SYS466 Summer 2019
Professor: Tevin Apenteng
Lab 3 (1% of Final Grade): Domain Modeling – Associations
Due: At the end of the lab session

Objective: Practice Domain Modeling of Classes and properly identify the Associations between classes.

This exercise is to be submitted individually. However, you will be working on this lab with your assigned group. Your work will be graded as Acceptable or Unacceptable. Submissions that demonstrate a reasonable amount of thought will receive full marks.

Submission is to be done via Blackboard. Email submissions WILL NOT be accepted.

SYS466 LAB 3 (1%): Associations, Reference Attributes and Sets

- This is a group lab.
- Using StarUML, create the required diagrams as per the instructions in this lab, then post the model you created to Blackboard under the group name for example Lab1Group22.uml
- Only those students who sign in under their group will get credit for the lab.

Setting up StarUML:

- When opening a new model select the default configuration (use case model, analysis model, etc)
- In the <<Analysis Model>> create 3 new models. Name them Exercise 1, Exercise 2 and Exercise 3
    - To do this: Right click on Analysis Model, select Add, select Model. Do these 3 times, one for each of exercise 1, 2, and 3.
- To add a class diagram to a model: Right click on the model (e.g. Exercise 1), select Add Diagram, then Class Diagram.

For this Lab:

- You will be creating 3 class diagrams, each in its own model in the ANALYSIS MODEL
- For each Exercise you will be given several scenarios as well as well as classes and extra information. You will use all the scenarios, classes and information given for each exercise to create ONE class diagram for that exercise.
- Class diagrams should include associations, association names, multiplicity and reference attributes (including any sets)

Exercise 1:

A worker is employed by one or more employment agencies at any point in time. For example, a worker can work for one agency on Mondays and Wednesdays and for another on Tuesdays and Thursdays. Each employment agency employs many workers.

Here are scenarios from a system that is being developed for government human resource workers to monitor agencies and workers to ensure workers are treated fairly.

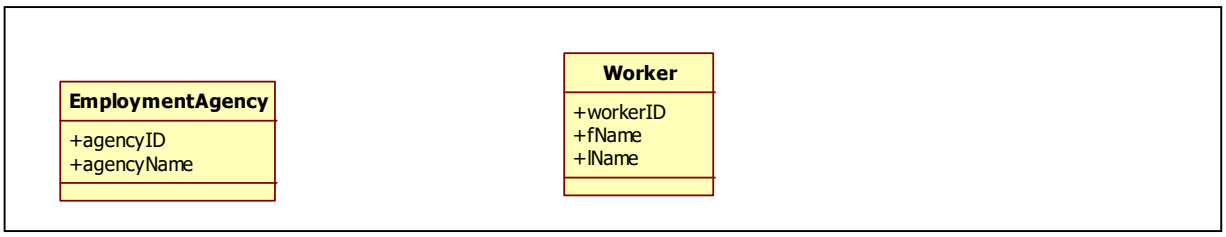
Request a list of employees for an agency

Actor (Government Official)	System
Enters agency name	Retrieves a list of agency workers and displays last name and first name of each worker.

Request a list of agencies employing a specific worker

Actor (Government Official)	System
Enters worker ID	Retrieves all of the agencies that employ the worker. Displays the name and ID of each agency.

You are given the preliminary class diagram shown below.



Exercise 2:

TR Trucks is an agency that rents a variety of trucks. Trucks include cube vans and extended vans for small moves, and larger vans for bigger moves.

Each truck is assigned a specific category—for example 16ft cube van, and is stationed at one of three locations (Richmond Hill, Mississauga, Thornhill). A truck can only be assigned to one location and to one category.

Here are scenarios for a system being planned for TR Trucks.

List Trucks for a location

Actor (TR Admin)	System
Enter location ID	Retrieves all trucks at that location, and displays truck id and category for each truck, sorted by truck id.

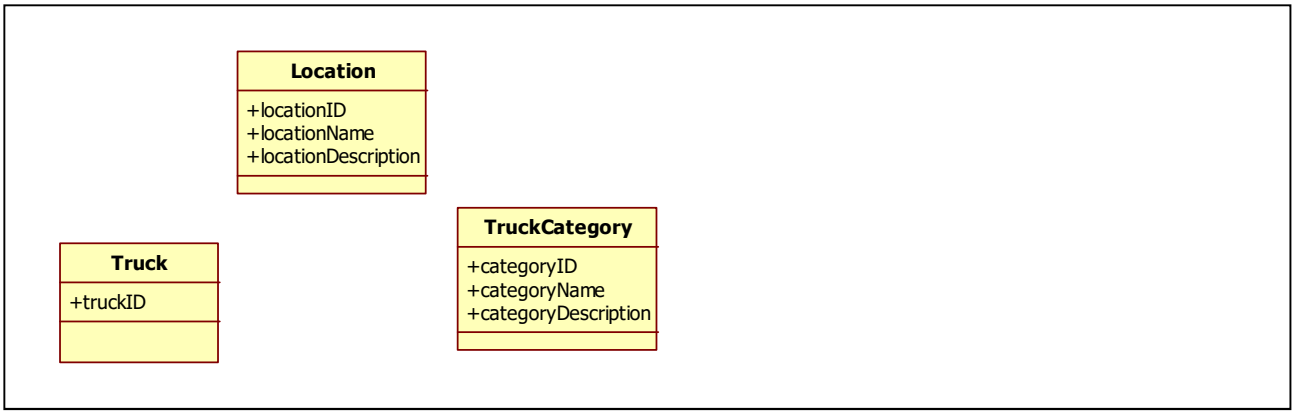
Find all trucks of a specific category

Actor (TR Admin)	System
Enters category id	Retrieves all trucks of that category; displays the list of trucks sorted by category, then location, then truck id.

Get Truck information

Actor (TR Admin)	System
Enters truck ID	Retrieves truck information—displays location, category and ID of the truck.

The preliminary class diagram for TR Trucks is shown below.



Exercise 3

GGA Parcel Delivery is planning a software system to facilitate shipments. Each parcel is assigned a pickup address and a destination address. Each parcel also belongs to a specific client. A dispatcher groups parcels into shipments based on where they are going. Some scenarios have been identified for the system:

Add parcel

Actor (Dispatcher)	System
Enters client ID and requests to add parcel.	Displays client first and last name and requests parcel weight.
Enters parcel weight.	Requests pickup and destination addresses
Enters pickup and destination addresses.	Saves all information entered; assigns a parcel ID to the parcel and adds the parcel to the system. Displays a confirmation.

Add parcel to shipment

Actor (Dispatcher)	System
Enters shipment id	Retrieves shipment info—displays shipment date, the parcel id of each parcel on the shipment as well as its weight. Displays total weight also.
Requests to see a list of parcels that have not been assigned to a shipment.	Lists all unassigned parcels, showing id and weight for each as well as client first and last names and client id.
Selects a parcel from the list and requests to add to shipment.	Adds parcel to the shipment. Recalculates total shipment weight and displays new weight along with confirmation.

Check parcel status

Actor (Dispatcher)	System
Enters parcel id and requests parcel status.	Checks to see if a parcel has been assigned to a shipment or not (It has). Displays shipment id and date scheduled.

A preliminary class diagram is as follows: