CSCI 2141
January 11, 2013

Transit Schedules Scenario

Stakeholders (subset that we will consider) and some task scenarios:

- Bus riders
    A. Determine when the next bus will arrive at a particular stop
    B. Determine the bus route to take from A to B
    C. Determine total trip time (when to leave to get there by X time)
    D. Determine fares
- Bus drivers
    E. Learn their schedule for the day (Which physical bus? Which route?)
    F. Keep on track with the timetable (Where to stop? Timing for stops?)

Other stakeholders that would interact with our scenarios but who we won't directly support in this exercise:

- Scheduling manager (makes sure that all routes are covered – enough busses of certain types, enough drivers)
- Service manager (pulls busses in and out of service for repairs)
- Payroll (tracks shifts/hours worked of drivers and other employees)

Think about:

1. How are these tasks currently handled? (may need to make some assumptions)
    a. What is the information currently available (bus schedules? Route maps?)
2. Wish list (how might current processes be improved)
    a. Things to implement currently (automate tedious manual tasks?)
    b. Things to keep in mind for the future (capture/record data that can be used to support decision making)

Goal: In the task scenario, briefly describe the goals of the stakeholder and the steps that they need to take to accomplish that goal. From a database perspective it is important to include details of the real-world entities in the scenario so that we can model that when building our conceptual model of the transit scheduling system.

Activity 1 (10 min):

In small groups, take one of the task scenarios and think about what information is needed and the real-world entities that will need to be modeled in the database.

Have 1 person be the scribe for your discussions – either that person or another should be prepared to present to the class

Activity 2 (30 min)

Discuss as a class each of the task scenarios to support.

- **3 volunteers to capture the outcome of the scenario discussions – I will work from their notes to generate the final "official" scenarios
- **3 volunteers to start to capture the real world entities (nouns) that the database must capture (bus? Stop? Location?) and note any relationships between them

Activity 3 (probably Monday):

Develop the conceptual model with an Entity-Relationship Diagram (ERD)

1. What are the entities in our database (nouns – these will be the tables)
2. What are their attributes? (properties/characteristics of an entity that we want to collect and store in the DB) – think about what would uniquely identify a particular instance of the entity)
3. What are the relationships between entities? (what is the cardinality of that relationship? (1-1? 1-many? Etc.)

End of class:

- All scribes give me their notes (either on paper or email me the file)
- I will post them on the website on Friday and post an "official" version on Saturday

For Monday's class:

- Read the SFU tutorial 3: An introduction to data modeling (http://sfubusiness.ca//areas/mis/tutorials/2np/lessons/model.pdf)
- Take a stab at creating an ER diagram for our bus example – we will fully work through it together on Monday)