**Class Diagram Design**

Foundation #1 YouTube Videos

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| Video |
| \_title : string  \_author : string  \_lengthSeconds : int  \_comments : List<Comment> |
| Video(title : string, author : string, lengthSeconds : int)  NumberOfComments() : int  DisplayVideoInfo : void |

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| Comment |
| \_name : string  \_text : string |
| Comment(name : string, text : string)  DisplayCommentInfo() : void |

The program will store the instances of video information to Video and Comment class by calling Video, Comment method and display the video and comment information to the console by calling the DisplayVideoInfo and DisplayCommentInfo method.

Foundation #2 Online Ordering

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| Product |
| \_name : string  \_id : string  \_price : decimal  \_quantity : int |
| Product( name : string, id : string, price : decimal, quantity : int )  SubTotalCost() : decimal |

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| Customer |
| \_name : string  \_address : Address |
| Customer(name : string, address : Address)  InUsa() : bool |

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| Address |
| \_street : string  \_city : string  \_state : string  \_country : string |
| InUsa() : bool  GetDisplayText() : string |

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| Order |
| \_products : List<Product>  \_customer : Customer |
| TotalCost() : decimal  ShippingCost() : decimal  GetPackingLabel(name : string, id : string)  GetShippingLabel(name : string, address : Address) |

This program will get the order from the customer and list up the products with the price and quantity to calculate the total cost of the order. The address class stores the information of the customer’s address and assesses whether the customer lives in US or not to discern the shipping cost. The order class calls the customer class, address class and product class to calculate the total cost including shipping cost and create packing and shipping label.