100 days of Python Programming

Day-2

1. Python Primitive Data Type

Strings

" H E L L O "
[0 1 2 3 4]

print("Hello"[-1]) -> It will show "O"
print("Hello"[1]) -> It will show "E"
print("123" + "456") -> It will combine the numbers like 123456

Integer

print(123+345) -> It will add the numbers
print(123_45_678 + 1)

or

print(12345678+1)

Float

print(3.14159 + 1)

Boolean

Two possible values [True or False]

2. Type Error, Type Checking and Type Conversion

Type Error & Type Conversion

a=len(input("What's your name? "))
-> Check how many characters are there from input
b=str(a)

-> Convert integer into string(because concatenate str (not into) to str)

```
print('Your name as ' + b + ' characters.')
```

-> you can convert str to int or str to float or float to str

Type Check

```
a=input("Your Age: ")
print(type(a))
```

-> Type denote which data type we use (Here its string)

—----------

Challenge-1

Write a program that adds the digits in a 2 digit number. e.g. if the input was 35, then the output should be 3 + 5 = 8

Answer:

```
two_digit_number = input("Type a two digit number: ")
first_digit = int(two_digit_number[0])
second_digit = int(two_digit_number[1])
two_digit_number = first_digit + second_digit
print(two_digit_number)
```

—----------

3. Mathematical Operator

```
print(3 + 5)    -> addition
print(10 -3)    -> Subtract
print(5 / 2)    -> Division
print(1 * 10)   -> Multiply
print(3 ** 4)   -> exponential (where 3 power 4 = 3*3*3*3)
```

-> Here we use **PEMDAS rule** (left to right)

1. ()
2. **
3. */
4. +-

print(3 * 3 + 3 / 3 -3)

-> (3*3)=9

-> (3/3)=1 ----------> (9+1-3)

-> (10-3) =======>> ans=7

print(3 * (3 + 3) / 3 -3) -> Answer = 3

Challenge-2

BMI Calculator

Write a program that calculates the Body Mass Index (BMI) from a user's weight and height.

-> Sample Input: weight=80, height = 1.75

Answer:

```
height = input("Enter your height in m:  ")
weight = input("Enter your weight in kg: ")
weight_in_integer = int(weight)
height_in_float = float(height)
bmi = weight_in_integer / (height_in_float * height_in_float)
print(int(bmi))
```

—----------

4. Number Manipulation & F string in Python

Number Manipulation

print(8 / 3) -> 2.6666666666666665

print(round(8/3)) -> 3 (here it will round the number 2.666 to 3)

print(round(8/3, 2)) -> 2.67 (that 2 indicates .66666 convert to .67)

print(8 // 3) -> 2 (// - floor division it remove the decimal points)

result = 4/2
result /= 2 -> (/= is divided AND) used to divide again
[like result = result/2]
print(result)

-> (we can use also +=, -=, *=, /= .....)

f-string

score = 0
height = 6.5
award = True
print(f"your score is: {score}, your height is: {height}, your award is: {award}") ***-> avoid use more lines we use f-string here)***

Challenge-3

Life in weeks

Create a program using maths and f-Strings that tells us how many days, weeks, months we have left if we live until 90 years old.

-> You have x days, y weeks, and z months left.

-> Sample Input: 56 and Sample Output: You have 12410 days, 1768 weeks, and 408 months left.

Answer:

```
age = input("What is your current age? ")
years = 90 - int(age)
weeks = round(years*52)
months = round(years*12)
days = round(years*365)
print(f" you have {days} days, {weeks} weeks, {months} months left.")
```

—----------

Final Project of Second day

Tip Calculator

```
print("Welcome to the tip calculator.")
bill = float(input("What was the total bill? $"))
tips = int(input("What percentage tip would you like to give? 10, 12 or 15? "))
people = int(input("How many people to split the bill? "))

average_tips = bill * tips /100
final_tips = bill + average_tips
total_amount = final_tips / people
print(f"Each Person should pay: {round(total_amount)}$ ")
```

—----------