**Interview question (05.10.2023):**

1. **What is \_\_init\_\_?**

* The \_\_init\_\_ method is the Python equivalent of the C++ constructor in an object-oriented approach.
* The \_\_init\_\_ function is called every time an object is created from a class.
* The \_\_init\_\_ method lets the class initialize the object's attributes and serves no other purpose. It is only used within classes.

**(Or)**

In Python, the \_init\_ function, often known as the function Object() { [native code] } in OOP, is a reserved method. When a class is used to construct an object, the \_init\_ method is used to access the class attributes.

**2). What is the use of self in python?**

**Self definition:**

Self is a class instance or an object. In Python, this is explicitly supplied as the first parameter. In Java, on the other hand, it is optional. With local variables, it makes it easier to distinguish between a class's methods and attributes.

In the init method, the self variable refers to the newly created object, whereas it relates to the object whose method was called in other methods.

**Use of self:**

* The self is used to represent the [instance](https://www.edureka.co/blog/isinstance-in-python/) of the class. With this keyword, you can access the attributes and methods of the [class in python](https://www.edureka.co/blog/python-class/).
* It binds the attributes with the given arguments.
* The reason why we use self is that Python does not use the ‘@’ syntax to refer to instance attributes.

Example:

**class food():**

**# init method or constructor**

**def \_\_init\_\_(self, fruit, color):**

**self.fruit = fruit**

**self.color = color**

**def show(self):**

**print("fruit is", self.fruit)**

**print("color is", self.color )**

**apple = food("apple", "red")**

**grapes = food("grapes", "green")**

**apple.show()**

**grapes.show()**

**3). what is pass statement?**

Pass is a statement that has no effect when used. To put it another way, it's a Null statement. The interpreter does not ignore this statement, but no action is taken as a result of it. It's used when you don't want any commands to run but yet need to make a statement.

Example:

n = 10

# use pass inside if statement

if n > 10:

pass

print('Hello')

**4). What is break, continue and pass in python?**

**Break:**

The break statement terminates the loop immediately and the control flows to the statement after the body of the loop.

**Continue:**

The continue statement terminates the current iteration of the statement, skips the rest of the code in the current iteration and the control flows to the next iteration of the loop.

**Pass:**

As explained above, the pass keyword in Python is generally used to fill up empty blocks and is similar to an empty statement represented by a semi-colon in languages such as Java, C++, Javascript, etc.

Or

The pass statement is used as a placeholder for future code. When the pass statement is executed, nothing happens, but you avoid getting an error when empty code is not allowed. Empty code is not allowed in loops, function definitions, class definitions, or in if statements.

**5). What is the difference between Python Arrays and lists?**

* Arrays in python can only contain elements of same data types i.e., data type of array should be homogeneous. It is a thin wrapper around C language arrays and consumes far less memory than lists.
* Lists in python can contain elements of different data types i.e., data type of lists can be heterogeneous. It has the disadvantage of consuming large memory.

**6).what is a lambda?**

Lambda is an anonymous function in [Python](https://medium.com/javarevisited/7-best-python-online-courses-for-beginners-to-learn-programming-abe12cecb1ad), which can accept any number of arguments, but can only have a single expression.

**7). What are \*args and \*kwargs?**

To pass a variable number of arguments to a function in Python, use the special syntax [\*args and \*\*kwargs](https://www.geeksforgeeks.org/args-kwargs-python/) in the function specification. It is used to pass a variable-length, keyword-free argument list. By using the \*, the variable we associate with the \* becomes iterable, allowing you to do operations on it such as iterating over it and using higher-order operations like map and filter.

### 8). What is the difference between xrange and range functions?

range() and xrange() are two functions that could be used to iterate a certain number of times in for loops in Python. In Python 3, there is no xrange, but the range function behaves like xrange in Python 2.

* *range()* – This returns a list of numbers created using the range() function.
* *xrange()* – This function returns the generator object that can be used to display numbers only by looping. The only particular range is displayed on demand and hence called *lazy evaluation*.

### *9)*. ****What is Dictionary Comprehension? Give an Example****

Dictionary Comprehension is a syntax construction to ease the creation of a dictionary based on the existing iterable.

For Example: my\_dict = {i:1+7 for i in range(1, 10)}

### 10). ****Is Tuple Comprehension? If yes, how, and if not why?****

(i for i in (1, 2, 3))

Tuple comprehension is not possible in Python because it will end up in a generator, not a tuple comprehension.

### 11). ****What is the difference between a shallow copy and a deep copy?****

Shallow copy is used when a new instance type gets created and it keeps values that are copied whereas deep copy stores values that are already copied.

A shallow copy has faster program execution whereas a deep coy makes it slow.