

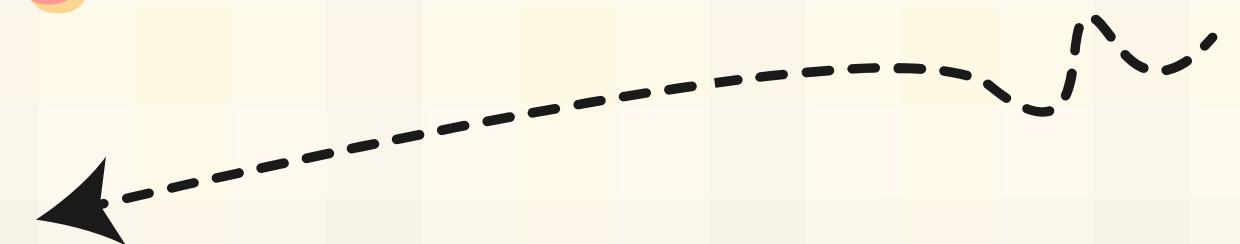


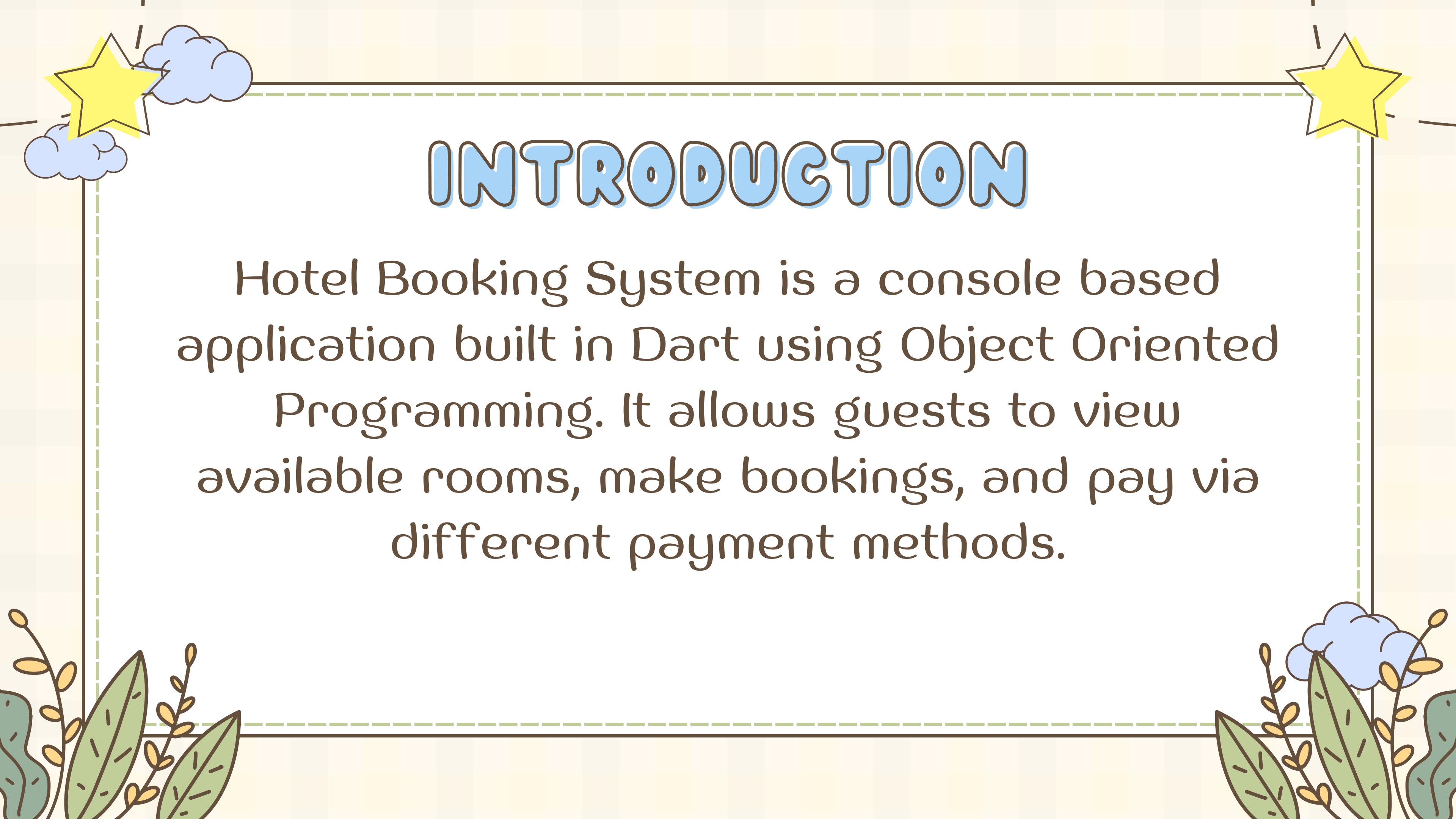
# HOTEL BOOKING SYSTEM

by Shahd Tarek

# ABOUT ME

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# INTRODUCTION

Hotel Booking System is a console based application built in Dart using Object Oriented Programming. It allows guests to view available rooms, make bookings, and pay via different payment methods.

# CLASS

- 1-Guest
- 2-Room
- 3-Hotel
- 4-Booking
- 5-Payment



# CLASS - GUEST



**Class Role:** Represents a customer who interacts with the hotel system to make reservations and manage bookings.

## Properties:



- `name: String` - Full name of the guest. Used to identify the user.
- `email: String` - Guest's email for communication.
- `phoneNumber: String` - Contact number for the guest.

## Methods:



- `displayInfo()`: Displays the guest's full information.

# ABSTRACT CLASS - ROOM

**Class Role:** Serves as the base class for different types of rooms in the hotel.

## Properties:

- roomNumber: int - Unique number for the room.
- pricePerNight: double - The cost per night for the room.

## Methods:

- `displayDetails()`: Displays the room's number and price per night.

# CLASS - BOOKING

**Class Role:** Represents a reservation made by a guest for a specific room and duration in the hotel.

## Properties:

- **guest:** Guest - The guest making the booking.
- **room:** Room - The room being booked by the guest.
- **nights:** int - The number of nights the guest intends to stay.

## Methods:

- **calculateTotal():** Calculates the total cost of the booking by multiplying the price per night by the number of nights.
- **displayBooking():** Displays the details of the booking including guest, room, and dates.

# ABSTRACT CLASS - PAYMENTMETHOD

## Class Role:

Provides an interface for all payment methods  
that can be used to pay for bookings.

## Methods:

- **pay(double amount):** Abstract method that processes the payment (to be implemented in subclasses).

# SUBCLASSES -

## CREDITCARDPAYMENT / CASHPAYMENT

### Class Role:

Implements different payment methods to process bookings:

- CreditCardPayment: Handles payments using credit card details.
- CashPayment: Handles payments made with cash.

### Methods:

- `pay(double amount)`: Implemented in both subclasses to process payments according to the selected method.

# RELATIONSHIPS

- GUEST  $\leftrightarrow$  BOOKING (ONE TO MANY): A GUEST CAN MAKE MULTIPLE BOOKINGS.
- HOTEL  $\leftrightarrow$  ROOM (ONE TO MANY): A HOTEL CONTAINS MANY ROOMS.
- BOOKING  $\leftrightarrow$  ROOM (ONE TO ONE): A BOOKING IS ASSOCIATED WITH ONE SPECIFIC ROOM.
- BOOKING  $\leftrightarrow$  PAYMENTMETHOD (ONE TO ONE): A BOOKING USES ONE PAYMENT METHOD.

# SUMMARY

THIS SYSTEM DEMONSTRATES REAL-WORLD HOTEL OPERATIONS USING CORE OOP PRINCIPLES SUCH AS:

- INHERITANCE (ROOM TYPES, PAYMENT TYPES)
- ABSTRACTION (ROOM AND PAYMENTMETHOD BASE CLASSES)
- COMPOSITION (BOOKING LINKS GUEST AND ROOM)
- POLYMORPHISM (PAYMENT HANDLING IN DIFFERENT PAYMENT TYPES)

**THANK YOU**