

PPL – Recitation Two

February 5, 2019

Review

What we talked about last time

- ▶ Course layout
 - ▶ What to expect
 - ▶ Work load
 - ▶ What to take away
- ▶ Dove into Regex
 - ▶ How to write them given a specification
 - ▶ How to interpret them
 - ▶ Making DFAs out of them
- ▶ Ended with some BNF talk

BNFs Again

Not enough

- ▶ Last time we had a glance over these, want to talk about them in more detail today
- ▶ Want to talk about ambiguity and what this means
- ▶ Let us take a look at another example, again from lecture

$$\begin{aligned}\langle expr \rangle &::= \langle expr \rangle + \langle expr \rangle \\ &| \langle expr \rangle - \langle expr \rangle \\ &| \langle variable \rangle \\ &| \langle number \rangle\end{aligned}$$
$$\langle variable \rangle ::= a \mid b \mid c \mid \dots \mid z$$
$$\langle number \rangle ::= 1 \mid 2 \mid 3 \mid \dots \mid 9$$

► String $2 + q - 5$

Python

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- ▶ But in all honesty, it is an interpreted, high-level, general-purpose programming language (Wikipedia).
- ▶ What does interpreted mean?
- ▶ For me, the power of Python comes from its extensive packages. Some of these packages are so massive that they are considered an extension of the language itself (Numpy)

Practice

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- ▶ Let us dive right into an interview question from a big four company:

- ▶ We are playing a game where the objective is to flip over matching cards.
- ▶ It costs one dollar to flip over a card and you can only flip over cards that are next to one another.
- ▶ It costs one dollar to flip over a card.
- ▶ You peeked and know what each card is.
- ▶ Return the smallest amount you must spend to win at this game

Examples: $[5, 3, 4, 2, 3, 4, 5, 7] \rightarrow 4$ because 3, 4, 2, 3 or 4, 2, 3, 4
 $[1, 6, 7] \rightarrow -1$ because no matching numbers

Duck Typing

Forgiveness not permission

- ▶ The idea that we should just try things
- ▶ If it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck