

# TOP-DOWN PARSE EXAMPLE

## RULES

S --> NP VP  
 NP --> Det A N  
 NP --> Det N  
 VP --> V  
 VP --> V NP  
 VP --> V ADVL  
 ADVL --> Det SUPERL

## Lexicon

benefit: N, V  
 most: SUPERL  
 rich: A, N  
 the: Det

INPUT: The rich benefit the most           
           1      2      3          4      5          6

<u>Current state</u>	<u>Backup states</u>
(S) <sub>1</sub>	
(NP VP) <sub>1</sub>	
<u>(Det A N VP)</u> <sub>1</sub>	(Det N VP) <sub>1</sub>
<u>1The</u> <sub>2</sub>	
<u>(A N VP)</u> <sub>2</sub>	(Det N VP) <sub>1</sub>
<u>2rich</u> <sub>3</sub>	
<u>(N VP)</u> <sub>3</sub>	(Det N VP) <sub>1</sub>
<u>3benefit</u> <sub>4</sub>	
(VP) <sub>4</sub>	(Det N VP) <sub>1</sub>
<u>(V)</u> <sub>4</sub> (V NP) <sub>4</sub> (V ADVL) <sub>4</sub> (Det N VP) <sub>1</sub>	
FAIL	
<u>(V NP)</u> <sub>4</sub> (V ADVL) <sub>4</sub> (Det N VP) <sub>1</sub>	
FAIL	
<u>(V ADVL)</u> <sub>4</sub> (Det N VP) <sub>1</sub>	
FAIL	
<u>(Det N VP)</u> <sub>1</sub>	
<u>1The</u> <sub>2</sub>	
<u>(N VP)</u> <sub>2</sub>	
<u>2rich</u> <sub>3</sub>	(continued top right)

<u>Current state</u>	<u>Backup states</u>
(continued)	(continued)
(VP) <sub>3</sub>	
<u>(V)</u> <sub>3</sub>	(V NP) <sub>3</sub> (V ADVL) <sub>3</sub>
<u>3benefit</u> <sub>4</sub>	
( )	(V NP) <sub>3</sub> (V ADVL) <sub>3</sub>
FAIL (words remain)	
<u>(V NP)</u> <sub>3</sub>	(V ADVL) <sub>3</sub>
<u>3benefit</u> <sub>4</sub>	
(NP) <sub>4</sub>	(V ADVL) <sub>3</sub>
<u>(Det A N)</u> <sub>4</sub>	(Det N) <sub>4</sub> (V ADVL) <sub>3</sub>
<u>4The</u> <sub>5</sub>	
<u>(A N)</u> <sub>5</sub>	(Det N) <sub>4</sub> (V ADVL) <sub>3</sub>
FAIL	
<u>(Det N)</u> <sub>4</sub>	(V ADVL) <sub>3</sub>
<u>4The</u> <sub>5</sub>	
<u>(N)</u> <sub>5</sub>	(V ADVL) <sub>3</sub>
FAIL	
<u>(V ADVL)</u> <sub>3</sub>	
<u>3benefit</u> <sub>4</sub>	
(ADVL) <sub>4</sub>	
<u>(Det SUPERL)</u> <sub>4</sub>	
<u>4The</u> <sub>5</sub>	
<u>(SUPERL)</u> <sub>5</sub>	
<u>5most</u> <sub>6</sub>	
( )	<b>SUCCESS -- no words remaining</b>