Hotel Reservation System - Initial Attribute and Method Tables

# Initial Attribute Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Class Name | Attribute Name | Data Type | Visibility | Rationale |
| Room | roomID | String | private | Unique identifier for each room |
| Room | type | String | private | Type of room (e.g., Single, Double, Suite) |
| Room | price | double | private | Cost per night |
| Room | isAvailable | boolean | private | Indicates if room is currently free |
| Room | capacity | int | private | Maximum number of occupants allowed |
| Customer | customerID | String | private | Unique ID for the customer |
| Customer | name | String | private | Full name of the customer |
| Customer | phoneNumber | String | private | Contact number |
| Customer | email | String | private | Email address of customer |
| Reservation | reservationID | String | private | Unique ID for the reservation |
| Reservation | checkInDate | LocalDate | private | Date of check-in |
| Reservation | checkOutDate | LocalDate | private | Date of check-out |
| Reservation | isConfirmed | boolean | private | Indicates if reservation is confirmed |
| Reservation | customer | Customer | private | Customer who made the reservation |
| Reservation | room | Room | private | Room that has been reserved |
| Payment | paymentID | String | private | ID of the payment |
| Payment | amount | double | private | Amount paid |
| Payment | isPaid | boolean | private | Shows if payment is successful |
| Payment | reservationID | String | private | Links payment to reservation |
| HotelManager | hotelName | String | private | Name of the hotel |
| HotelManager | rooms | ArrayList<Room> | private | Collection of hotel rooms |
| MainSystem | (none) | — | — | Main logic controller (no attributes) |

# Initial Method Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Class Name | Method Name | Return Type | Visibility | Rationale |
| Room | showRoomInfo() | void | public | Displays room details |
| Room | isAvailable() | boolean | public | Returns availability status |
| Room | setAvailability() | void | public | Sets availability to true/false |
| Customer | registerCustomer() | void | public | Registers a new customer |
| Customer | viewProfile() | void | public | Displays customer details |
| Customer | updateContact() | void | public | Modifies phone or email info |
| Reservation | createReservation() | void | public | Creates a new reservation |
| Reservation | cancelReservation() | void | public | Cancels an existing reservation |
| Reservation | isConfirmed() | boolean | public | Checks if reservation is confirmed |
| Reservation | showReservationInfo() | void | public | Displays reservation information |
| Payment | processPayment() | boolean | public | Simulates a payment transaction and returns result |
| Payment | markAsPaid() | void | public | Marks the payment as successful |
| Payment | showPaymentStatus() | void | public | Displays payment confirmation or failure message |
| HotelManager | addRoom() | void | public | Adds a room to the hotel inventory |
| HotelManager | listAvailableRooms() | void | public | Displays all free rooms |
| HotelManager | findRoomByType() | Room | public | Returns room object matching a given type |
| MainSystem | showMenu() | void | public | Displays user options |
| MainSystem | handleUserInput() | void | public | Captures and processes user input |
| MainSystem | callOtherModules() | void | public | Coordinates between system modules |