Final exam topics

Ted Krovetz

All Sections

Here is a final exam from a few years ago. It does not necessarily represent what your exam will look like, but it is worth practicing on. I will go over it on Thursday, so try to do as much of it as you can before then. The problems asking for Racket/Scheme code, do in Python as if the list was a List135.

https://krovetz.net/135/final.pdf (https://krovetz.net/135/final.pdf)

When I write the final I will restrict myself to asking problems that are similar to one of the sample final problems or fit one of the following descriptions.

Be able to do the following problem types:

- Write a few lines of Python code to accomplish a task using lambda, map, filter, reduce on python's built-in list and/or set type.
- Draw pictures to demonstrate understanding of List135 and HAMT data structures.
- Read/write/interpret simple RE/DFA/NFA
- Convert between RE/DFA/NFA
- Basic regular language pumping lemma proof concepts
- Lexical specification to convert string to tokens
- Write a PDA implementing a stack algorithm
- Show string in CFG via parse tree and/or derivation; show CFG ambiguous via parse tree and/or derivation
- Convert CFG to PDA
- Write set relations for First and Follow given a CFG; fill in predictor table for CFG.
- Write tree-walking code to do simple inspection of tree (similar to num_leaves)
- Read/write/interpret simple TM
- Write a simple reduction and know its logical implications
- Reduce from one of the uncomputable problems seen in class to show another problem uncomputable.

This announcement is closed for comments

Search entries or author Unread