Object-Oriented Programming Concepts
Coffee Machine Example

1. Encapsulation (Grouping)

It is the body of the coffee machine. Inside it, you have the beans, the water, the grinder, and the brewing program. Everything needed to make coffee is bundled together in one unit.

In simple words: "Everything in one package."

2. Data Hiding (Protection)

You cannot reach inside the machine to touch the heater or tweak the gears. All important parts are hidden behind a steel panel. You cannot directly change the amount of beans in the hopper without following the proper process (buying a coffee).

In simple words: "Look, but don't touch."

3. Abstraction (Simplification)

On the front panel, you only have a few buttons: "Espresso" or "Cappuccino." You don't need to know the steam pressure or the exact water temperature. You press a button, and you get a result. The buttons are the abstraction.

In simple words: "Don't bore me with details, just give me the result."