

**Course:** Systems Analysis and Design

**Code:** SENG71000

**Professor/Instructor(s):** Akrem El-ghazal

## **Systems Analysis and Design (SENG71000): Fall 2025**

### **Assignment-1**

**Due Date:** 11:59 pm, Sep. 29<sup>th</sup>, 2025

1. Visit some Web sites of car manufacturers, such as Honda, BMW, Toyota, and Acura. Many of these sites have a use case that is typically named *Build and price a car*. As a potential customer, you can select a car model, select features and options, and get the car's suggested price and list of specifications. Consider yourself a **potential buyer** and then identify all the use cases included on the site that correspond to your goals and then draw the use case diagram. You may use any drawing tool, but you should also share the tool's webpage or name. (2 pts.)
2. Consider the classes involved when modeling a car and all its parts. Draw a **domain model class** diagram that shows the whole-part relationships involved, **including multiplicity**? You should have a minimum of 4 car parts. You may use any drawing tool, but you should also share the tool's webpage or name. (1 pts.)
3. Refer to the RMO CSMS Order Fulfillment subsystem shown below. Draw a use case diagram that shows all actors and all use cases. You may use any drawing tool, but you should also share the tool's webpage or name. (1 pts.)

CSMS Order Fulfillment Subsystem	
Use cases	Users/actors
Ship items	Shipping
Manage shippers	Shipping
Create backorder	Shipping
Create item return	Shipping, customer
Look up order status	Shipping, customer, management
Track shipment	Shipping, customer, marketing
Rate and comment on product	Customer
Provide suggestion	Customer
Review suggestions	Management

4. Review information about any University/College (You can use your imagination and create your own College/University). Create generalization/specialization hierarchies by using the **domain model class diagram** notation for (1) types of **faculties**, (2) types of

**students**, (3) types of **courses**, (4) types of **financial aid**, and (5) types of **housing**.

Include attributes for the superclass and the subclasses in each case. You may use any drawing tool, but you should also share the tool's webpage or name. (2 pts.)

5. **Scenario:** During the analysis phase of a project meeting, two potential use cases were brought up that are related to the following events:
- The database reaching its full capacity, and the system should respond to this event.
  - The database crashing and the potential loss of customer information.

If you are in the project meeting, how would you respond to these suggestions? Would you prioritize these use cases during the analysis phase? please provide your justification for your answer. (2 pts.)

6. The overall organization of your report (2 pts.)

#### What to Hand In

Read the Assignment's instructions section in the course shell.