✅ What is assert in Python? The assert statement is used to check if something is true.

```
If it's true, the program continues.

If it's false, the program stops and raises an error.
```

✔️ Syntax

```
assert condition, "Error message if condition is False"
```

Concept	Explanation
Purpose	Make sure something is true
If false	Program stops with AssertionError
Best use	During development to catch logic errors
Not for	Final production error handling

🧠 Think of it like:

"I believe this should be true. If not, crash the program and tell me what's wrong."

```python
1 # simple example
2
3 age = int(input("Enter your age: "))
4 assert age > 18, "Age must be over 18"
5 print("Acces granted")
```

```
Enter your age: 3
---------------------------------------------------------------------------
AssertionError                            Traceback (most recent call last)
/tmp/ipython-input-24-606092351.py in <cell line: 0>()
      2
      3 age = int(input("Enter your age: "))
----> 4 assert age > 18, "Age must be over 18"
      5 print("Acces granted")

AssertionError: Age must be over 18
```

Next steps: (Explain error)

```python
1 # real example with function
2
3 def divide(a, b):
4     assert b != 0, "Cannot divide by zero"
5     return a / b
```

✔️ Example: Type Hints + assert for Validation

```python
1 def multiply(a: int, b: int) -> int:
2     return a * b
```

```python
1 assert multiply(2, 3) == 6
2 assert multiply(2, 2) == -3
```

```
---------------------------------------------------------------------------
AssertionError                            Traceback (most recent call last)
/tmp/ipython-input-29-2628591519.py in <cell line: 0>()
      1 assert multiply(2, 3) == 6
----> 2 assert multiply(2, 2) == -3

AssertionError:
```

Next steps: (Explain error)

What can I help you build?   ⊕ ▷