Exp. No.: 4b SPOT - Implementation of simple inheritance, static nested class, inner class, abstract class, upcasting, downcasting, ,method overloading and method overriding.

Hospital Management System - A hospital requires a digital system for patient-doctor management.

- The **base class** `Person` contains details like name and contact.

- Subclasses `Doctor` and `Patient` extend it.

- A **static nested class** `Hospital.Admin` manages the assignment of hospital rooms.

- An **inner class** inside `Doctor` called `Schedule` represents daily appointments.

- An **abstract class** `Treatment` defines `provideTreatment()` to be implemented differently by `Surgery` and `Therapy`.

- Demonstrate **method overloading** in `Doctor` with multiple versions of `prescribeMedicine()` (by drug name, by drug name + dosage).

- Demonstrate **method overriding** in `Patient` to show how `getDetails()` is implemented differently from `Person`.

- Use **upcasting** when storing patients and doctors in a common `Person[]` array.

- Use **downcasting** when accessing patient-specific medical history.

Write Java program to simulate a doctor scheduling appointments, a patient getting treatment, and hospital admin assigning rooms.