



This class diagram represents the core components of a simplified e-commerce system, focusing on four primary classes: User, Order, Product, and Payment.

#### User:

The User class encapsulates user-related information such as user ID, name, email, and password.

It includes methods for creating orders, viewing existing orders, and managing order details like Updating Order Status, Modifying Order Details, Canceling Orders.

A single user can have multiple orders, establishing a one-to-many relationship (1..\*).

#### Order:

The Order class represents customer orders, containing attributes like order ID, status (e.g., pending, completed, shipped), total amount, and a reference to the user ID.

Each order can include multiple products, reinforcing the relationship with the Product class (1..\*).

It provides functionality to add products, view order details, and update the order status.

#### Product:

The Product class holds information about individual products, including product ID, name, description, price, image and stock quantity.

While each product can be part of multiple orders, the focus here is on how products relate to orders through the order's methods.

#### Payment:

The Payment class handles payment transactions, storing details such as payment ID, associated order ID, payment amount, and payment status.

It supports processing payments and handling refunds.

---

