

Day 2: Assignment - OOPs Concepts

Problem statement - Create an abstract class - Animal having the following properties and getter/setter methods and other behavior methods..

- name : String
- no-args constructor
- constructor initializing all fields
- getter/setter methods
- makeNoise() - abstract method
- sleep() - print any statement using println() method in this method i.e. Animal is sleeping
- eat() - abstract method

Now create two classes extending Animal as base class as following

Dog class

- breed : String
- no-args constructor
- constructor initializing all fields of this class
- constructor initializing field of this + name of super class
- getter/setter methods
- Override makeNoise() and eat() methods
- define new method - play() : void (it should print any statement i.e. - Dog is playing)

Cat class

- nickName: String
- no-args constructor
- constructor initializing all fields of this class
- constructor initializing field of this + name of super class
- getter/setter methods
- Override makeNoise() and eat() methods
- define new method - jump() : void (it should print any statement i.e. - Cat is jumping)

Main class

- should have the main() method
- create objects of Cat and Dog using superclass reference variable
 - i.e. Animal animal = new Cat();
- try to call all the methods on the object reference variable and observe the output

NOTE: The objective of the above problem statement is to get understanding on the following concepts

- Objects and relationship (inheritance)
- Role of constructors in inheritance
- Concepts of overriding and overloading methods
- use of super keyword to initialize objects properly from subclass instance
- Type Casting supertype into subtype
- Understanding polymorphism, encapsulation, inheritance