PYTHON VARIABLE

1-Introduction to python ☐ 2-Variable in python ☐

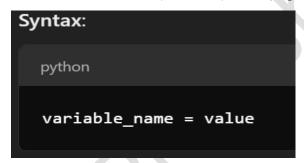
- ☐ a **variable** is a name that refers to a memory location where a value is stored.
- ☐ a variable is a container for data.

3-Charcteristic of variable

- ☐ **Dynamic Typing**: no need to declare any variable like (int, float, string)
- □ **No Explicit Declaration**: Just assign a value, and Python will automatically create the variable
- Mutable: You can change the value of a variable as many times as you need during the execution of your program

4- Rules to define variable in python [

- ☐ Must start with a letter (a-z, A-Z) or an underscore (_).
- ☐ Can contain letters, digits (0-9), and underscores, but cannot start with a digit.
- ☐ Case-sensitive: age, Age, and AGE are different variables.
- ☐ Cannot be a Python keyword (e.g., True, False, if, for, class, etc.).



```
# Example 1: Integer Variable
age = 25  # Here, 'age' is a variable, and it stores an integer value 25
print(age)  # Output: 25

# Example 2: String Variable
name = "Alice"  # 'name' is a variable, storing a string "Alice"
print(name)  # Output: Alice

# Example 3: Float Variable
price = 19.99  # 'price' is a variable, storing a floating-point number
print(price)  # Output: 19.99

# Example 4: Boolean Variable
is_active = True  # 'is_active' is a variable, storing a Boolean value
print(is_active)  # Output: True
```

1. Storing and Printing a Value

```
python

# Storing the value 10 in a variable called 'x'
x = 10
# Printing the value of 'x'
print(x) # Output: 10
```

```
2. Using Variables in Expressions
```

```
python

# Assigning values to variables
a = 5
b = 3
# Adding two variables and storing the result in 'result'
result = a + b
# Printing the result
print(result) # Output: 8
```

3. Changing the Value of a Variable python # Initial value score = 50 print(score) # Output: 50 # Changing the value of 'score' score = 100 print(score) # Output: 100

4. Concatenating Strings

```
# Assigning values to variables
first_name = "John"
last_name = "Doe"

# Concatenating strings and storing in a new variable
full_name = first_name + " " + last_name
print(full_name) # Output: John Doe
```

5. Using Variables in a Calculation python # Assigning values to variables length = 10 width = 5 # Calculating the area of a rectangle area = length * width print(area) # Output: 50

Reassigning Values to Variables Python allows you to reassign a variable to a new value at any time. python x = 10 # Initial value of x print(x) # Output: 10 # Reassigning the value of x x = 20 print(x) # Output: 20

Final Notes:

- □ **Variables can store any type of data**, including numbers, strings, lists, dictionaries, objects, etc.
- ☐ **Variables are dynamic**, meaning their type is automatically determined by the value assigned to them, and they can change type during execution.