

# Day 17



## Docstrings in Python:

### What is a Docstring?

A docstring (documentation string) is a string written inside a function, class, or module to explain what it does.

It helps:

- Other programmers
  - Future you
  - Tools & IDEs
- understand the code easily.

### Why do we use Docstrings?

- To document code
- To explain purpose, parameters, and return value
- To make code professional & readable
- Used by help() function

### How to Write a Docstring?

- Written using triple quotes ("""" """ or "" "")
- Placed just below the function/class definition

Example: square of a number, without any docstring.

The screenshot shows a code editor interface with a dark theme. On the left, there is a code editor window containing the following Python code:

```
1 def square(n):
2     print(n*n)
3 square(5)
```

Below the code editor, there are several tabs: PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PC. The TERMINAL tab is currently selected and shows the output of running the script:

```
PS E:\Python\Day11-20\Day17> python .\main.py
25
```

Example: we had added docstring.

The screenshot shows a code editor with a Python file named `main.py`. The code defines a function `square` that prints the square of a number. A docstring is included within the function definition. Below the code editor is a terminal window showing the output of running the script with the command `python .\main.py`, which results in the number 25 being printed.

```
1 def square(n):
2     '''Prints the square of a number n.'''
3     print(n*n)
4 square(5)
```

TERMINAL

```
● PS E:\Python\Day11-20\Day17> python .\main.py
25
```

Example: printing the content of docstring. Using “`__doc__`”.

The screenshot shows a code editor with the same `main.py` file. In addition to the original function, a line of code `print(square.__doc__)` is added to print the docstring. The terminal window shows the output of running the script, which includes the docstring text "Prints the square of a number n."

```
1 def square(n):
2     '''Prints the square of a number n.'''
3     print(n*n)
4 square(5)
5 print(square.__doc__)
```

TERMINAL

```
● PS E:\Python\Day11-20\Day17> python .\main.py
25
Prints the square of a number n.
```

Example: we can also use `Help()` to print the content of the docstring.

The screenshot shows a code editor with the `main.py` file. The line `print(square.__doc__)` is removed, and instead, the `help(square)` command is used to print the docstring. The terminal window shows the output of running the script, which includes the docstring text "Prints the square of a number n." and the help information for the `square` function.

```
1 def square(n):
2     '''Prints the square of a number n.'''
3     print(n*n)
4 square(5)
5 print(square.__doc__)
6 help(square)
```

TERMINAL

```
● PS E:\Python\Day11-20\Day17> python .\main.py
25
Prints the square of a number n.
Help on function square in module __main__:

square(n)
    Prints the square of a number n.
```

Example: invalid docstring, as we write the code of the function before the docstring.

The screenshot shows a terminal window with the following content:

```
8 def square(n):
9     print(n*n)
10    '''Prints the square of a number n.'''
11 square(5)
12 help(square)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS E:\Python\Day11-20\Day17> python .\main.py
25
Help on function square in module __main__:

square(n)
```

### Docstring vs Comment:

Docstring	Comment
Used for documentation	Used for explanation
Written with triple quotes	Written with #
Accessible using help()	Not accessible
Stored in __doc__	Ignored at runtime

### Summary:

- Written using triple quotes
- Placed just below definition
- Accessible using \_\_doc\_\_ and help()
- Better than comments for documentation

--The End--