CSCI 2141
Winter 2013

Transit Schedules Task Scenarios

Scenario A:

A. Determine when the next bus will arrive at a particular stop

User level task scenario:
Adam is a university student who lives in Dartmouth and goes to school at Dalhousie University. The closest bus stop to his house is #1234, which is serviced by bus #1, #2, #3, and #4. Adam is wondering whether to eat his breakfast at home or take it with him, and accesses the Go Time application to learn at what time the next bus will come by that could take him to Dalhousie (bus #1 or bus #2).

System level requirements:
User input: bus stop #
Expected output: next time bus arrives for either (next bus) or (next bus for a certain route that goes to that bus stop)
Internal data?

B. Determine the bus route to take from A to B

Betty is a new student in town and has just moved into an apartment at 123 Easy Street in Halifax. She wants to know the "best" route to get from home to the Computer Science Building at Dalhousie University. She doesn't mind walking if it would mean fewer transfers or a shorter total trip time (from home to school). Her highest priority is to have the fewest transfers as possible as she likes to read on the bus. She accesses the Trip planner application to learn of possible routes between her home and Dalhousie. (a good trip planner would allow her to save these preferences!)

System level requirements:
User input: start address, end address, optimization parameters (prioritize #transfers, walk distance, total trip time)
Expected output: list of possible routes with details regarding timing and connections between legs of route, map of route
Internal data?

C. Determine total trip time (when to leave to get there by X time)

Betty needs to be at a 9:35 am database class on Monday mornings. In order to ensure she gets there on time, she wants to arrive by 9:25 am. She accesses the Trip planner application and indicates that she wants a 9:25 am arrival time for her trip between 123 Easy Street and the Computer Science Building at Dalhousie University. The application provides her with the travel route, including the departure time of the transportation for the first leg of the route and the estimated walk time to get to the bus stop.

System level requirements:
User input: either intended arrival time or departure time along with other trip details as in scenario B (i.e., start address, end address, optimization parameters (prioritize #transfers, walk distance, total trip time))
Expected output: list of possible routes with details regarding timing and connections between legs of route, map of route – these routes are selected with top priority being planned trips that work for the input arrival/departure time
Internal data?

D. Determine fares

Calvin is a senior citizen and is pinching his pennies. He is a sporadic bus rider and wants to know the fare for his trip between Cole Harbour and the Halifax Infirmary. There is an express bus that travels on his route and he is debating whether to take that bus (#5E) or the non-express version (#5). He inputs the route into the fare query system to see the impact of bus choice on fare.

System level requirements:
User input: bus route, passenger class (student, senior, regular)
Expected output: fare
Internal data?

E. Learn bus driver schedule for the day

Ernie is a bus driver who needs to report to work on Wednesday. He queries the scheduling system to learn what his day's schedule is for that day, including what route he will be driving, which bus to drive, and where to pick up and drop off the bus.

System level requirements:
User input: Employee ID, date
Expected output: start time, start bus location, bus ID, route #, end time, end bus location
Internal data?

F. Keep on track with timetable

Ernie queries his route timetable for the day in the scheduling system. He wants to know the list of bus stops on his assigned route and the scheduled times for the "key" stops.

System level requirements:
User input: Employee ID, date, (route #?)
Expected output: route details, including directions, bus stops on route, timing for key stops, additional info regarding any time of day/construction changes
Internal data?