Day 2 Notes

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↗ Projects	📕 100 Days of Code: The Complete Python Pro Bootcamp for 2023
🔗 URL	https://www.udemy.com/course/100-days-of-code/

▼ Data types:

```
print("hello"[0])   #string
o/p: h      -------->this method of pulling is called subscript

print(12+8)         #integers -->whole numbers without decimal
o/p: 20             (9_569_877-->we can write like this also)

print(1.2+5.56)     #float --->numbers with decimal values
o/p: 6.76

True,False          #Boolean -->T and F must be in capital
```

▼ Type casting/conversion → converting one data type to other data type

```
num_char = len(input("Enter your name \n"))
num_char_in_string = str(num_char)          # here we are converting the integer output 6 as a string and storing it in another variable
print("The number of charcaters in your name is : " + num_char_in_string )  #Since we already converted the data type as string, we can use concatenation

o/p:
Enter your name
Master
The number of charcaters in your name is : 6

You can investigate the data using type function:
a = float(123)
print type(a)  ---> o/p class 'float'
```

▼ Sample challenge for learning:

```
#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

# 🔒 Don't change the code below 💡
two_digit_number = input("Type a two digit number: ")
# 🔒 Don't change the code above 💡

####################################
#Write your code below this line 💡
a = two_digit_number[0]
b = two_digit_number[1]
print(type(a),type(b))       #input type was a string here
sum = int(a) + int(b)        #string is converted into integer
print(sum)

o/p:
Type a two digit number: 15
<class 'str'> <class 'str'>
6
```

```
a = int(input("enter a first number "))
b = input("enter a second number ")
c = a+b                 #here we are trying to add the str and int, it will throw the error, if we don't do the type conversion
print(c)

o/p:
enter a first number 15
enter a second number 15
ERROR!
Traceback (most recent call last):
  File "<string>", line 6, in <module>
TypeError: unsupported operand type(s) for +: 'int' and 'str'
```

▼ Mathematical Operators:

+, - , / , *

to put the power for a number we use "**" , Eg: 2 **3 (2 power 3), it returns 8.

priorities for operators : PEMDAS Rule (calculations will always go from left to right)

- Brackets ( )
- Exponents **
- multiplication
- Division
- Addition

- Subtraction

Note : When you use division , output you will always get in the float value in python

Sample challenge:

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

# 🔴 Don't change the code below 🔔
height = input("enter your height in m: ")        #input from user
weight = input("enter your weight in kg: ")       #input from user
# 🔴 Don't change the code above 🔔

#Write your code below this line 🔔
bmi = (float(weight))/(float(height) ** 2)    #Formula and we have used exponential operator we learned

print(int(bmi))

o/p:
enter your height in m: 1.7
enter your weight in kg: 70
24
```

▼ Number manipulation and F strings

```
Rounding the numbers:
print(round(8/3, 2))  #it will round the number at 2 nd digit, generally the ouput is 2.66666666...
print(round(4.77777777777, 3))
o/p:
2.67
4.778

print(type( 8 //3 ))  #this will return the value in int without conversion
```

score = score + 1 , you written this as score += 1

the same way you can write them for other operators as well

```
F-Strings:
score = 8
goal = 3
is_winning = True
#f-string
print(f"your team score is {score},your goal is {goal}, your winning is {is_winning}")

o/p:
your team score is 8,your goal is 3, your winning is True
```

sample challenge:

```
#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.

# 🔴 Don't change the code below 🔔
age = input("What is your current age? ")
# 🔴 Don't change the code above 🔔

#Write your code below this line 🔔

remaining_life = 90 - int(age)

months = remaining_life * 12
weeks = remaining_life * 52
days = remaining_life * 365

print(f"You have {days} days, {weeks} weeks, and {months} months left.")   #using fstring to convert the data into strings

o/p:
What is your current age? 25
You have 23725 days, 3380 weeks, and 780 months left.
```

▼ Mini Project : Tip Calculator

Tip Calculator

Instructions

If the bill was $150.00, split between 5 people, with 12% tip.

Each person should pay (150.00 / 5) * 1.12 = 33.6

Format the result to 2 decimal places = 33.60

Thus everyone's share of the total bill is $30.00 plus a $3.60 tip.

Tip: There are 2 ways to round a number. You might have to do some Googling to solve this.💪

Example Input

```
Welcome to the tip calculator!
What was the total bill? $124.56
How much tip would you like to give? 10, 12, or 15? 12
How many people to split the bill? 7
```

Example Output

```
Each person should pay: $19.93
```

```
print("Welcome to the tip calculator!")

total_bill = int(input("What was the total bill? "))

tip_percentage = int(input("How much tip would you like to give? 10, 12, or 15? "))

people = int(input("How many people to split the bill? "))

each_oneTo_pay =round (((total_bill/people) * (1+(tip_percentage/100))),2)

print(f"Each person should pay: ${each_oneTo_pay}")

o/p:
Welcome to the tip calculator!
What was the total bill? 1000
How much tip would you like to give? 10, 12,12r 15?
How many people to split the bill? 6
Each person should pay: $186.67
```