

Bottom-Up, Depth First Parser (example)

- 1) $S \rightarrow OSO$
- 2) $S \rightarrow 1S1$
- 3) $S \rightarrow 0$
- 4) $S \rightarrow 1$

u	v		Stack
λ	010		
0	10		
S	10	R	(0,3,10)
S1	0	S	(0,3,10)
SS	0	R	(0,3,10)(S1,4,0)
SSO	λ	S	(0,3,10)(S1,4,0)
SSS	λ	R	(0,3,10)(S1,4,0)(SSO,3, λ)
SSO	λ		(0,3,10)(S1,4,0)
S1	0		(0,3,10)
S10	λ	S	(0,3,10)
S1S	λ	R	(0,3,10)(S10,3, λ)
S10	λ		(0,3,10)
0	10		
01	0	S	
OS	0	R	(01,4,0)
OSO	λ	S	(01,4,0)
S	λ	R	(01,4,0)(OSO,1, λ)

So, the derivation is $S \xRightarrow{1} OSO \xRightarrow{4} 010$