

Assignment 4

1) What is `__init__`?

"`__init__`" is a reserved method in python classes. It is known as a constructor in object oriented concepts. This method called when an object is created from the class and it allow the class to initialize the attributes of a class.

We have created two different types of objects with the same class. while creating the object we passed arguments more arguments will pass to "`__init__`" method to initialize the object.

2) What is self in Python?

self represents the instance of the class. By using the "self" keyword we can access the attributes and methods of the class in python. It binds the attributes with the given arguments.

The reason you need to use self. is because Python does not use the @ syntax to refer to instance attributes. Python decided to do methods in a way that makes the instance to which the method belongs be passed automatically, but not received automatically: the first parameter of methods is the instance the method is called on.

3) How can you randomize the items of a list in place Python?

The method `shuffle()` can be used to randomize the items of a list in place. It should be noted that this function is not accessible directly and therefore we need to import or call this function using random static object.

Syntax: `shuffle (lst)`

Here, 'lst' is passed as a parameter which could be a list or tuple. The `shuffle()` returns a reshuffled list of items.

4) What are python iterators?

An iterator is an object that contains a countable number of values.

An iterator is an object that can be iterated upon, meaning that you can traverse through all the values.

Technically, in Python, an iterator is an object which implements the iterator protocol, which consist of the methods `__iter__()` and `__next__()`.

5) What is pickling and unpickling?

Pickling:

In Python, pickling is the process by which Python objects are converted to byte streams. Pickling is about serializing the object structure in python.

Unpickling:

Unpickling is the process of retrieving original python objects from the stored string representation i.e from the pickle file. It is the process of converting a byte stream into the python object.

6) What are the generators in python?

There are two terms involved when we discuss generators.

Generator-Function : A generator-function is defined like a normal function, but whenever it needs to generate a value, it does so with the `yield` keyword rather than `return`. If the body of a `def` contains `yield`, the function automatically becomes a generator function.

Generator-Object : Generator functions return a generator object. Generator objects are used either by calling the `next` method on the generator object or using the generator object in a “for in” loop

7) How will you capitalize the first letter of string?

The problem of case changes a string is quite common and has been discussed many times. Sometimes, we might have a problem like this in which we need to convert the initial character of string to upper case

Method 1 : Using string slicing + upper()

This task can easily be performed using the upper method which uppercases the characters provided to it and slicing can be used to add the remaining string after the lowercase first character.

Method 2 : Using capitalize()

We can use inbuilt method to perform this task. This method is recommended to solve this problem and performs the task of converting to upper case internally.

8) How to comment multiple lines in python?

Python multi-line comment is a piece of text enclosed in a delimiter ("""") on each end of the comment. Again there should be no white space between delimiter ("""). They are useful when the comment text does not fit into one line; therefore needs to span across lines. Multi-line comments or paragraphs serve as documentation for others reading your code

```
""" Multi-line comment used
```

```
print("Python Comments") """
```