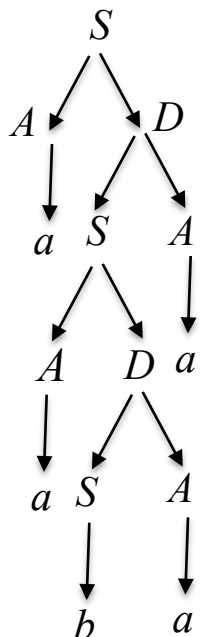


CS 302  
QUIZ 8

8 December, 2016

ANSWER

(a)  $G$  is already in CNF and the binary parse tree for  $aabaa$  is as below :



(b) For  $G1$  symbols  $S$ ,  $D$  and  $b$  are **unreachable** from  $A$  and eliminated and CNF is  $GN1' = (A, a, A \rightarrow a, A)$

For  $G2$  CNF is same as  $G$  with the start symbol changed to

$D$ .  $L_{G1} = \{a\}$  and  $L_{G2} = \{a^n b a^{n+1} ; n > 0\}$

(Note that:  $L_G = \{a^n b a^n ; n > 0\}$  though this was not asked !)