OBJECT ORIENTED PROGRAMMING WITH PYTHON

Second Class

1st Semester

- Quick Review
- Arithmetic operations
- If Statements
- Logical operators
- Comparison operators
- PROJECT
- While Loops

QUICK REVIEW

- We studied earlier
- Variables (The variable name must be informative)
- Variable can be(integer, real (float), string, Boolean)
- Getting input and Printing

```
name=input('What is your Name? ')
Age=int(input('Your Age? '))
```

```
print('*' * 10)
```

QUICK REVIEW

We can get individual characters in a string using square brackets [].

course = 'Python for Beginners'

course[0] # returns the first character

course[1] # returns the second character

course[-1] # returns the first character from the end

course[-2] # returns the second character from the end

course[1:5] #returns all the characters starting from the index position of 1 to 5 (but excluding 5). The result will be **ytho**

QUICK REVIEW

We can use **formatted strings** to dynamically insert values into our strings:

Example

```
name = 'Ahmad'
message = f'Hi, my name is {name}'
print(message)
```

String Methods

We use the dot operator to list all the functions can be used with the string

```
message.upper() # to convert to uppercase                    HI, MY NAME IS AHMAD
message.lower()  # to convert to lowercase                   hi, my name is ahmad
message.title()     # to capitalize the first letter of every word   Hi, My Name Is Ahmad
message.find('A') # return the index for that character      15
'Ah' in message      # return True or False                  True
```

ARITHMETIC OPERATIONS

```
+    print(10+3)        # returns          13
-    print(10-3)        # returns          7
*    print(10*3)        # returns          30
/    print(10/3)        # returns a float  3.33335
//   print(10//3)       # returns an int   3
%    print(10%3)        # returns the remainder of division
**   print(10**3)       # exponentiation - x ** y = x to the power of y
```

Augmented assignment operator:

```
x = x + 2
x  += 2
```

ARITHMETIC OPERATIONS

Operator precedence:

1. parenthesis
2. exponentiation
3. multiplication / division
4. addition / subtraction

Ex: find the value of x

1- x=10+3*2

2- x=10+3*2**2

3- (2+3) *10-3

IF STATEMENTS

Write a program that check the weather if it is sunny day or rainy and

if it's sunny day :

Display Its sunny day

you can have a trip

Otherwise if it's rainy

Display Its rainy day

you must dress well

Otherwise

Display Enjoy your day

IF STATEMENTS

Solution:

```
Sunny_Day=True
Rainy_Day=False

if Sunny_Day:
    print("It's Sunny Day")
    print("You can have a trip today")
elif Rainy_Day:
    print("It's Rainy Day")
    print("You have to dress well")
else:
    print("Enjoy your Day!")
```

EXERCISE:

Imagine that you want to buy a house, Price of the house is **$1M .**
If the buyer has good credit,
they need to put down 10%
Otherwise
they need to put down 20%
Print down payment

Solution:

```
price=1000000

has_good_credit=True

if has_good_credit:

    down_payment=0.1*price

else:
    down_payment=0.2*price

print( f" Down Payment:${down_payment} ")
```

LOGICAL OPERATORS

AND : both conditions should be true
OR : at least one of conditions should be true
Not : Inverse the logical value

- **Exercise:**

If the applicant for the loan has a good credit and no criminal record then print eligible for loan

- **Solution** :

```
has_good_credit=True
has_criminal_record=False

if has_good_credit and not has_criminal_record:
 print('Eligible for loan')

else:
    print('NOT Eligible for loan')
```

COMPARISON OPERATORS

Comparison used when we compare operator with value

x > y

x >= y (greater than or equal to)

x < y

x <= y

x == y (equals)

x != y (not equals)

Exercise:

If the name is less than 3 characters long
    name must be at least 3 characters
Otherwise if it's more than 50 characters long
    name can be a maximum of 50 characters
Otherwise
    name looks good

COMPARISON OPERATORS

```
#name='J‘
name='Salam‘
#name='kjaflkghagfhgfjhgfjhgfhgkfkhgfshfkfdsjfsfdsfdsfgesrsgcshgkjghjfahdgjgkhgkajdghjkgh'

if len(name)<3:
    print("name must be at least 3 characters ")

elif len(name)>50:
    print("name can be maximum of 50 characters")

else:
    print("name looks good")
```

PROJECT
WEIGHT CONVERTER

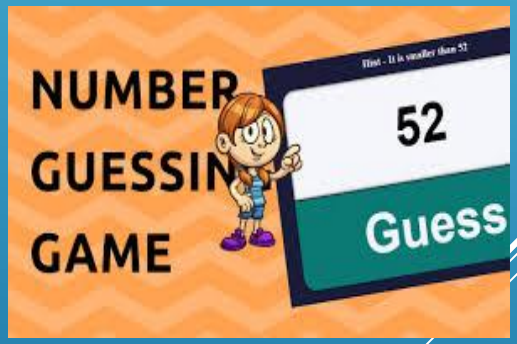
Program a project that converts the weight from Kilogram to pound and vice versa.
User enter his weight then determines (K) for kilo and (L) for pounds. **Noticing** that the input is not case sensitive.
The running will be like this

Weight : 72
(L)lbs or (K)g: K
You are 160. pound

WHILE LOOPS

```
i = 1
while i < 5:
print(i)
i += 1
```

Guessing Game
Let the user Guess a secret number then if he guess right
    display YOU WON!
Otherwise you will let him guess more two times
If not
 display (SORRY YOU FAILED!)



https://youtu.be/w2U6dUfULug رابط المحاضرة على اليوتيوب