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| **Python Assignment No. 06** |

**Question 1: Define Object Oriented Programming Language?**

### **Object Oriented Programming:**

Object Oriented Programming (OOP) is a programming paradigm like Procedural Oriented Programming (POP). If the tasks are highly complex, OOP operates well as compared to POP. In OOP, the main component is an “Object”, on which we can define different attributes and methods. The creation of these objects is based on a **programmer defined blue print which is known as class.**

**Question 2: List down the Benefits of OOP?**

### **Benefits of Object Oriented Programming:**

OOP’s main concern is to hide the data from non-member functions of a class, which it treats like “critical information”. Data is closely tied to the member functions of a class, which operates on it. It doesn’t allow any non-member function to modify the data inside it. Objects communicate with each other through member functions to access their data.OOP is developed on the basic concept of “object”, “classes”. In OOP, programs can be divided into modules by partitioning objects and functions, which further can be used as templates for creating new copies of modules, if required.

**Question 3: Differentiate between function and method?**

### **Function:**

A function is a set of code which performs a specific task. That designed function can be called within the program at any instance to perform the same task without writing the whole piece of code. A function in OOP is written outside the boundary of class so it can be used in the whole code, irrespective of the classes.

### **Method:**

A method is a similar feature to functions in OOP which can be performed on either objects of the class. The main thing which differentiates the method to a function is that it is defined within the boundary of the class. The defined method can only be applied to all the objects of that particular class only. That method cannot be applied to the objects of other class or anywhere in the code that is not associated with that class.

**Question 4: Define the following terms:**

**1. Class**

**2. Object**

**3. Attribute**

**4. Behavior**

### **CLASS:**

A user-defined prototype for an object that defines a set of attributes that characterize any object of the class. The attributes are data members (class variables and instance variables) and methods, accessed via dot notation.

### **OBJECT:**

A unique instance of a data structure that's defined by its class. An object comprises both data members (class variables and instance variables) and methods.

### **ATTRIBUTE:**

An attribute can be defined as a property of a class which is present in all of its objects. The specific value of that attribute of every object is unique which will make it unique from others.

### **BEHAVIOR:**

 A class's behavior determines how an instance of that class operates; for example, how it will "react" if asked to do something by another class or object or if it’s internal state changes. Behavior is the only way objects can do anything to themselves or have anything done to them.

**Question 5: Write a code in python in which create a class named it Car which**

**Have 5 attributes such like (model, color and name etc.) and 3 methods. And create 5 object instance from that class.**

