

Day 32



'is' vs '==' in Python:

What is == (Equality Operator)

== checks VALUE equality

"Do these two objects have the same value?"

What is is (Identity Operator)

is checks OBJECT identity

"Do these two variables point to the SAME object in memory?"

Key Difference (Simple Words)

Operator	Checks	Question Asked
==	Value	"Are the values equal?"
is	Memory	"Are they the same object?"

Example: of == and is

```
1  a = 10
2  b = 10
3  print(a == b)
4  print(a is b)

PROBLEMS     OUTPUT     DEBUG CONSOLE     TERMINAL
PS E:\Python\Day31-40\Day32> python main.py
True
True
```

Example:

```
1  a = 10
2  b = "10"
3  print(a == b)
4  print(a is b)
```

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- PS E:\Python\Day31-40\Day32> **python main.py**
False
False

Example: as list is immutable.

```
6  a = [1, 2, 3]
7  b = [1, 2, 3]
8  print(a == b) # value comparison
9  print(a is b) # memory comparison
```

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True
False

Example: when both are true.

```
11 a = [1, 2, 3]
12 b = a
13 print(a == b)
14 print(a is b)
```

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- PS E:\Python\Day31-40\Day32> **python main.py**
True
True

Example:

```
16     a = 1000
17     b = 1000
18     print(a is b) # False (in many cases)

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● PS E:\Python\Day31-40\Day32> python main.py
True
```

Example:

```
20     a = "hello world!"
21     b = "".join(["hello", " world!"])
22     print(a == b) # True
23     print(a is b) # False

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● PS E:\Python\Day31-40\Day32> python main.py
True
False
```

When SHOULD You Use is

✓ Comparing with None

if value is None:

```
print("No value")
```

✓ Singleton objects (None, True, False)

When SHOULD You Use ==

✓ Comparing values

- Numbers
- Strings
- Lists
- Tuples
- Dictionaries

One-Line Rule (Remember This!)

Use == to compare VALUES, use is to compare IDENTITIES.

Example: one tricky question.

```
25     a = [1, 2, 3]
26     b = a[:]
27     print(a == b)  # ?
28     print(a is b)  # ?
```

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- PS E:\Python\Day31-40\Day32> **python main.py**
True
False

Scenario	Use
Compare numbers	==
Compare strings	==
Compare lists	==
Check None	is
Same object check	is

--The End--