

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)
```

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