python_advance_assignment_1

May 30, 2023

Q1. What is the purpose of Python's OOP?

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=>Object-oriented programming is a programming paradigm that provides a means␣
 ↪of structuring programs,
    so that properties and behaviors are bundled into individual objects

In Python, object-oriented Programming (OOPs) uses objects and classes in␣
 ↪programming.
It aims to implement real-world entities like inheritance, polymorphisms,␣
 ↪encapsulation, etc. in the programming.
The main concept of OOPs is to bind the data and the functions that work on␣
 ↪that together as a single unit,
so that no other part of the code can access this data.
It comes up with the following advantages:
It helps to divide our over all program into different small segments and thus␣
 ↪making it solving easy with the use of objects
Helps in easy maintenance and modification of existing program
Multiple instances of an object can be made.
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Q2. Where does an inheritance search look for an attribute?

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=> Python searches for an attribute in an upward tree of attributes. it first␣
 ↪searches for the attribute in its instance
    and then looks in the class it is generated from, to all super classes␣
 ↪listed in its class header
```

Q3. How do you distinguish between a class object and an instance object?

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=>The differences between a class object and an instance object are:

Class is a template for creating objects whereas object is an instance of class
Seperate memory is allocated for each object whenever an object is created. but␣
 ↪for a class this doesnot happens.
A Class is created once. Many objects are created using a class.
As Classes have no allocated memory. they can't be manipulated. but objects can␣
 ↪be manipulated.
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Q4. What makes the first argument in a class's method function special?

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=>Python Classes usually have three types of methods which are:

Instance Methods (object level methods)
1>Class Methods (class level methods)
2>Static Methods (general utility methods)
3>self is the first argument for instance methods. which refers to the object itself
4>cls is the first argument for class methods which refers to the class itself
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Q5. What is the purpose of the init method?

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=>__init__ is a reseved method in python classes.
It serves the role of a constructor in object oriented terminology.
This method is called when an object is created from a class and it allows the class to initialize the attributes of the class
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Q6. What is the process for creating a class instance?

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=>To create a class instance, we need to call the class by its name and pass the arguments to the class,
which its init method accepts.

Example: my_name = my_class("Mano","vishnu") Here my_name is an instance of class my_class with attributes "Mano" and "Vishnu".
```

Q7. What is the process for creating a class?

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=>Ans: class keyword is used to created a class in python. The syntax to create a class in python is class <classname>:

Example: class Car: this creates a class called Car
```

Q8. How would you define the superclasses of a class?

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=>Superclass/Parent class is given as a arugment to the child class

Example: class Employee(Person): Here child class Employee inherits attributes and methofs from Superclass/Parent Person
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