## Class and Object

**1.** Create a class Bulb with attributes (**isOn, name, price**), methods (**turnOn() turnOff(), displayName(), displayPrice()**)**.** Create objects of this class and execute these methods.

- In this question you will learn how to create a class with attributes and methods.
- Class is simply a blueprint, which does not exist physically on earth, so we have to create some physical form of it. That physical form is nothing but the object.
- In the above question Bulb is a class which represents a group of bulbs. LED bulb, Spotlight bulb, Sodium bulb, Reflector bulb etc., are the examples of objects.

**2.** Create class Television with required attributes and methods. Create different types of Television objects(BPL, Sony, Samsung, LG).

-> For the above two questions, create multiple objects with meaningful names, analyse the execution flow and do some kind of experiments which comes to your mind.

**Task:** Observe your surroundings and think can you create a class and object of those.

## Single Inheritance

**1.** Create a class Appliance with attribute (**name**), methods (**turnOn(), turnOff())**. Inherit this class into WashingMachine class with attributes (**brand, price, capacity, type**, remaining from base class**),** methods (**washCloths(), airDrying(), childLock(), displayFeatures()**).

**2.** Create a class Person with attributes (**name, age, gender**), methods (**displayDetails()**). Inherit this class into Student class with

attributes (**standard, course, grade,** remaining from parent class), methods (**study(), sleep(), eat(), upgradeSkills(),** remaining from base class).

-> For the above two questions experiment with super method and method overriding if possible.

## Multilevel Inheritance

**1.** Create a class with your grandfather name, method (**ownLand()**), inherit it to a class with your father's name, method (**ownHouse()**). Create a class with your name and inherit your father's class to your's, and method as (**ownCar()**).

**2.** Create classes as Vehicle (attributes: **brand, model, year**. Methods: **start(), stop(), break(), displayDetails()**) → Car(attributes: **seats, fuel_type.** Methods: **playMusic(), openSunRoof(),** override and extend **displayDetails()**) → SportsCar(attributes: **top_speed.** Methods: **applyNitrous(),** remaining methods from Vehicle and Car, override and extend them accordingly).

**For multiple inheritance and hierarchical inheritance try to formulate questions on your own and solve them.**