**Program 1: Abstraction with YouTube Videos**

Description of Classes

**1. Video Class**

Attributes:

title (string): The title of the video.

author (string): The author of the video.

length (int): The length of the video in seconds.

comments (List<Comment>): A list to store comments associated with the video.

Methods:

GetCommentCount(): This method returns the number of comments on the video.

The Video class contains a list of Comment objects, demonstrating a one-to-many relationship.

**2. Comment Class**

Attributes:

name (string): The name of the person who made the comment.

text (string): The text of the comment.

Comment class is simple with only properties to hold the commenter's name and the comment text.

Relationships:

The Video class has a one-to-many relationship with the Comment class, meaning each video can have multiple comments.

**Program 2: Encapsulation with Online Ordering**

Description of Classes

**1. Order Class**

Attributes:

products (List<Product>): A list of products in the order.

customer (Customer): The customer who placed the order.

Methods:

GetTotalCost(): Calculates the total cost of the order.

GetPackingLabel(): Returns a string for the packing label.

GetShippingLabel(): Returns a string for the shipping label.

**2. Product Class**

Attributes:

name (string): The name of the product.

id (string): The product ID.

price (double): The price per unit of the product.

quantity (int): The quantity of the product.

Methods:

GetTotalCost(): Computes the total cost of the product.

**3. Customer Class**

Attributes:

name (string): The name of the customer.

address (Address): The address of the customer.

Methods:

IsInUSA(): Returns whether the customer lives in the USA or not.

**4. Address Class**

Attributes:

street (string): The street address.

city (string): The city.

state (string): The state or province.

country (string): The country.

Methods:

IsInUSA(): Returns whether the address is in the USA or not.

GetFullAddress(): Returns a string with all fields combined appropriately.

Summary:

Order Class: Manages a list of products and customer information, computes total cost, and provides packing and shipping labels.

Product Class: Contains details about a product and computes its total cost.

Customer Class: Contains customer details and checks if the customer is in the USA.

Address Class: Manages address details and checks if the address is in the USA.

This code follows the encapsulation principle, ensuring that all member variables are private and accessed via public methods or properties. It creates instances of orders with products, and displays packing labels, shipping labels, and total costs as specified.