SYS466 Summer 2020
Professor: Tevin Apenteng
Lab 4 (1% of Final Grade): Domain Modeling
Due: At the end of the lab session

Objective: Practice creating domain class diagrams and show associations, generalizations, attributes, reference attributes, multiplicity, and association names.

This exercise is to be done with your assigned group, but you are to submit your work individually. Please ensure that you have your name and student number on your work. Your work will be graded as Acceptable or Unacceptable. Submissions that demonstrate a reasonable amount of thought will receive full marks.

Please ensure that after submitting your work, you see me to grade your work before leaving the lab room.

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

SYS466 LAB 4 (1%): Composition and Generalization

- 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 Lab4Group22.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 this 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 a case study. You will use all of the information given for each exercise to create ONE class diagram for that exercise.

Exercise 1:

There are several types of employees that work for Tevbar Transportation. Drivers must have a trucking license which is current, i.e. the expiry date has not yet passed. Loaders, who load each shipment with parcels, must have current WHMIS training (expiry date has not passed), and wrappers, who wrap each parcel, must not only have current WHMIS training but must have a current police check.

Every week the Tevbar manager, Cecilia, fills out a weekly hour log to log the hours worked for each employee—the information is stored in the database.

Cecilia also prints off weekly performance reports for employees once the logs have been entered:

- The driver's report shows driver id, name and contact phone as well as trucking license number, date issued and expiry date. The report must also show number of hours worked that week.
- The loader's report shows loader id, name and contact phone as well as date of WHMIS training, the level of the WHMIS training (levels are "beginner", "administrator", "supervisor" and so on) as well as date of WHMIS training and expiry date. The report must also show number of hours worked that week.
- The wrapper's report shows wrapper id, name and contact phone as well as date of WHMIS training, the level of the WHMIS training (levels are "beginner", "administrator", "supervisor" and so on) as well as date of WHMIS training and expiry date. Each wrapper requires current police check so the report also shows the police check id, date and expiry. The report must also show number of hours worked that week.

Cecilia is also able to input a start date, an end date, an employee id and view all work logs for that employee for the time frame entered.

TO DO:

Create a domain class diagram for the above case study. Show associations, generalizations, attributes, reference attributes, multiplicity, association names.

Exercise 2:

TeeShirt Tales is a “bricks and mortars” store that sells t-shirts and books in a popular tourist location in downtown Toronto. You are helping design a computers system for the store and you will use the information given to create a class diagram.

Customers place online orders. The orders are queued and displayed to the manager who releases them for fulfillment and shipping.

Each order shows the order id and date, the customer name and billing address, the shipping address for the order as well as all ordered items—quantity, description and category name.

TO DO:
Create a domain class diagram that will help TeeShirt Tales implement the system described above. Show associations, composition, attributes, reference attributes, multiplicity, association names.

Exercise 3:

Bfit is a planned phone app to track athlete fitness. You are helping develop the app and you will use the information given to create a domain class diagram.

Amateur athletes use the app to set a fitness goal and to track their fitness activity. Walkers want to track date, time, duration, steps and calories burned for each walk taken each day. Walkers can also set a goal of a specific number of steps, a duration and number of calories to burn. Setting a goal is optional—the app lets Walkers choose whether or not they want to set a goal.

Similarly, Runners want to track total distance and average speed for each day. Runners also have the option of setting a goal – daily distance and speed.
The app will require amateur athletes to enter name and email address in order to initialize the app.

TO DO:
Create a domain class diagram that describes BFit. Show all associations, composition, generalizations, attributes, reference attributes, multiplicity, association names.