Python "week 1"

note
to make comment use #

To Print a message
→ Print(" ")
→ Print(' ')

→ Variables.
it must has a unique name.
To Print a variable.
You shouldn't to Put the name of variable in ~~quotes~~ " "
imagine we have variable named age = 21
1) Print (age) ~~+ str(age) +~~ doesn't give space.
2) Print(" your age = " ~~+ age +~~ " years")

what is str it is called type Casting تحويل المتغير الرقم ~~to~~ إلى String يمكن طباعته

3) Print ("your age" , age , "years")
give me space

Common way
4) Print (f" your age {age} years old")
doesn't give space.

→ data types
1) integer رقم صحيح بدون كسور
2) floats رقم يوجد به كسور
3) String : Series of text مجموعة من الحروف
* it can Contain numbers
email = "Bro123@gmail.com"
4) Boolean : " True or False "
True
False
We use it in if statements
Make sure you don't write them with quotes
capital.

if we want to do Multiple assignments

x, y, z = 1, 2, 3

To make Multiple variable have the Same value:

x = y = z = 1

Type Casting : Process to Convert a value of data type To another type: (string, integer, Float, boolean)

Explicit vs Implicit

→ To get the data type use method age (variable)

→ To do Type Casting age = 21

age = float(age) → 21.0

~~Float~~ ; gpa = 3.8

gpa = int(gpa) → 3

gpa = bool(gpa) → True.

0 ماعدا True الرقم متحول ل

we Can use it Check if the user entered any ~~els~~ ~~to~~ thing.

~~Explicit~~ implicit

x = 2

y = 2.0

x = x / y

x = 1.0

Sun
Sama

→ User input

name = input("Enter your name : ")
↑
To store input

round (variable, __)
digits
يقرب الرقم للعدد ده من العلامات العشرية
لو محددتش digits هيقرب التقريب العادى بتاعنا

→ Math : arthimetic operators

+ ← addition
+= ←

- ← Subtraction
-= ←

* ← Multiplication
*= ←

/ ← division
/= ←

**2 ← Power of two
**=2 ←

% ← reminder باقى القسمه
%= ← it famous to know if number is odd or even.

→ built in functions:

1. round. round number to the nearst integer number
2. abs it gives Positive number
3. Pow (4,3) 4 Power 3 $(4)^3$
4. Max(x,y,z) turnes Max between two numbers or three
5. Min(x,y) turnes Min between two or three numbers.

~~* to use all these and More we need to~~
~~import~~ Math.

import Math. يقرب للرقم الاعلى دايما

(Math.Pi), (math.e), (math.sqrt()), (Math.ceil())
(math.floor())
يقرب دايما للرقم الاقل.

الأضحى

"do Some Code if only if Some Condition is True"

→ if Statements :- if it is True something will happen if not other thing will happen.

```
if age>=18:
    ↳ الشرط اللي هيتحقق لو الشرط صح
elif age<0:
    ↳ do some thing else.
else:
```

You can write too many elseif statements but one else

→ logical operators ① and : check for two or more are true.
② OR : check if atleast one is true.
③ not : if True if condition is false
False if condition if True.

→ String methods :
1. len(String) : returns number of Char
2. ~.find(") : Search returns number of the Char
3. ~.rfind() : returns Last occurance of Char
4. ~.capitalize() : returns String (capital) اول حرف
5. ~.upper() : make all Stichar Upper case
6. ~.lower() : Make all Char Lower case
7. ~.isdigit() : return if there only digits
returns True if all String is digits
8. ~.isalpha() : if all String is Characters
9. ~.count(" ") : return numbu of occurence of the char I Searched
10. ....replace(" ", " ") : Chang char by char

→ String indexing.

indexing: accessing elements of a sequence using [ ]

[Start : end : step]

string [1] or string [0 : 4] → exclusive.
index
inclusive

string [: 4] → 4 ← 0 من

string [5 :] ← From index 5 to the end of string.

string [- int] ← char from end.

string [: : -1] ← will reverse string.

→ format specifiers.

variable : .2f round to two digits

variable : 10 العدد اللي هيتحرض فيه الرقم

variable : 010 zeros on left to reach 10 digits

variable : <10 left justified.

variable : >10 right "

variable : ^10 Centeral.

variable : + any positive has ⊕ any negative has ⊖

variable : , Thousant sperator.

→ while loops excute some code while condition remains true. it can do forever.

while condition :

continue → skip this step

break → stop loop

→ for loops : excute blak of code for fixed number of items.

For x in range(1, 11) : range(1, 11, 2)

inclusive exclusive. 1 - 3 - 5 - 7 - 9

For x in reversed (range(1, 11))

To Print more of one variable in one line use.

Print(x , end = " ")

Nested loops in python

outer loop :
    innerloop :

```
for x in range(3)
    for y in range(1,5):
        print(y, end = " ")
```

1 2 3 4 1 2 3 4 1 2 3 4

~~Math time~~

```
import time
time.sleep()
```