GRAMMAR FOR LANGUAGE L(G)

$S \rightarrow AB \quad BA \quad SS \quad AC \quad BD$

$A \rightarrow a$

$B \rightarrow b$

$C \rightarrow SB$

$D \rightarrow SA$

USING CKY ALGORITHM

b	a	b	a	a	b
0	1	2	3	4	5	6

0	b					
1	B	a				
2	S	A	b			
3	C	S	B	a		
4	S	D	S	A	a	
5	D	Ø	D	Ø	A	b
6	S	Ø	S	Ø	S	B	C

S IS HERE SO STRING ∈ L(G)

b	a	b	a	b	b
0	1	2	3	4	5	6

0	b					
1	B	a				
2	S	A	b			
3	C	S	B	a		
4	S	D	S	A	b	
5	C	S	C	S	B	b
6	Ø	C	Ø	C	Ø	B	C

S IS NOT HERE SO STRING ∉ L(G)

TURING MACHINE FOR

$\{x \in \{0,1\}^* \mid x$ BEGINS WITH 0 AND HAS AS MANY 1 TO 0 TRANSITIONS AS 0 TO 1 TRANSITIONS $\}$

	0	1	␣
q_0	R	q_1 R	ACC
q_1	q_0 R	R	REJ