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0.1 Schedule

- *Aug 25* Review of pascal. Loop invariants, example: find the max. in an array.
- *Aug 30* Loop invariants continued. Sentinels.
- *Sep 1* Data Objects, the myString object. HW 1 out.
- *Sep 6* Rosh H. holiday.
- *Sep 8* Memory references, pointers and linked lists.
- *Sep 13* Pointers and Linked List, continued: printing, adding to. HW 1 due, HW 2 out.
- *Sep 15* Yom Kipper holiday.
- *Sep 20* Go over HW1 solutions. Data Structure Invariants. Propositional calculus.
- *Sep 22* Finish propositional calc, implies, tautologies, quantifiers. HW2 due, HW3 out (written) Head and tail pointers.
- *Sep 27* Deleting and dummy headers. Discrete Calculus for sum of integers, sum of squares, sum of consecutive odds, and of evens. Very light introduction to analysis of algorithms in the context of last week's (too slow) program.
- *Sep 29* HW3 due, HW4 out (Move to Front) Heuristics for algorithms, move to front, the difference that it makes. Other types of lists: circular, doubly-linked.
- *Oct 4* Recursion introduced. A quasi-formal comparison of FOR, WHILE and REPEAT. The three forms of program control: straight-line, branch and iteration. Recursion, transforming iteration to recursion, and recursion to iteration. Example: filling an array by all four constructs. Listing a list by recursion. Comparing lex. order of strings by recursion.
- *Oct 6, Th* No class, went to pickup the dogs.
- *Oct 11, Tu* HW4 due, HW5 out, recursion homework. Chapter 16 of Condensed, examples of recursion were covered in detail, reverse the characters, towers of hanoi, triangle numbers, fibonacci numbers, exponentiation and fast exponentiation, eight queens problem.

- *Oct 13, Th* Trees, recursive printing, searching on trees. Complete trees of depth i have $2^{i+1} - 1$ nodes.
- *Oct 18, Tu* HW5 due. Insertion and deletion algorithms for trees. The problem of balance.
- *Oct 20, Th* Midterm.
- *Oct 25, Tu* HW6 out. Discussion of homework. Trees, storing at leaves versus internal. Counting leaves of “full” trees. Introduction to 2-4 trees.
- *Oct 27, Th* 2-4 tree insert.
- *Nov 1, Tu* 2-4 trees delete.
- *Nov 3, Th* HW6 due. 2-4 trees pretty print. (2-D trees would be nice.)
- *Nov 8, Tu* HW 7 Out, HW 6 is really really due. Algorithms for sorting and their analysis. Insertion, selection and bubble.
- *Nov 10, Th* Fast algorithms for sorting, quick, merge and heap.
- *Nov 15, Tu* heap sort, continued.
- *Nov 17, Th* Graph Algorithms
- *Nov 22, Tu* HW 7 Due, HW 8 Out, Graph Algorithms
- *Nov 24, Th* Thanksgiving Holiday.
- *Nov 29, Tu* Graph algorithms.
- *Dec 1, Th* Last day of class. Hashing. HW 8 Due.