**Foundation Program #1: Abstraction with YouTube Videos**

**Program Purpose**

The program keeps track of YouTube videos and their comments. For each video, it stores the title, author, length (in seconds), and a list of comments. Each comment stores the commenter’s name and text. The program displays all this information.

**Classes and Responsibilities**

**Class: Video**

* **Responsibilities**
  + Store title, author, length in seconds.
  + Store list of comments.
  + Return the number of comments.
  + Display video details (including comments).
* **Attributes**
  + title : string
  + author : string
  + lengthInSeconds : int
  + comments : List<Comment>
* **Methods**
  + AddComment(comment : Comment)
  + GetNumberOfComments() : int
  + DisplayVideoDetails()

**Class: Comment**

* **Responsibilities**
  + Store commenter name and comment text.
* **Attributes**
  + commenterName : string
  + text: string

**Foundation Program #2: Encapsulation with Online Ordering**

**Program Purpose**

The program manages online product orders. Each order contains products and a customer. The program can compute the total price (including shipping), generate packing labels (products + IDs), and shipping labels (customer + address).

**Classes and Responsibilities**

**Class: Product**

* **Responsibilities**
  + Store product details.
  + Compute total cost based on price × quantity.
* **Attributes**
  + name : string
  + productId : string
  + price : double
  + quantity : int
* **Methods**
  + GetTotalCost() : double
  + GetPackingLabel() : string

**Class: Address**

* **Responsibilities**
  + Store address details.
  + Determine if in USA.
  + Return formatted address string.
* **Attributes**
  + street : string
  + city : string
  + stateOrProvince : string
  + country : string
* **Methods**
  + IsInUSA() : bool
  + GetFullAddress() : string

**Class: Customer**

* **Responsibilities**
  + Store name and address.
  + Determine if customer lives in USA.
* **Attributes**
  + name : string
  + address : Address
* **Methods**
  + LivesInUSA() : bool
  + GetName() : string
  + GetAddress() : Address

**Class: Order**

* **Responsibilities**
  + Store customer and list of products.
  + Calculate total order cost (including shipping).
  + Generate packing and shipping labels.
* **Attributes**
  + products : List<Product>
  + customer : Customer
* **Methods**
  + AddProduct(Product)
  + GetTotalCost() : double
  + GetPackingLabel() : string
  + GetShippingLabel() : string