OOPS-Features

1601-15-733-072

Answer:

The main features of Object Oriented Programming Systems are: objects, classes, inheritance, polymorphism, abstraction and encapsulation.

Object:- An object is a real time entity that has state and behavior, and is physically existing or present. An object can also be defined as an instance of a class. Examples: pen, pencil, books.

Class:- A class is a model or prototype used to create objects. It is a template which describes the data and behavior associated with objects (instances) of that class.

Inheritance:- It is the process by which one class (derived/child/subclass) acquires the properties of another class (base/parent/superclass). Inheritance provides code reusability and it is used to implement runtime polymorphism. Example: class Dog is derived from class Mammal

Polymorphism:- Polymorphism is when one task is performed in several different ways. It is also known as the ability of an object to take on many forms. In Java, method overloading is used to achieve static polymorphism and method overriding is used to achieve dynamic polymorphism. Example: Shape class has general area() method and its subclasses have area() method with different
method definition

Abstraction:- Abstraction is the hiding of internal details and showing only the functionality. For example, when someone driving a car presses the brake or accelerate pedal it is understood that the
car will slow down or speed up accordingly; however, the process behind these actions is unknown.

Encapsulation:- Encapsulation in Java is the concept of wrapping the data (variables) and code acting on the data (methods) together as a single unit, and keeps both safe from outside interference
and misuse. Access to the code and data inside the wrapper is tightly controlled through a well-defined interface. Example:- In a tablet, the capsule protects the medicine within.