Hotel Rooms Management Application

This project demonstrates object-oriented programming concepts such as inheritance (Person, Room), abstraction (abstract classes), encapsulation (private fields with public getters/setters), and composition (Customer having a Room object). It simulates a scenario where customers rent rooms, and their details along with room details are managed and displayed.

Classes Description:

1. **Person (abstract class):**
   - Represents a generic person with basic attributes like ID, name, and contact number.
   - Constructor initializes these attributes.
   - `show()` method is abstract, meant to be overridden to display specific details for subclasses.
2. **Room (abstract class):**
   - Represents a generic room with attributes such as room ID, room number, and room fare.
   - Constructor initializes these attributes.
   - Includes getters and setters for these attributes.
   - `roomInfo()` method is abstract, meant to be overridden to display specific details for subclasses.
3. **StandardRoom (subclass of Room):**
   - Inherits from `Room`.
   - Additional attribute `ac_availability` to denote if the room has air conditioning.
   - Overrides `roomInfo()` to display standard room details including AC availability.
4. **DeluxeRoom (subclass of Room):**
   - Inherits from `Room`.
   - Additional attribute `roomSize` to specify the size of the room.
   - Overrides `roomInfo()` to display deluxe room details including room size.
5. **Customer (subclass of Person):**
   - Inherits from `Person`.
   - Has-a relationship with `Room` (composition), indicating which room the customer has rented.
   - Includes a method `rentRoom()` to set the room ID for the customer.
   - Overrides `show()` to display customer details including the rented room ID.
6. **Main (main class):**
   - Contains the `main()` method where instances of `DeluxeRoom`, `StandardRoom`, and `Customer` are created and demonstrated.
   - Shows how rooms are created and their details displayed, and how a customer rents a room and their details are displayed.