

ECS 140A Homework 1

Hardy Jones
999397426
Professor Olsson
Winter 2014

1. Indicate if the string belongs to the class of object at the head of the column by placing “yes” or “no” in the appropriate box.

string	<chairs>	<set>	<table>	<room>
oak	no	no	yes	yes
armchair bench oak	no	no	no	yes
dinette plant	no	no	no	yes
bench stool	yes	no	no	no
oak rug	no	no	no	yes
oak teak dinette	no	no	no	no
teak teak	no	no	no	no
teak bench oak oak stool	no	no	no	no
dinette plant	no	no	no	yes
rug plant	no	no	no	no
couch	no	no	no	no
armchair bench	yes	no	no	no
teak lamp	no	no	no	no
bench stool teak bench stool	no	no	no	yes
bench stool teak bench teak stool	no	no	no	no
teak bench plant	no	no	no	yes

2. Rewrite the original grammar in EBNF notation (as given in the textbook).

$\langle room \rangle ::= [\langle chairs \rangle] \langle table \rangle \mid \langle table \rangle (\text{couch} \mid \langle stuff \rangle)$
 $\langle table \rangle ::= \text{oak} \mid \text{teak} \mid \text{dinette} \mid \langle table \rangle \langle chairs \rangle$
 $\langle chairs \rangle ::= \langle chair \rangle \{ \langle chair \rangle \}$
 $\langle chair \rangle ::= \text{armchair} \mid \text{bench} \mid \text{stool}$
 $\langle stuff \rangle ::= \text{rug} \mid \text{plant}$