**Python Interview Questions**

**1. What is Python?**

Python is an interpreted high-level, general-purpose programming language. We can build almost any type of application using Python with third-party libraries and frameworks. Python is one of the most popular programming languages in advanced technologies like AI, Data Science, etc.

**2. What is the main difference between an interpreter and a compiler?**

The interpreter translates one statement at a time into machine code, whereas the compiler translates the entire code at a time into machine code.

**3. Is Python statically typed or dynamically typed language?**

Python is a dynamically typed language.

**4. What do you mean by dynamically typed language?**

Dynamically typed languages check the types of variables at run-time. Some dynamically typed languages are Python, JavaScript, Ruby, etc.

Bonus: Statically typed languages check the types of variables at compile-time. Some statically typed languages are C++, C, Java, etc..,

**Data structures:**

**5. What are the built-in data types in Python?**

There are multiples built-in data types in Python. They are int, float, complex, bool, list, tuple, set, dict, str.

**6. What’s the difference between list and tuple?**

Both list and tuple are used to store the collection of objects. The main difference between the list and tuple is “the list is mutable object whereas tuple is an immutable object”.

**7. What are mutable and immutable data types?**

Mutable data types can be changed after creating them. Some of the mutable objects in Python are list, set, dict.

Immutable data types can’t be changed after creating them. Some of the immutable objects in Python are str, tuple.

**8. What’s the negative indexing in lists?**

The index is used to access the element from the lists. Normal indexing of the list starts from 0.

Similar to normal indexing, negative indexing is also used to access the elements from the lists. But, negative indexing allows us to access the index from the end of the list. The start of the negative indexing is -1. And it keeps on increasing like -2, -3, -4, etc.., till the length of the list.

**9. What are list and dictionary comprehensions?**

List and dictionary comprehensions are syntactic sugar for the for-loops.

**10. What is the lambda function?**

Lambda functions are small anonymous functions in Python. It has single expressions and accepts multiples arguments.

**11. What’s the difference between normal function and lambda function?**

The functionality of both normal functions and lambda functions are similar. But, we need to write some extra code in normal functions compared to lambda functions for the same functionality.

Lambda functions come in handy when there is a single expression.

**12. What is a recursive function?**

The function calling itself is called a recursive function.

What are packing operators in Python? How to use them?

The packing operators are used to collect multiple arguments in functions. They are known as arbitrary arguments.

**OOPS Concepts:**

**1.What keyword is used to create classes in Python?**

The class keyword is used to create classes in Python. We should follow the pascal case for naming the classes in Python as an industry-standard practice.

**2. How to instantiate a class in Python?**

We can create an instance of a class in Python by simply calling it like function. We can pass the required attributes for the object in the same way as we do for function arguments.

**3. What is self in Python?**

The self represents the object of the class. It’s used to access the object attributes and methods inside the class for the particular object.

**4. What is the \_\_init\_\_ method?**

The \_\_init\_\_ is the constructor method similar to the constructors in other OOP languages. It executes immediately when we create an object for the class. It’s used to initialize the initial data for the instance.

**5. What are dunder or magic methods?**

The methods having two prefix and suffix underscores are called dunder or magic methods. They are mainly used to override the methods. Some of methods that we can override in classes are \_\_str\_\_, \_\_len\_\_, \_\_setitem\_\_, \_\_getitem\_\_, etc..,

**6. How do you implement inheritance in Python?**

We can pass the parent class to the child class as an argument. And we can invoke the init method parent class in the child class.

**7. How to access parent class inside child class in Python?**

We can use the super() which refers to the parent class inside the child class. And we can access attributes and methods with it.

**Advance Python:**

**1. What is shallow and deep copy?**

**Shallow Copy:** it creates the exact copy as the original without changing references of the objects. Now, both copied and original objects refer to the same object references. So, changing one object will affect the other.

The copy method from the copy module is used for the shallow copy.

**Deep Copy**: it copies the values of the original object recursively into the new object. We have to use the slicing or deepcopy function from the copy module for the deep copying.

**2. What are iterators?**

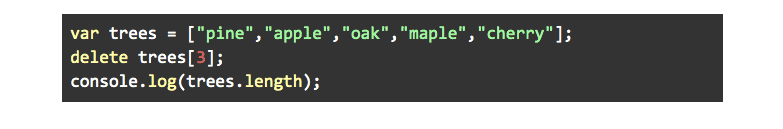
Iterators are objects in Python which remember their state of iteration. It initializes the data with the \_\_iter\_\_ method and returns the next element using the \_\_next\_\_ method.

We need to call the next(iterator) to get the next element from the iterator. And we can convert a sequence data type to an iterator using the iter built-in method.

**3. What are generators?**

Generators are the functions that return an iterator like a generator object. It uses the yield to generate the data.

**4: What will be the output of the code below?**

[](https://www.springboard.com/library/static/ae4f2f469790d8a367feed74a476c9af/e51a6/Screen%20Shot%202020-08-11%20at%201.57.04%20PM.png)

[Answer](https://adevait.com/javascript-developers/interview-questions): This question tests your knowledge of arrays and how they interact with different data

5. Reverse the given string without using any python function.

**Python Frameworks: Django, Flask**

* [1) What are the features of Flask Python?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question1)
* [2) What is Flask-WTF and what are their features?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question3)
* [3) What do you mean by template engines in Flask Python?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question6)
* [4) What are the major differences between Django and Flask?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question7)
* [5) Explain how can one-request database connections in Flask?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question8)
* [6) What do you mean by the Thread-Local object in Flask Python?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question11)
* [7) What do you mean by a decorator? Name some PDB commands and their uses.](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question13)
* [8) What do you mean by NumPy? Is it better than a list?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question14)
* [9) What do you mean by pickling and unpickling?](https://www.onlineinterviewquestions.com/python-flask-interview-questions/#question15)
* 10) Explain Django Architecture?
* 11) What is diff bw migrate and migration?
* 12) what is CSRF token?
* 13) Which is the default port for the Django development server?
* 14) Explain about Middleware’s and Serialization ?
* 15) What are the inheritance styles in Django?

**Algorithms:**

1. Explain what is Quick Sort algorithm?
2. Explain how binary search works?
3. Explain whether it is possible to use binary search for linked lists?
4. Explain what a “Hash Algorithm” is and what are they used for?
5. Explain what is bubble sort algorithm?

**Rest API:**

1. What is the concept of statelessness in REST?
2. What are HTTP Status codes?
3. What are the HTTP Methods?
4. Differentiate between SOAP and REST?
5. What are the differences between PUT and POST in REST?
6. Can we implement transport layer security (TLS) in REST?
7. What do you understand by request method designator annotations?
8. How does Microservice Architecture work?
9. What is the difference between Monolithic, SOA and Microservices Architecture?
10. What is the use of Accept and Content-Type Headers in HTTP Request?

**Python Debugging Tools:**

1. Explain me about python Debugging tools.
2. PDB
3. PUDB
4. Breakpoint
5. Diff Between PDB and Breakpoint

**Oracle:**

1. **Select \* from (select Row\_number() over (order by clom) as Rownumber,columns from customer) as sub where rownumber=2**

Python Advance Concepts: