



Assignment-05

Course ID: CSC-301

Section: 1

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Answer to the question no - 1

Problem def: Free Grammar for the language over $\{x, y, b\}$ that consists of string nested bracket, divided and ~~sur~~ surrounded with the arbitary of "b". That can check which is accepted and which is rejected

(a)

The chain is $a \rightarrow \epsilon \mid b \mid e \mid s \rightarrow c \mid e \mid x \mid y \mid c$
 string is $S \rightarrow c \mid e \mid x \mid y \mid c$ 2. $c \rightarrow \epsilon \mid b \mid e \mid b$

(b)

i): S	x b x b b y b y
c y s x c	
c y s x e	
c y s	b x b b y b y
c y c y s x c	
c y c y s x b	
c y c y s x	x b b y b y

cycgs	bbgby
cycgc	
cycgcb	
cycgc	byby
cycyb	yby
cycg	
cyc	by
cgb	
cgy	y
c	ϵ
ϵ	accepted

(11) The chain is $c \rightarrow \epsilon / b / cb$
 string $S \rightarrow a / c / cgc$

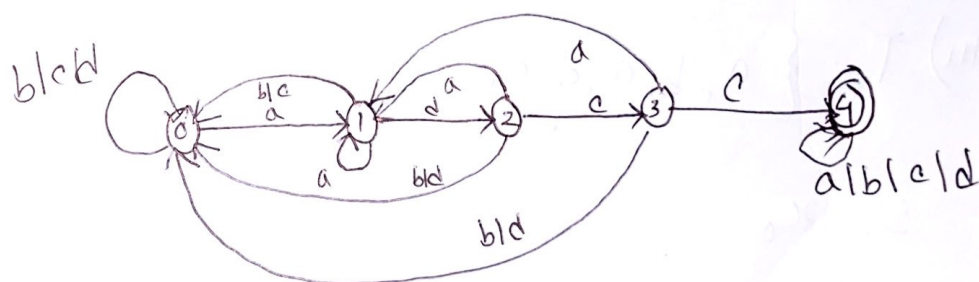
11)	S	bu buby
cysxc		
cysxb		
cysx		x buby
cys		buby
cycysxc		
cycysx		x by
cycys		by
cycyc		
cycyb		
cycy		y
cyc		ε
cyε		
cy		
		'y' not equal 'ε' rejected

Answer to the question no - 2

Problem def - Construct a FSR for a language

It reads the input when input is empty. It decides whether it is accepted or Rejected. It doesn't generate output.

1)



11)

st \ input	Symbol			
	a	b	c	d
0	1	0	0	0
1	1	0	0	2
2	1	0	3	0
3	1	0	4	0
4	4	4	4	4

$$11) T = \{a, b, c, d\}; \quad N = \{x_0, x_1, x_2, x_3, x_4\}$$

$$S = x_0$$

$$1) x_0 \rightarrow ax_1 \mid bx_0 \mid cx_0 \mid dx_0$$

$$2) x_1 \rightarrow ax_1 \mid bx_0 \mid cx_0 \mid dx_2$$

$$3) x_2 \rightarrow ax_1 \mid bx_0 \mid cx_3 \mid dx_0$$

$$4) x_3 \rightarrow ax_1 \mid bx_0 \mid cx_4 \mid dx_0$$

$$5) x_4 \rightarrow ax_4 \mid bx_4 \mid cx_4 \mid dx_4$$

$$6) x_3 \rightarrow c$$

~~Conclude~~

Conclusion . . .

1. Here we find the context-free grammar for the language. By using theorem we are decided that it accepted or rejected.
2. We make a diagram, Taking input symbol, transition matrix and regular grammar.