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Python Assignment # 06

Ques # 01: Define Object Oriented Programming Language?

Ans:Object Oriented Programming (OOP) is a practice , is a way how to coding. It is a domain or a paradigm that where we get benefits. OOP is based on object and classes in the real world scenario.

For example :

A car having multiple attributes like tyres ,doors,stairing,wheels,seats etc each attribute of a car is an object and a car is a class.

Class : it is a place where the behaviors and attributes related to the object is defined. class is the collection of objects.

Object : implement the class in the real world. Object is the instance of class. Object is made from data and function.

Function : if mobile is an object , calling messaging audio video is the functions of an object.

Attributes : Color, price , size is attributes of an object(mobile)

Data : when object is created , object possesses the data.

In OOP class a template in which objects’s attribute and behavior exist and object implement it in the real world , when program run objects message pass to communicate with other objects.

OOP has 4 pillar :

1. **Inheritance :** parent and child class occurred. Child class can access attributes of parent class while parent class cannot access the drived class attributes. inheritance also used as a reusability.
2. **Polymorphism :** in polymorphism Object can be processed differently according to the provided data. For example if a function name shape it can be used as a shape of triangle, shape of circle , shape of square according to the given data is called polymorphism
3. **Abstraction:** Showing only related info and hiding unnecessary information.

Abstract class must having abstract method as well can have concrete method but normal classes cannot have abstract methods.

1. **Encapsulation :** data hiding. Who can see the data and from whose data is hide.
   1. Public
   2. Private
   3. Protected
   4. Default

Ques # 02 : List down the Benefits of OOP?

Ans : **Advantages/Benefits of OOP :**

* Code reuse
* Data encapsulation
* Very good for GUI applications
* Easy to build real-world applications
* Easy to maintain a software

Ques # 03 : Differentiate between function and method?

Ans :

|  |  |
| --- | --- |
| FUNCTIONS | METHODS |
| Functions can be call directly without creating an object | Methods call by methods |

Question 4: Define the following terms:

1. Class
2. Object
3. Attribute
4. Behavior

Ans :

**Class :** class has the bluprints of all objects. The place where the behaviors and attributes related to the objects are defined. Class is the collection of objects.

**Object :**object is the instance of class. It impelement the class in the real world. Object is made from the functions and data.

**Attribute :** Every class contains attributes and behaviors. Attributes are the characteristics of the class that help to distinguish it from other classes.

**Behavior :**Behaviors are the tasks that an object performs. A person's attributes, for example, include their age, name, and height, while their behaviors include the fact that a person can speak, run, walk, and eat.