# CSE2011 Summer 2014 - Assignment 3 + 4

Due date August 8th at 11:59PM. No late submissions will be accepted.

You must work individually. The assignment is worth 5% for part 1 and 5% for part 2. The code must be properly structured and documented. Your code will be tested by an automatic program.

**Part 1**

Create generic data structure(s) for storing graphs using the adjacency list structure. The vertices will store objects of generic type V and the edges store objects of generic type E. The entries should be location-aware. The data structure must support adding and removing of given vertex or edge. For quick reference the vertices should also be stored in a hash table keyed by vertex's object V. Follow the diagram from the lecture slides.

**Part 2**

Create a program that will find the shortest connection travel time between airports. It will accept the following commands:

+ YYZ JFK 120 plane

to add a connection from airport YYZ to airport JFK that takes 120 minutes using a plane

- YYZ

to remove an airport from the database

- YYZ JFK 120 plane

to remove a connection from airport YYZ to airport JFK that takes 120 minutes using plane

? YYZ

to list all connections from YYZ (lines in the format YYZ JFK 120 plane)

? YYZ LAX

to find the quickest route from YYZ to LAX, it shout print the total duration and then list the individual connections for this option (lines in the format YYZ JFK 120 plane)

?

to list all connections in memory (lines in the format YYZ JFK 120 plane)

QUIT

to end the program

You must use the data structure developed in part 1.

**Marking Scheme**

50% = working program / all requested features in code

10% = code robustness, provisions of unexpected data/input

10% = proper comments

10% = proper coding style, proper structure, use of interfaces etc.

10% = show that you tested the code using typical and boundary (unusual) data

10% = marker's discretion