Ars Digita University
Theory of Computation
Recitation 7, 05/11/01

Topics

- Using regular expressions and context free grammars with Lex and Yacc to build complex programs quickly. A calculator example.
- Chomsky Normal Form (Finish problems on Chomsky Normal Form that we didn't get to last time,
  i.e. all of them ;-)
- Push Down Automata.

Problems to work on

1. Give a grammar for the language $\{a^i b^j \mid i <= j <= 2i\}$.
2. Consider the grammar

   ```
   S --> z A s
   A --> xb B yz
   B --> cd A q | epsilon
   ```

   Play around with this grammar and try to guess what a pumping lemma for CFG's might look like.
3. Construct a PDA for $\{0^n 1^n \mid n >= 0\}$ without looking at your notes.
4. Construct a PDA for $\{0^n 1^m 0^m 1^n \mid n,m >= 0\}$

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