IDENTITY OPERATORS & MEMBERSHIP OPERATORS IN PYTHON

IDENTITY OPERATORS

IDENTITY OPERATORS IN PYTHON ARE USED TO COMPARE THE MEMORY LOCATIONS OF TWO OBJECTS TO CHECK IF THEY REFER TO THE SAME INSTANCE. UNLIKE EQUALITY (==), WHICH COMPARES VALUES, IS AND IS NOT CHECK WHETHER TWO VARIABLES POINT TO THE EXACT SAME OBJECT IN MEMORY.

is

The is operator checks whether two variables point to the same object in memory (i.e., they are the same object). It does not compare values but checks if two references point to the same memory location.

is not

The is not operator checks whether two variables do not refer to the same object in memory.

MEMBERSHIP OPERATORS

MEMBERSHIP OPERATORS ARE USED TO CHECK WHETHER A SPECIFIC VALUE EXISTS WITHIN AN ITERABLE DATA STRUCTURE, SUCH AS A LIST, TUPLE, STRING, OR DICTIONARY. THESE OPERATORS ARE USEFUL FOR SEARCHING ELEMENTS IN COLLECTIONS EFFICIENTLY.

in

The in operator is used to check whether a value is present in an iterable.

not in

The not in operator checks if a value is not present in an iterable.

SUMMARY

• “ is ” checks **identity** (whether two variables point to the same object in memory).
• “ in ” checks **membership** (whether an element exists in a collection).

IS / IS NOT

```
a = [1, 2, 3]
b = [1, 2, 3]
c = a  # 'c' references the same
object as 'a'

print(a is b)  # False
(different objects with same
values)
print(a is c)  # True (same
object reference)

print(a is not b)  # True (a and
b have same values but different
memory locations)
print(a is not c)  # False (a
and c refer to the same object)
```

IN / NOT IN

```
numbers = [10, 20, 30, 40]

print(20 in numbers)  # True (20
exists in the list)
print(50 in numbers)  # False
(50 is not in the list)

# 'in' also works with strings
text = "hello world"
print("hello" in text)  # True
print("Hi" in text)  # False

fruits = ["apple", "banana",
"cherry"]

print("grape" not in fruits)  #
True (grape is not in the list)
print("apple" not in fruits)  #
False (apple is in the list)
```

THANK YOU

- Ghaniya Khan
- 03323118076
- ghaniyaakhanno8@gmail.com
- ghaniyakhan