

Python Interview Series - Day 1

Top 10 Python Fundamentals Interview Questions and Answers

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Title: Python Interview Series – Day 1

Subtitle: Top 10 Most Commonly Asked Basic Python Questions (With Professional Answers)

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Date: May 17, 2025

Interview Questions & Answers

1. What are the key features of Python?

Python is a powerful, high-level programming language known for:

- Simplicity and readability
 - Interpreted and dynamically typed nature
 - Support for object-oriented and functional programming
 - A vast standard library
 - Cross-platform compatibility
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2. What is the difference between a list and a tuple in Python?

- List is mutable (can be modified), declared using []
 - Tuple is immutable (cannot be changed), declared using ()
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3. What is the difference between `is` and `==`?

- `==` checks value equality (same content)
- `is` checks object identity (same memory location)

Example:

```
a = [1, 2]; b = [1, 2]
```

```
a == b  # True
```

```
a is b  # False
```

4. What are the basic data types in Python?

- Numeric: int, float, complex
 - Sequence: str, list, tuple
 - Set: set
 - Mapping: dict
 - Boolean: bool
 - NoneType: None
-

5. What is the purpose of `self` in a Python class?

`self` refers to the current instance of the class. It is used to access instance variables and methods.

Example:

```
class Person:
```

```
    def __init__(self, name):  
        self.name = name
```

6. What is PEP 8 and why is it important?

PEP 8 is Python's style guide. It promotes clean, readable, and consistent code formatting.

7. What are Python keywords? Can you name a few?

Keywords are reserved words that cannot be used as identifiers. Examples:

`if, else, elif, for, while, def, class, return, import, None`

8. What are `*args` and `**kwargs` in function definitions?

- `*args`: allows variable number of positional arguments
- `**kwargs`: allows variable number of keyword arguments

Example:

```
def greet(*args, **kwargs):  
    print(args)  
    print(kwargs)
```

9. What is the difference between global and local variables?

- Local: defined within a function, accessible only inside
- Global: defined outside all functions, accessible everywhere

Use `global` to modify a global variable inside a function.

10. What are conditional statements in Python?

Conditional statements allow decision-making in code:

- `if`: executes when condition is true
- `elif`: additional condition
- `else`: fallback when conditions are false

Example:

```
x = 5
```

```
if x > 0:
```

```
    print("Positive")
```

```
elif x == 0:
```

```
    print("Zero")
```

```
else:
```

```
    print("Negative")
```

End of Day 1 Notes.