This program demonstrates the **Adapter Design Pattern**, which allows incompatible interfaces to work together by creating a bridge between them. The Adapter pattern is particularly useful when an existing class has a different interface than what the client expects. It lets you use these classes as if they implement the target interface without modifying them.

**Class Breakdown:**

1. **PaymentGateway (Target Interface)**:
   * This is the **target interface** that defines the method makePayment(double amount), which the client expects to use for processing payments.
   * Any payment service used by the client must implement this interface to conform to the expected behavior.
2. **PayPal (Adaptee 1)**:
   * This class represents a third-party payment processing system (PayPal) with its own interface, which is incompatible with PaymentGateway.
   * It has a method processPayment(double amount), which processes a payment in a way that PayPal requires.
3. **Stripe (Adaptee 2)**:
   * This class represents another third-party payment service (Stripe) that uses a method processCharge(double amount) to handle payments, which also doesn't conform to the PaymentGateway interface.
4. **PayPalAdapter (Adapter for PayPal)**:
   * This is an **adapter class** that adapts the PayPal class to conform to the PaymentGateway interface.
   * It contains a reference to an instance of PayPal.
   * In the makePayment(double amount) method, it internally calls payPal.processPayment(amount) to handle the payment via PayPal, making it compatible with PaymentGateway.
5. **StripeAdapter (Adapter for Stripe)**:
   * This adapter adapts the Stripe class to the PaymentGateway interface.
   * It holds a reference to an instance of Stripe.
   * In the makePayment(double amount) method, it internally calls stripe.processCharge(amount) to handle the payment via Stripe, again making it compatible with PaymentGateway.
6. **Client (AdapterPatternDemo)**:
   * This is the **client code** that demonstrates the usage of the adapter pattern.
   * It creates a PayPalAdapter object to adapt a PayPal instance to the PaymentGateway interface.

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