

**Context Free Grammars**

Consider the following grammar:

$S' \rightarrow NP VP$

$VP \rightarrow V NP$

$NP \rightarrow NP1 \mid D NP1$

$NP1 \rightarrow N \mid \mid ADJ NP1$

$N \rightarrow \text{boy} \mid \text{girl} \mid \text{John} \mid \text{flowers} \mid \dots$

$V \rightarrow \text{sees} \mid \text{likes} \mid \dots$

$ADJ \rightarrow \text{big} \mid \text{small} \mid \dots$

$D \rightarrow \text{a} \mid \text{the}$

- Check whether “today is a cold sunny day” is a valid string.
- Draw the parse tree for this input string.