



# Python Technical Interview Questions

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# Top 50 Python Technical Interview Questions

## 1. Basics of Python

1. What are the key features of Python?
2. What is the difference between Python 2 and Python 3?
3. How is Python an interpreted language?
4. What are Python's data types?
5. What is the difference between a list and a tuple?
6. What is the use of \*args and \*\*kwargs?
7. What are Python's memory management features?
8. What is the difference between is and ==?
9. What are Python's namespaces?
10. Explain the use of pass, continue, and break.

## 2. Functions and OOP

1. How do you define a function in Python?
2. What is the difference between a function and a method?
3. What is recursion? Give an example.
4. What is a lambda function?
5. What is the use of decorators in Python?
6. What is object-oriented programming in Python?
7. Explain inheritance with an example.
8. What are \_\_init\_\_ and \_\_str\_\_ methods?
9. What are class methods and static methods?
10. What is multiple inheritance and how is it handled in Python?

## 3. Data Structures

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1. What is the difference between a list, set, tuple, and dictionary?
2. How to remove duplicates from a list?
3. How does a dictionary maintain the insertion order (Python 3.7+)?
4. How to merge two dictionaries?
5. What are list comprehensions? Give an example.

## 4. Error Handling & Debugging

1. What is exception handling in Python?
2. What is the difference between try-except and try-finally?
3. How do you raise a custom exception?
4. How do you debug a Python program?
5. What is the purpose of assertions?

## 5. Modules, Packages, and Libraries

1. What is the difference between a module and a package?
2. How do you import a module in Python?
3. What are `__name__ == "__main__"` statements?
4. What are some common Python libraries used in development?
5. How do you create a virtual environment?

## 6. File Handling

1. How do you read and write files in Python?
2. What is the difference between `with open()` and `open()`?
3. How do you handle file exceptions?

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## 7. Advanced Python Concepts

1. What are generators and how do they work?
2. What are iterators?
3. What is a Python yield statement?
4. What is monkey patching in Python?
5. What are metaclasses?
6. What is the Global Interpreter Lock (GIL)?
7. What is the difference between shallow copy and deep copy?

## 8. Python for Development

1. How do you handle JSON in Python?
2. How is Python used in web development (Flask/Django)?
3. How is Python used in data science (Pandas, NumPy)?
4. How is multithreading and multiprocessing different in Python?
5. How can Python interact with databases?