Day 40

dir, __dict__ and help method in Python:

dir() – *"What's inside this object?"*What it does

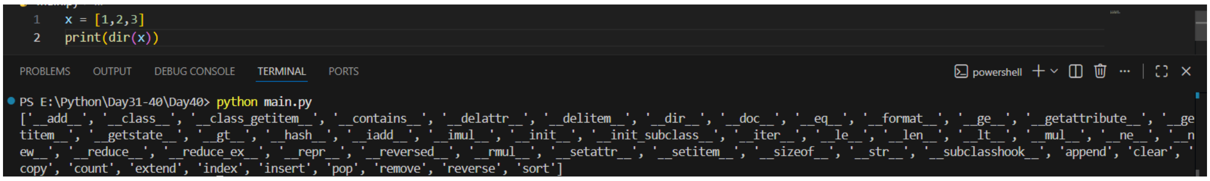
dir() returns a list of names (attributes & methods) that belong to an object.

Think of it as: *Open the box and list everything inside.*

Syntax

dir(object)

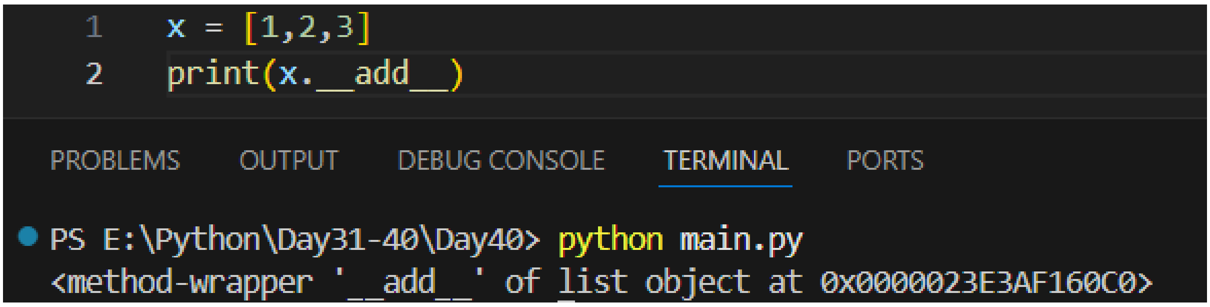
Example: to see the methods



```
x = [1,2,3]
print(dir(x))
```

```
PS E:\Python\Day31-40\Day40> python main.py
['__add__', '__class__', '__class_getitem__', '__contains__', '__delattr__', '__delitem__', '__dir__', '__doc__', '__eq__', '__format__', '__ge__', '__getattribute__', '__ge
titem__', '__getstate__', '__gt__', '__hash__', '__iadd__', '__imul__', '__init__', '__init_subclass__', '__iter__', '__le__', '__len__', '__lt__', '__mul__', '__ne__', '__n
ew__', '__reduce__', '__reduce_ex__', '__repr__', '__reversed__', '__rmul__', '__setattr__', '__setitem__', '__sizeof__', '__str__', '__subclasshook__', 'append', 'clear', '
copy', 'count', 'extend', 'index', 'insert', 'pop', 'remove', 'reverse', 'sort']
```

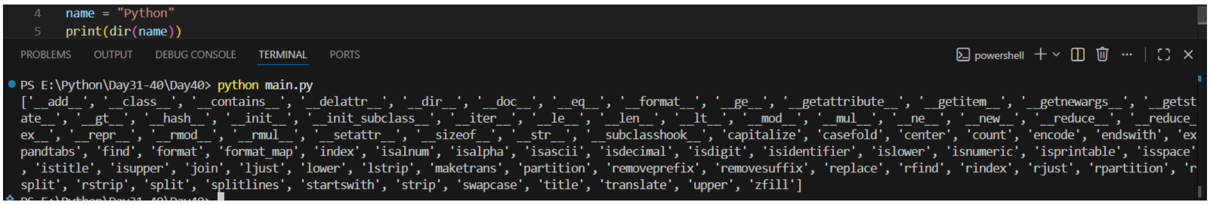
Example: to print information about any method.



```
x = [1,2,3]
print(x.__add__)
```

```
PS E:\Python\Day31-40\Day40> python main.py
<method-wrapper '__add__' of list object at 0x0000023E3AF160C0>
```

Example:



```
name = "Python"
print(dir(name))
```

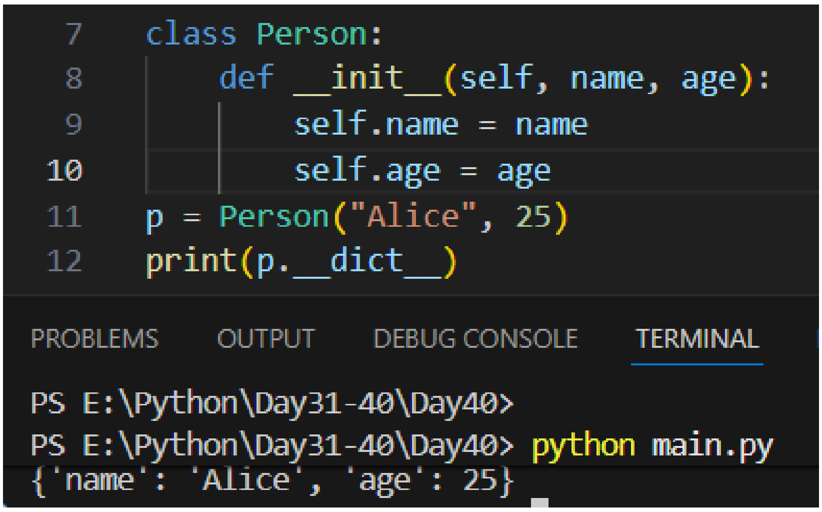
```
PS E:\Python\Day31-40\Day40> python main.py
['__add__', '__class__', '__contains__', '__delattr__', '__dir__', '__doc__', '__eq__', '__format__', '__ge__', '__getattribute__', '__getitem__', '__getnewargs__', '__getst
ate__', '__gt__', '__hash__', '__init__', '__init_subclass__', '__iter__', '__le__', '__len__', '__lt__', '__mod__', '__mul__', '__ne__', '__new__', '__reduce__', '__reduce_
ex__', '__repr__', '__rmod__', '__rmul__', '__setattr__', '__sizeof__', '__str__', '__subclasshook__', 'capitalize', 'casefold', 'center', 'count', 'encode', 'endswith', 'ex
pandtabs', 'find', 'format', 'format_map', 'index', 'isalnum', 'isalpha', 'isascii', 'isdecimal', 'isdigit', 'isidentifier', 'islower', 'isnumeric', 'isprintable', 'isspace'
, 'istitle', 'isupper', 'join', 'ljust', 'lower', 'lstrip', 'maketrans', 'partition', 'removeprefix', 'removesuffix', 'replace', 'rfind', 'rindex', 'rjust', 'rpartition', 'r
split', 'rstrip', 'split', 'splitlines', 'startswith', 'strip', 'swapcase', 'title', 'translate', 'upper', 'zfill']
PS E:\Python\Day31-40\Day40>
```

__dict__ – *“Show me the actual data stored”*

__dict__ is a dictionary that stores an object’s attributes.

Think of it as: *The object’s internal record book*

Example:



```python
class Person:
    def __init__(self, name, age):
        self.name = name
        self.age = age
p = Person("Alice", 25)
print(p.__dict__)
```

```
PS E:\Python\Day31-40\Day40>
PS E:\Python\Day31-40\Day40> python main.py
{'name': 'Alice', 'age': 25}
```

help() – *“Explain this to me”*

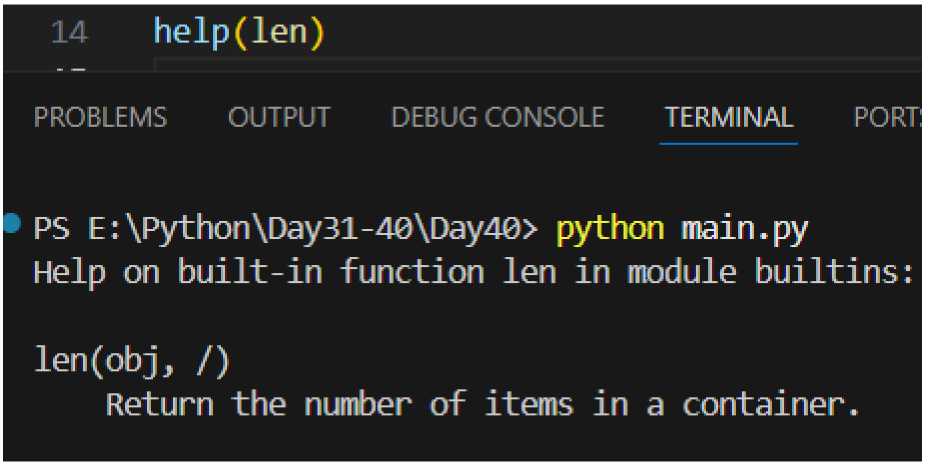
help() displays **documentation** for an object, function, class, or module.

Think of it as: *Open the user manual*

Syntax

help(object)

Example:



```python
help(len)
```

```
PS E:\Python\Day31-40\Day40> python main.py
Help on built-in function len in module builtins:

len(obj, /)
    Return the number of items in a container.
```

Quick Comparison Table

Feature	Purpose	Output Type	Best For
dir()	Lists attributes & methods	list	Exploration
__dict__	Shows stored attributes	dict	Internal data
help()	Shows documentation	Text	Understanding usage