

Chapter 6

Top-down Parsing

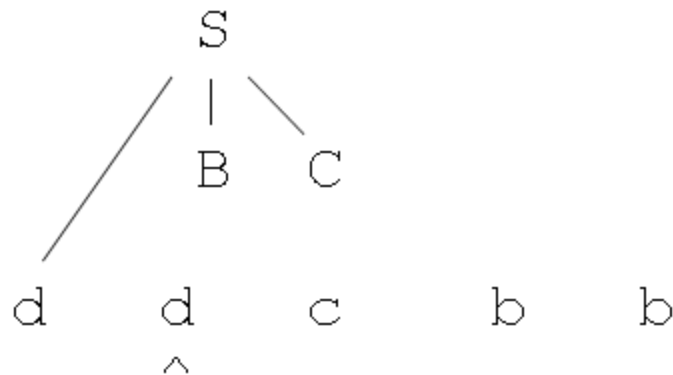
Constructing parse tree top down

S

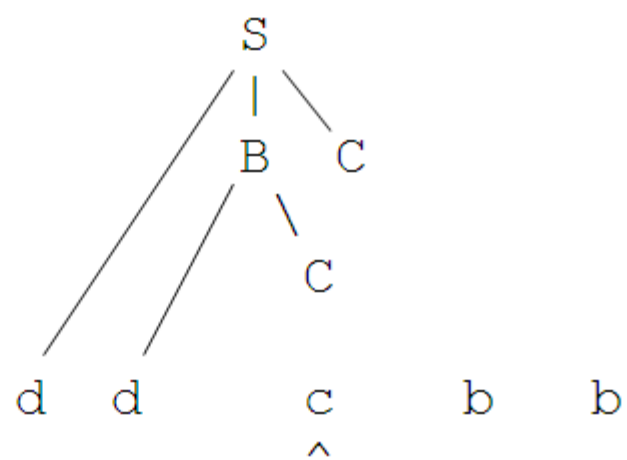
a)

d d c b b
^

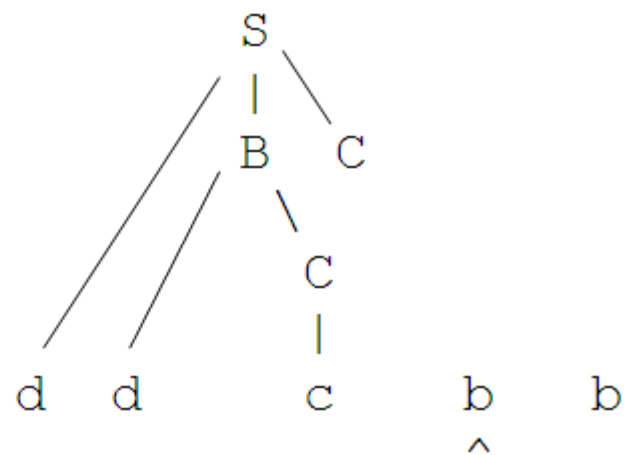
b)



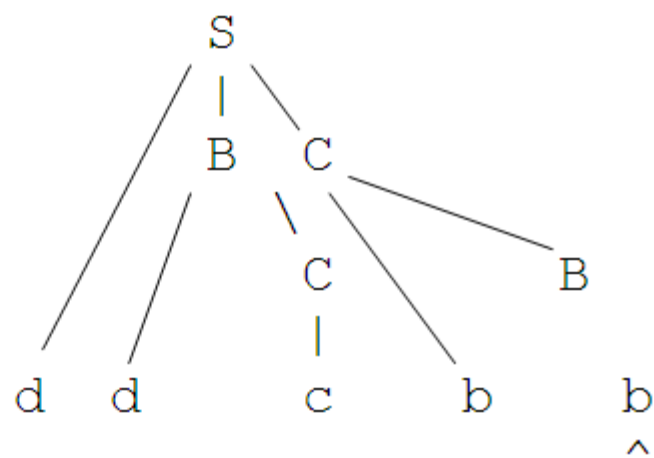
c)



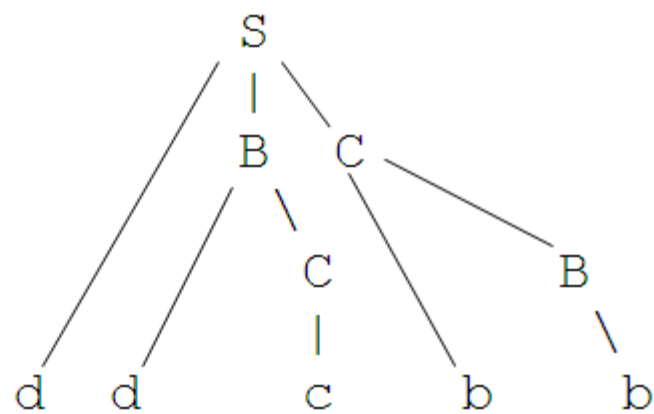
d)



e)



f)



Top-down parsing with a stack

Input	Stack	Operations	Production Used
ddcbb# ^	S\$	pop, push(C), push(B), advance	$S \rightarrow dBC$
ddcbb# ^	BC\$	pop, push(C), advance	$B \rightarrow dC$
ddcbb# ^	CC\$	pop, advance	$C \rightarrow c$
ddcbb# ^	C\$	pop, push(B), advance	$C \rightarrow bB$
ddcbb# ^	B\$	pop, advance	$B \rightarrow b$
ddcbb# ^	\$	accept	

Parse table

		Current token			
Symbol on top of stack		b	c	d	#
	S			pop push(C) push(B) advance	
	B	pop advance		pop push(C) advance	
	C	pop push(B) advance	pop advance		
	\$				accept

Productions with nonleading terminals

$S \rightarrow bSc$

$S \rightarrow c$

	b	c	#
S	pop push(c) push(S) advance	pop advance	
c		pop advance	
\$			accept

Code for top-down parser

Fig0612.txt