# Assignment #15

part-2

Q.  What is the difference between a class and an object in Python?

A **class** is like a blueprint or template used to create an **object** or instance of that class. **Class** is like a map we used to build houses and houses we build using that map are **objects** of that class.

Q. Explain encapsulation and data hiding with code example.

**Encapsulation**:Encapsulation means bundling data (variables) and methods (functions) into a single unit — a class. It allows us to control access to the data and protect it from unintended changes.

**Data Hiding**:Data hiding is the idea of restricting direct access to some parts of an object — usually by making variables private. This is done using naming conventions like _protected and __private.

Q. What is inheritance and how is it implemented in Python?

Inheritance is a concept in oop in python in which a child class inherits the properties of its parent class. That helps in code reuse ability, extending functionality, and code organizing .

Q. What is method overriding in subclasses?

**Method overriding** means a subclass defines a method with the same name as one in its parent class, but provides a different implementation. When the method is called on a subclass object, the subclass version is used — not the one in the parent class.

Q. Why is self required in instance methods?

**Self** refers to the current object (instance) of the class.
It is required in instance methods so Python knows which object's data or method to access or modify.