

Assignment 7

CSI 4336

Due November 1, 2018

Submitting your assignment

All written portions of the assignment should be prepared in \LaTeX .

Submit this assignment by the due date in two ways: by email (before class) and printed (at the beginning of class). Don't put any code in the printed copy. Proofread your document for style before submitting it.

Send the email to `hamerly@cs.baylor.edu` with the subject "CSI 4336 assignment X" (where X is the assignment number). The email should have one attachment (plain text, .zip, or .tar.gz format) containing:

- the .tex document you wrote named "lastname.tex" (where 'lastname' is your last name),
- a compiled .pdf from the .tex document named "lastname.pdf" (where 'lastname' is your last name),
- any additional files used in your \LaTeX document, named "lastname_fig1.pdf" (or similar), and
- all source code used for any programs.

1 3SAT \in NP (10 points)

The 3SAT problem is described in chapter 7.4 of your textbook. Give *two proofs* that $3\text{SAT} \in \text{NP}$. In your first proof, use a poly-time verifier. In your second proof, use a poly-time non-deterministic Turing machine. This is not difficult; but be careful and complete.

2 3SAT solver (10 points)

Do the problem "baylor.threesat" on Kattis.