Jorge Javier Mejorada Hernández. Wednesday, March 29, 2023.

* Week 06 –   
  **Final Project Plan.**
* **Program:**

Foundation 4 Project Option

* **Project description:**

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

This program should store the information about a video from YouTube and the comments of it. The program I going to have a class **Video** to track the title, author and length (in seconds) of the video, then would be a class **Comment** to track the name of the person who made the comment and the text of the comment. It’s going to be necessary a **Program** to create a list of 3-4 videos, 3-4 comments with the commenter´s name and the comment text, then the **Program** would iterate trough each video in the list and display the title, the author, the length, the number of comments and the comment text.

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

This program should produce packing labels, shipping labels, and compute final prices for billing for a company which sell products online. It’s going to have a **Product** class to contain the name, product id, price, and quantity of each product, the final price is going to be the result of the quantity and price of each product. In second place is going to have a **Costumer** class this contains the name and address (The address would be a class) of the customer, after that we have the **Address** class this one contains a string for the street address, the city, state/province, and country, then we have **Order** class, this one contains a list of products and a customer. Can calculate the total cost of the order, and can return a string for the packing label, and can return a string for the shipping label, last but not least we the **Program** that creates at least two orders with a 2-3 products each. Call the methods to get the packing label, the shipping label, and the total price of the order, and display the results of these methods.​

***Program 3: Inheritance with Event Planning***

This program should track each of these events and produce the marketing material to distribute on social media. ​Lectures, receptions and outdoor gatherings. ​They would like the ability to generate three different messages:​

\* Standard details - Lists the title, description, date, time, and address.

\* Full details - Lists all of the above, plus type of event and information specific to that event type. For lectures, this includes the speaker name and capacity. For receptions this includes an email for RSVP. For outdoor gatherings, this includes a statement of the weather.

\* Short description - Lists the type of event, title, and the date.

This program I going to have an **Event** class which contains event title, description, date, time, and address, after that as a derived class is **Lecture** class which have a speaker name (string) and have a limited capacity (integer), after we have the derived class **Receptions** class which require people register for the event, then we have the derived class **Outdoor** class which do not have a limit on attendees, but need to track the weather forecast (as a string), last but not least our **Program**creates at least one event of each type and sets all of their values. Then, for event, call each of the methods to generate the marketing messages and output their results to the screen.

***Program 4: Polymorphism with Exercise Tracking***

This program is an app for the customers of a gym to track the exercises of the customers. They have facilities for the following:

\* Running: distance

\* Stationary Bicycles: speed

\* Swimming in the lap pool: number of laps

The program must save the date and the length of the activity in minutes.

**A summary in the form of:**

03 Nov 2022 Running (30 min)- Distance 3.0 miles, Speed 6.0 mph, Pace: 10.0 min per mile

1. ov 2022 Running (30 min): Distance 4.8 km, Speed: 9.7 kph, Pace: 6.9 min per km

* This program is going to have **Activity** class this one is going to track the date and the length of the activity, then the **Running** class track the distance (miles or kilometers) when the customer is running, after that the **Cycling** class track the speed (miles per hour or kilometers per hour)​, then the **Swimming** class track the number of laps (minutes per mile or minutes per kilometer)​ and the length of a lap in the lap pool is 50 meters.