

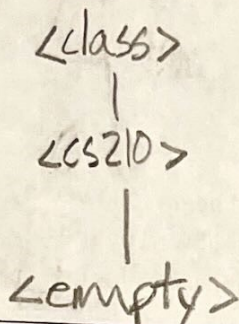
- a. $\langle \text{class} \rangle ::= \langle \text{cs210} \rangle \mid \langle \text{cs395} \rangle$
 $\langle \text{cs210} \rangle ::= \text{bill} \mid \text{bob} \mid \langle \text{empty} \rangle$
 $\langle \text{cs395} \rangle ::= \text{alex} \mid \text{ann} \mid \langle \text{empty} \rangle$

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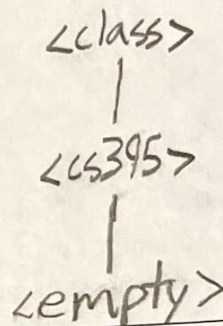
String:

Parse tree 1

$\langle \text{empty} \rangle$



Parse tree 2



Give an unambiguous equivalent grammar

$\langle \text{class} \rangle ::= \langle \text{cs210} \rangle \mid \langle \text{cs395} \rangle \mid \langle \text{empty} \rangle$
 $\langle \text{cs210} \rangle ::= \text{bill} \mid \text{bob}$
 $\langle \text{cs395} \rangle ::= \text{alex} \mid \text{ann}$

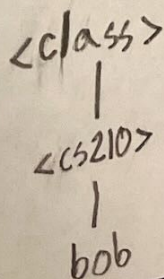
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- a. $\langle \text{class} \rangle ::= \langle \text{cs210} \rangle \mid \langle \text{cs395} \rangle$
 $\langle \text{cs210} \rangle ::= \text{bill} \mid \text{bob}$
 $\langle \text{cs395} \rangle ::= \text{alex} \mid \text{bob}$

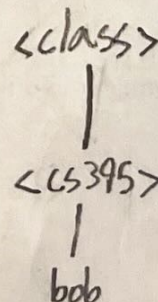
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String:

Parse tree 1



Parse tree 2



Unambiguous grammar:

$\langle \text{class} \rangle ::= \langle \text{cs210} \rangle \mid \langle \text{cs395} \rangle \mid \text{bob}$
 $\langle \text{cs210} \rangle ::= \text{bill}$
 $\langle \text{cs395} \rangle ::= \text{alex}$