ALBERT-LUDWIGS-
UNIVERSITÄT FREIBURG

Prof. Dr. Andreas Podelski   June 4th, 2014
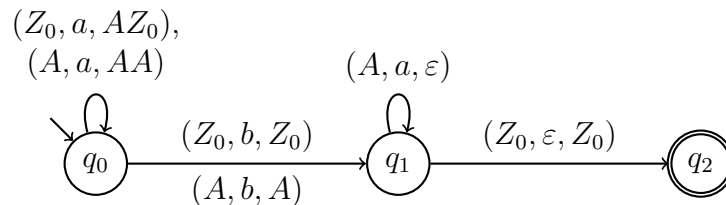Matthias Heizmann
Christian Schilling

3. Presence Exercise Sheet for the Lecture
Computer Science Theory
WITH PROPOSALS FOR SOLUTIONS

Exercise 1: Pushdown automata
Consider the following PDA $\mathcal{A}$ over $\Sigma = \{a, b\}$.

(a) What is $L(\mathcal{A})$, i.e., the language accepted by $\mathcal{A}$ with final states?

Hint: Decompose the problem:

- What happens in q_0 (q_1, q_2)?
- When can we go from q_0 to q_1 (from q_1 to q_2)?

(b) Construct a PDA which accepts the same language, but with the empty stack.

.... Sketch of solution ....

(a) $L = \{a^n b a^n \mid n \in \mathbb{N}\}$

(b)