W04 Team Activity: Foundation programs Design

**Outline for YouTube Video Program (Abstraction)**

**Goal:** Track YouTube videos with their title, author, length, and comments.

**🔹 Classes & Responsibilities**

**1️⃣ Video Class**

* **Attributes:**
  + title (string) → Stores video title.
  + author (string) → Stores video author.
  + length (int) → Stores video length in seconds.
  + comments (List<Comment>) → Stores a list of comments.
* **Methods:**
  + GetCommentCount() → Returns the number of comments.
  + DisplayVideoInfo() → Displays video details along with comments.

**2️⃣ Comment Class**

* **Attributes:**
  + commenterName (string) → Stores the name of the person commenting.
  + commentText (string) → Stores the comment text.
* **Methods:**
  + DisplayComment() → Displays the comment's author and text.

**📌 Outline for Online Ordering Program (Encapsulation)**

**Goal:** Manage orders with products, customers, and addresses while keeping data secure.

**🔹 Classes & Responsibilities**

**1️⃣ Product Class**

* **Attributes:**
  + name (string) → Stores product name.
  + productId (int) → Stores unique product ID.
  + price (double) → Stores price per unit.
  + quantity (int) → Stores quantity purchased.
* **Methods:**
  + GetTotalCost() → Returns total cost (price \* quantity).

**2️⃣ Address Class**

* **Attributes:**
  + street (string) → Stores street address.
  + city (string) → Stores city.
  + state (string) → Stores state/province.
  + country (string) → Stores country.
* **Methods:**
  + IsInUSA() → Returns true if country is "USA", otherwise false.
  + GetFullAddress() → Returns formatted address.

**3️⃣ Customer Class**

* **Attributes:**
  + name (string) → Stores customer name.
  + address (Address) → Stores customer’s address (Composition).
* **Methods:**
  + LivesInUSA() → Calls IsInUSA() on the address.

**4️⃣ Order Class**

* **Attributes:**
  + products (List<Product>) → Stores ordered products.
  + customer (Customer) → Stores order’s customer.
* **Methods:**
  + CalculateTotalCost() → Returns total price (sum of product totals + shipping fee).
  + GetPackingLabel() → Returns a string listing product names and IDs.
  + GetShippingLabel() → Returns a string listing customer name and address.