## Table for a string w=baba:

Specified context free grammar (CFG) G follows:

$$S \rightarrow RT$$

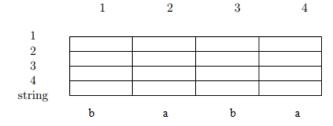
$$R \to TR \mid a$$

$$T \rightarrow TR \mid b$$

Take string w = baba

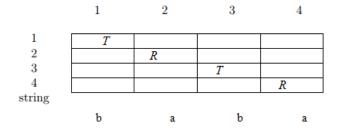
Now we will construct the table for string baba:

Initially the table will be as shown below:



First all the substring string which are having rules of the  $A \rightarrow b$  will be occupied in the location where i =j. As per the theorem.

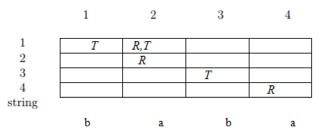
So the table will be filled as follows:



Now fill the remaining entries of the table such that  $i \le j$  and substring formed by one or more substring such that rule  $A \to BC$ .

Consider the string ba for its suitable replacement rule.

There is no rule for this string. So the variables of the corresponding individual strings are added to the table entry.



Consider the string ab for its suitable replacement rule.

Similarly fill the next entry in the same row with rule  $S \rightarrow RT$ . Since it is producing the sting ab.

	1	2	3	4
1	T	R,T		
2		R	S	
3			T	
4				R
string				
	ъ	a	ъ	a

Similarly the remaining entries of the table are filled as follows using the above 2 conditions of the algorithm as the proof for the Theorem 7.16:

	1	2	3	4
1			T	1
1	T	R,T		
2		R	S	
3			T	R,T
4				R
string				
	ь	a	<b>b</b>	a

Now the two diagonals are filled and using the same rules the third diagonal is also filled.

	1	2	3	4
1	T	R,T	S	
2		R	S	R,T
3			T	R,T
4				R
string				
	ь	a	ь	a

Similarly fill left over entry in the table using the conditions mentioned in the algorithm.

	1	2	3	4
1		D T	C	C
2	1	R	S	R,T
3			T	R,T
4				R
string				
	ь	a	ъ	a