OOP Real time Example – A Refrigerator

A Refrigerator can be taken as an example for exaplaining the OOP concepts . A refrigerator is an object in real life . A refrigerator has attributes such as name, color , capacity , weight and methods such us refrigerate and freeze. Now if take a Red LG Refrigerator with 200 L capacity , it is an object and is an instance of the class Refrigerator.

Encapsulation

A refrigerator can store fruits , milk , vegetables etc and keep them cool . The user may not worry about the internal process of cooling and can place all the things the product support.

Abstraction

Refrigerator has separate sections for cooling and deep freeze. These features can be compared to abstract methods since the user may not bother how the deep freeze works , but just need to keep the item in the freezer and set the desired freezing level.

Inheritance

There are types of refrigerators in market such as single door , two door and smart refrigerators.

All these types can be inherited from a base refrigerator type which has attributes such as color , capacity , height , weight and methods such us refrigerate or freeze. A child instance such as a smart refrigerator can have additional attributes and methods such as monitoring , reminders etc.

Polymorphism

A smart refrigerator usually comes with a water dispenser. The same has warm , regular and cold options as well. This is a good example of static polymorphism where the user get water through the same outlet however the internal call does different functions based on the user selection of ‘warm/regular/cold’ button.

A smart refrigerator can also regulate its temperature based on the contents it has which is a good example of dynamic polymorphism . Here the refrigerate method from the parent class (refrigerator) is overriden by the smart refrigerator during its operation.