

T-79.4301

Autumn 2008

Parallel and Distributed Systems

Tutorial 11 - Thu Dec 11, 14:15

1. Let  $AP = \{a\}$ . Given a word  $\pi = \{a\}, \emptyset, \emptyset, \{a\}$ , prove that  $\pi$  is stuttering equivalent to  $\pi' = \{a\}, \{a\}, \emptyset, \{a\}$ .
2. Give a past safety formula  $f$  (see Lecture 9) such that  $\pi \models f$  but  $\pi' \not\models f$ .
3. Give a hand made Promela neverclaim that detects all the violations of the past safety formula:  $\mathbf{G}(starts \Rightarrow \mathbf{O}(ignition))$  assuming that **starts** and **ignition** are global Boolean variables of the Promela model in question. Hint: Use ideas from the history variables method explained in Lecture 9.