Introduction to oop:

* Object-oriented programming, commonly referred to as OOP, is an approach which helps you to develop complex applications in a way that's easily maintainable and scalable over the long term. In the world of OOP  (to create object in PHP), real-world entities such as person or car or animal are treated as objects. In object-oriented programming, you interact with your application by using objects. This contrasts with procedural programming, where you primarily interact with functions and global variables.

Object is a thing that:

1. **From the real world**
2. **You want to store information about**
3. **Have another name (entity)**

***1-Abstraction : means to simplify the reality and focus on the data and processes relevant to the application being built***

**-A class is a template for creating an object and a class is a code defined by a programmer to define the attribute and the operations of an object**

-The class defines properties

**- the attribute is describe the object and they’re sometimes referred to as a fields because it’s containing data , most programmers know them as a properties**

**Operations are actions that can be done to or performed by the object and sometimes refers as behaviors but commonly known as a methods**

**they are used to access and manipulate object properties and perform related operations**

**Method are programs within the class that are coded either as procedures or functions**

**An object is being instantiated by means of a special method called new and this method known as constructor**

A constructor is a special class method which is called automatically when you instantiate an object.

|  |
| --- |
|  |
| $objEmployee =new Employee('Bob', 'Smith', 30); |

 use the new keyword when you want to instantiate an object of any class along with its class name, and you'll get back a new object instance of that class.

If a class has defined the \_constructor method and it requires arguments, you need to pass those arguments when you instantiate an object. In our case, the Employee class constructor requires three arguments, and thus we've passed these when we created the $objectEmployee  object

**2-Encapsulation :-**

**This means to hide the complexity of the inner workings of an object from the programs and the programmers that make use of it , it often refers to information hiding the data contained within an object and the functions that manipulate the data are bound together and therefore safe from outside interference**

**Access Levels**

**When you define a property or a method in a class, you can declare it to have one of these three access levels*—*public, private, or protected.**

**Public Access**

**When you declare a property or a method as public, it can be accessed from anywhere outside the class. The value of a public property can be modified from anywhere in your code**.

**Private Access**

**When you declare a property or a method as private, it can only be accessed from within the class. This means that you need to define getter and setter methods to get and set the value of that property.**

**Protected Access**

**when you declare a property or a method as protected, it can be accessed by the same class that has defined it and classes that inherit the class**

**3-Inheritance:-**

**that’s mean that a class can derive its methods and properties from another class ,inheritance can result in hierarchy of class**

1. **Polymorphism:-**

**It’s mean that the class can implement an inherited method in it’s own way ( inherits with a new version on it’s own like different forms of the same type of object with the same interface can behave in different ways )**

**Polymorphism literally means many forms**

Note: Some object-oriented languages also have a kind of method overloading that lets you define multiple class methods with the same name but a different number of arguments. This isn't directly supported in PHP, but there are a couple of workarounds to achieve similar functionality.