**Assignment: Hospital Management Using Classes and Objects (Python)**

**Problem Statement:**

You are required to design a **simple hospital management system** using **Python classes and objects**. The system should:

1. Register new **patients**
2. Add new **doctors**
3. Assign doctors to patients
4. Display all doctor and patient information

Use object-oriented programming (OOP) principles such as class creation, constructors, instance methods, and object composition (a doctor is assigned to a patient).

### Task 1: Create a Doctor class

Define a class named Doctor with the following attributes and methods:

* Attributes: doctor\_id, name, specialization
* Method: display\_info() — prints doctor details

### Task 2: Create a Patient class

Define a class named Patient with:

* Attributes: patient\_id, name, age, disease, assigned\_doctor
* Methods:
  + assign\_doctor(doctor) — assigns a doctor
  + display\_info() — prints patient details including the doctor if assigned

### Task 3: Create a Hospital class

This class should manage lists of doctors and patients. Implement:

* add\_doctor(doctor)
* register\_patient(patient)
* assign\_doctor\_to\_patient(patient\_id, doctor\_id)
* display\_all\_doctors()
* display\_all\_patients()

### Task 4: Write a main block to test the program

Create objects and test all the functionality:

**Expected Output:**

