raha hai kya convert kro
    print("1. Length (meters to kilometers)")  # 1: Lambai convert karni hai
    print("2. Weight (kg to grams)")  #  2: Wazan convert karna hai
    print("3. Temperature (Celsius to Fahrenheit)")  #  3: temp convert karni hai
    print("4. Exit")  # 4: Program band karna

    choice = input("Enter your choice (1-4): ")  # User se input lena  hy (1 se 4 tak)

    if choice == "1":  # Agar user ne length conversion choose kiya tu
        meters = float(input("Enter length in meters: "))  # User se meters me lambai leni
        km = meters / 1000  # 1000 meters = 1 kilometer
        print("Length in kilometers:", km)  # Result

    elif choice == "2":  # Agar user ne weight conversion choose kiya phir
        kg = float(input("Enter weight in kilograms: "))  # User se kg me wazan lena
        grams = kg * 1000  # 1 kg = 1000 grams
        print("Weight in grams:", grams)  # Result

    elif choice == "3":  # Agar user ne temperature conversion choose kiya tu
        c = float(input("Enter temperature in Celsius: "))  # Celsius me temp lena hy
        f = (c * 9/5) + 32  # Celsius to Fahrenheit formula
        print("Temperature in Fahrenheit:", f)  # Result

    elif choice == "4":  # Agar user ne exit choose kiya tu phir
        print("Thank you for using the converter. Goodbye!")  # Shukriya ka message
        break  # Loop tor kr program end ho jy ga yahn

    else:  # Agar user ne galat option dala
        print("Invalid choice. Please select 1 to 4 only.")  # Warning

    print("\n----------------------\n")  # Har round ke baad separator line print ho jy
```

Output: