

CSE 322 Spring'07: HW 5
Due back Friday May 18th

Reading Assignment: Chapter 2 of Sipser.

Practice Problems: Exercises 2.3, 2.4, 2.5

Problems for Submission:

1. Exercise 2.14
2. Exercises 2.16 and 2.17
3. Problem 2.26
4. For a string $w \in \{0, 1\}^*$, let $\ell_0(w)$ and $\ell_1(w)$ denote the number of 0s and the number of 1s in w respectively. Consider the language of all strings where $\ell_0(w) \geq \ell_1(w)$.
 1. Give a CFG for this language.
 2. Prove that your grammar generates every string in the language.
 3. Give a PDA for this language.
5. Define $\ell_0(w)$ and $\ell_1(w)$ as before. Consider the language of all strings where for every prefix w' of w , $\ell_0(w') \geq \ell_1(w')$.
 1. Give a CFG for this language.
 2. Prove that your grammar generates every string in the language.
 3. Give a PDA for this language.

Next Week: Equivalence of CFGs and PDAs, Pumping Lemma for CFLs.