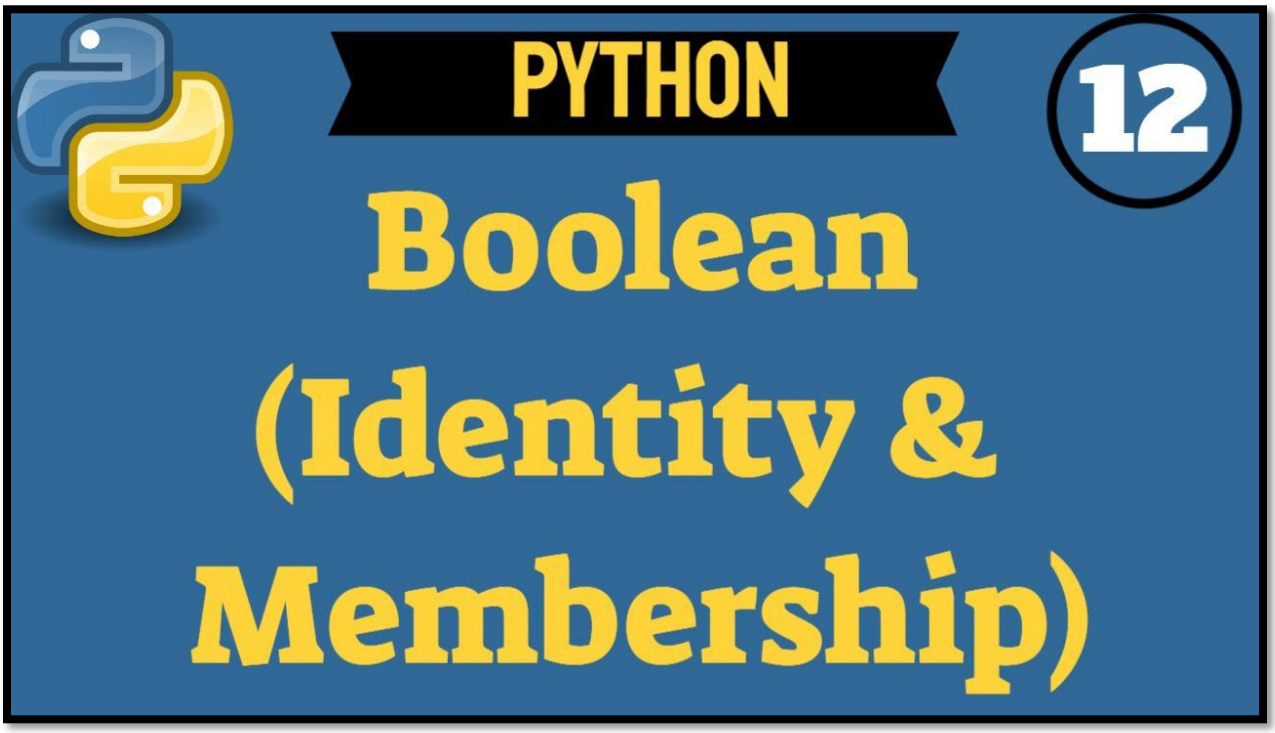
Rex Jones II

Boolean Operators (Identity & Membership)



Python Video = https://youtu.be/1G41OHz8p4I

In this session, let's discuss the Boolean Operators. A Boolean Operator represents 2 values: True or False. It evaluates a condition then return a value. The Identity and Membership Operators are 2 types of Boolean Operators. An Identity Operator is used to compare 2 objects and the Membership Operator is used to test whether a value is found in a sequence. We see Identity has is and is not. is Returns True if the objects are the same while is not returns True if the objects are not the same. The Membership Operators are in and not in. in returns True if a value is specified in a sequence. not in returns True if a value is not specified in a sequence.

Boolean Operators

Identity

Operator	Name
is	Returns True if the objects are the same
is not	Returns True if the objects are not the same

Membership

Operator	Name
in	Returns True if a value is specified in a sequence
not in	Returns True if a value is not specified in a sequence

Let's start with the #Identity Operators. Our objects are address_1234 = ["red", "black", "white"] and address_1238 = ["red", "black", "white"]. These 2 data types are list of strings. If I hover address_1238, we see list with str inside of the brackets. It's a different data type that we discussed in a previous video Comments & Data Types video. The purpose of a list is to store more than 1 item in a memory address location. We see the same values are stored in a different object. Therefore if I write print(address_1234 == address_1238). We expect the console to return true because they have the same values. As expected, the console returned True.

```
# Identity Operators
address_1234 = ["red", "black", "white"]
address_1238 = ["red", "black", "white"]
print(address_1234 == address_1238)
```

```
C:\Users\RexJo\Pycharm
True
```

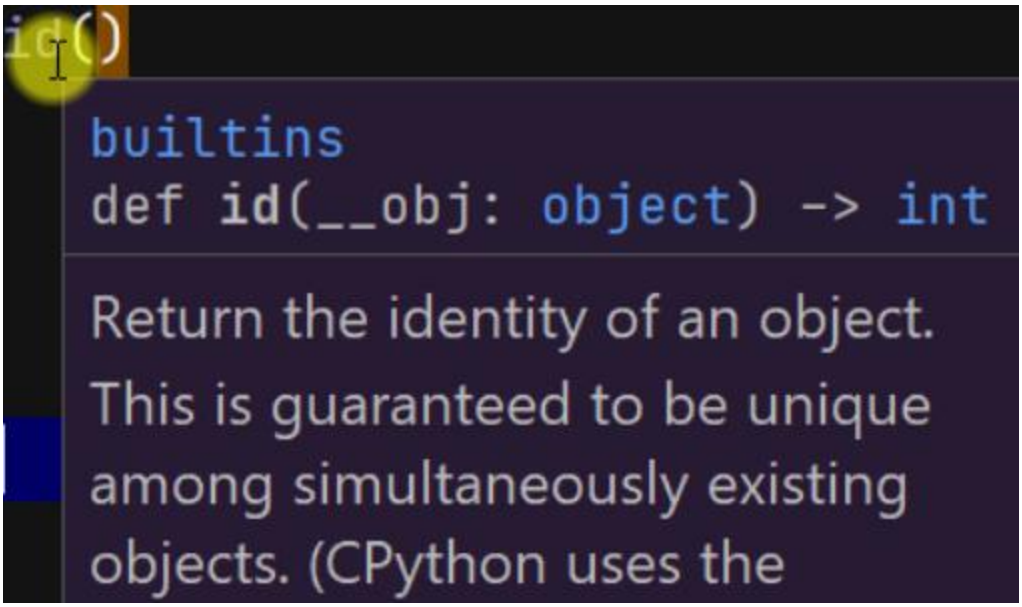
When it comes to an Identity Operator, we are comparing the objects and not the values. Therefore, if I change == to print(address_1234 is address_1238). They have the same values but they are different objects pointing to a different address. Since they are pointing to a different address, they are not the same. So when I run we see False because the objects are not the same even though they have same the value.

```
# Identity Operators
address_1234 = ["red", "black", "white"]
address_1238 = ["red", "black", "white"]
print(address_1234 is address_1238)
```

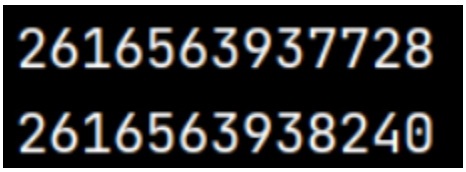
```
C:\Users\RexJo\Pycharm
False
```

Imagine 2 houses that are located right next to each other. They look exactly the same but have a different address. 1 address is 1234 and the other address 1238. Although they look the same. They are not the same because they have a different address.

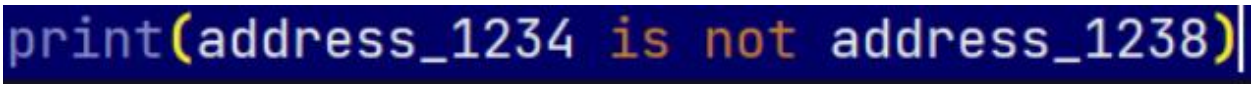
If I write the id() function which returns the address of an object. Hover the id() function, we see it returns the identity of an object. This is guaranteed to be unique.



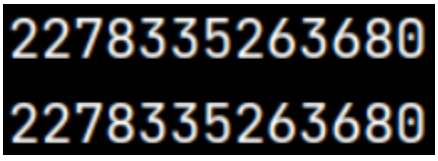
Pass in address_1234 then print(). When I print(id(address_1238)). Let's Run and the console shows a different a value for each object. We see one of them ends with '7728' and the one ends with '8240'.



I'm going to Copy and Paste this Identity Operator statement and change it to be is not Operator. Run and we see True in the Console because both objects are not the same.



We can make both objects the same by assigning one object to the other object like address_1234 = address_1238. Copy and Paste these same print statements then run. Now, the console shows the same address memory location for both objects.



That's it for Identity Operators.

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Let's take a look at the #Membership Operators. They test whether a value is found in a sequence. Our variable will be message = "I Like Python". The sequence can be a string or it can be a list. We test by writing something like print("Python") followed by a Membership Operator in. Is Python in message? Yes Python is in the message so when I run. The console returns True.

```
#Membership Operators
message = "I Like Python"
print("Python" in message)
```

```
True
```

The Membership Operators are case sensitive so if I write print(" python" not in message). We see True in the Console because python with a lower case 'p' is not in the string "I Like Python".

```
#Membership Operators
message = "I Like Python"
print("Python" in message)
print("python" not in message)
```

```
True
True
```

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