COMP 413 Fall, 2016, Course Overview / Preliminary Schedule

Some Key Dates

13 Sep (week 3): project 1 due
20 Sep (week 4): quiz 1
23 Sep (week 4): project 2 due
27 Sep (week 5): test 1
11 Oct (week 7): no class (Mid-Semester Break)
21 Oct (week 8): project 3 due
25 Oct (week 9): quiz 2
01 Nov (week 10): test 2
04 Nov (Friday): withdrawal deadline
22 Nov (week 13): project 4 due
29 Nov (week 14): test 3
06 Dec (week 15): last class + quiz 3
13 Dec: test 4 (final) + project 5/6 presentations and final project due date

Week 2: 6 September

Session

- announcements
- data structures
    - linear vs. nonlinear
    - position-based vs. policy-based (see also here)
    - performance
    - tying data structure choices to requirements
- data abstraction
    - addressing: pointers, references
    - aggregation (product types): structs, records
        - example: node in a linked list
    - variation (sum types): tagged unions, multiple implementations of an interface
    - example: mutable set abstraction
        - add element
        - remove element
        - check whether an element is present
        - check if empty
        - how many elements
    - several possible implementations
        - reasonable: binary search tree, hash table, bit vector (for small underlying domains)
        - less reasonable: array, linked list
        - see also here
- group activity: problem 4 on prerequisite assessment

Reading/Podcasts

- OOPUJ chapters 4, 5
    - Object Roles and Polymorphism; Method Overloading