

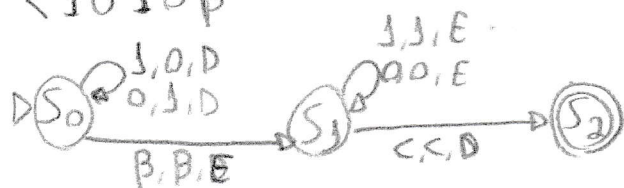
# Máquina de Turing.

Faça MT que tenha como entrada um n° binário e que como saída o complemento do número.

Saída

<1010β

<0101β

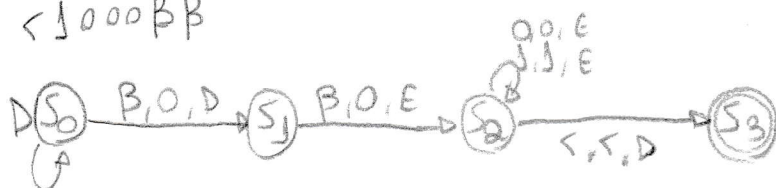


Faça uma MT que tenha como entrada um número binário e que como saída o número no multiplicado por 4.

Saída

<1000ββ

<100000



0,0,D

1,1,D

$\Sigma = \{0,1\}$

$q = S_0$

$\Gamma = \{<, \beta\}$

$E = \{S_0, S_1, S_2, S_3\}$

$F = \{S_3\}$

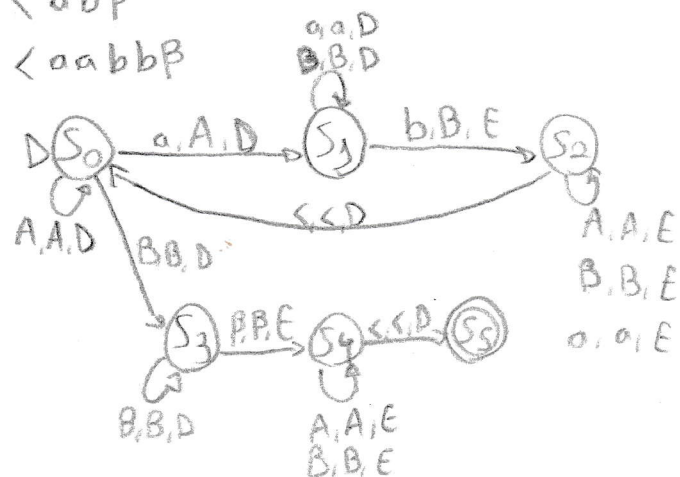
$< = \tau$   $\beta = \beta$

|       | 0           | 1           | <               | β           |
|-------|-------------|-------------|-----------------|-------------|
| $S_0$ | $S_0, 0, D$ | $S_0, 1, D$ | X               | $S_1, 0, D$ |
| $S_1$ | X           | X           | X               | $S_2, 0, D$ |
| $S_2$ | $S_2, 0, E$ | $S_2, 1, E$ | $S_2, \beta, E$ | $S_3, <, D$ |
| $S_3$ | X           | X           | X               | X           |

$L_3 = \{a^m b^m / m > 0\}$

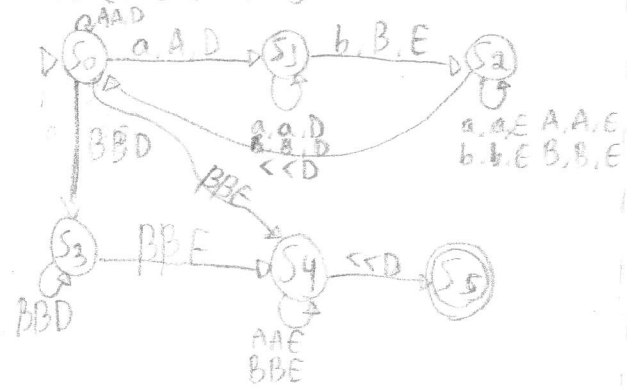
<abβ

<aabbβ

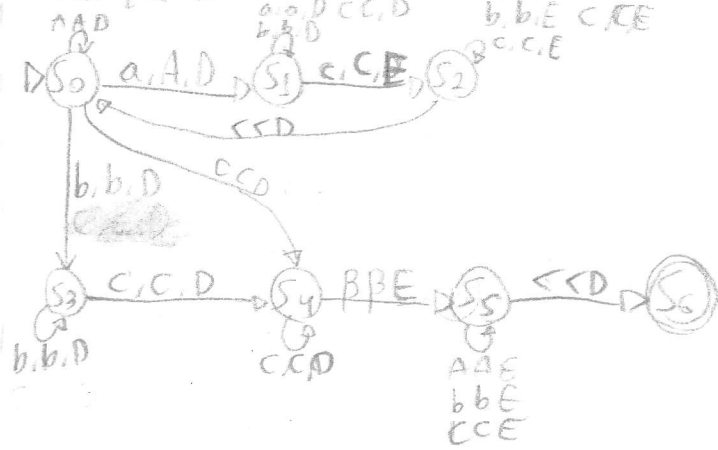


MT Broaderia

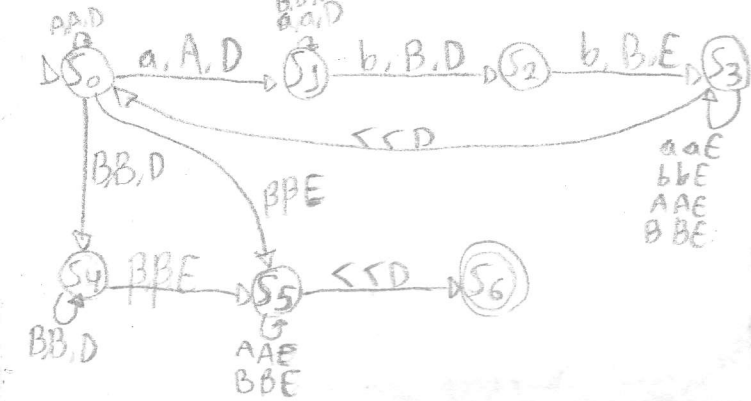
$$\mathcal{L}_1 = \{a^n b^n / n \geq 0\}$$



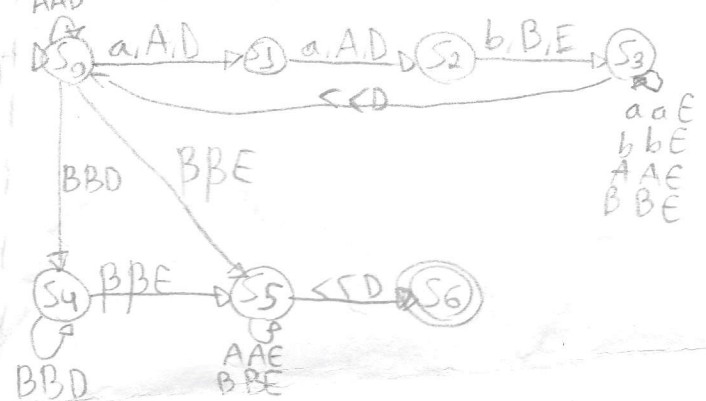
$$\mathcal{L}_2 = \{a^m b^m c^n / m \geq 0\}$$



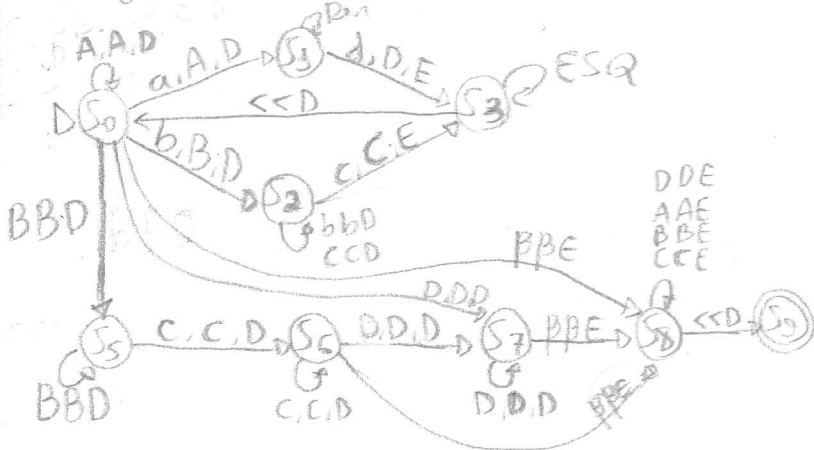
$$\mathcal{L}_3 = \{a^n b^{2n} / n \geq 0\}$$



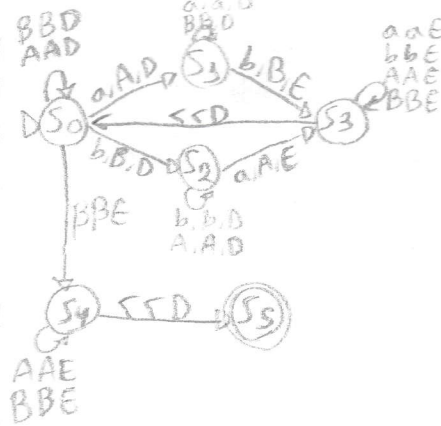
$$\mathcal{L}_4 = \{a^{2m} b^m / m \geq 0\}$$



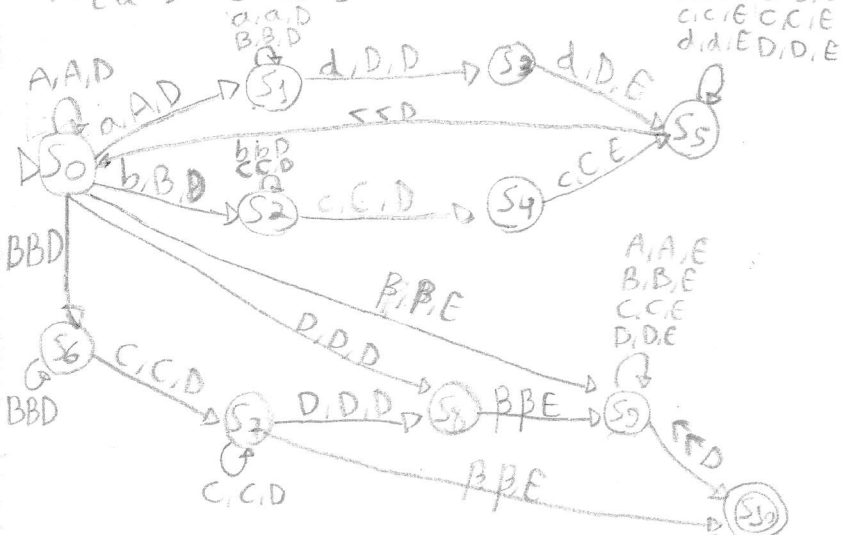
$$\mathcal{L}_5 = \{a^m b^m c^m d^m / m \geq 0 \text{ or } m \geq 0\}$$



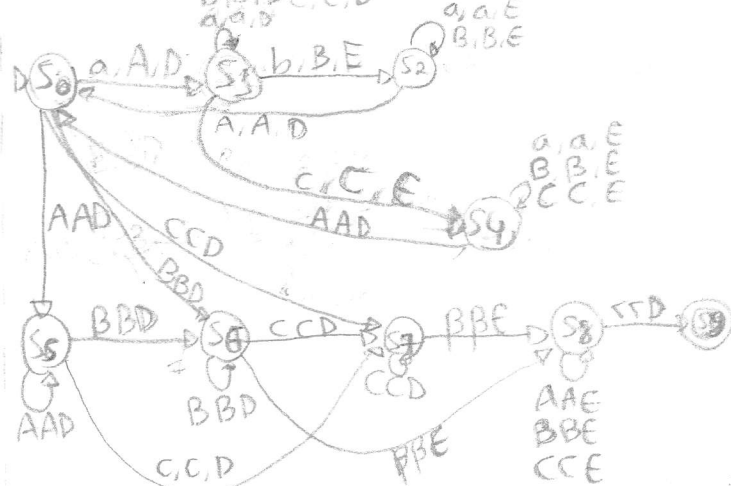
$$\mathcal{L}_6 = \{w \in \{a,b\}^* / w \text{ is a palindrome}\}$$



$$\mathcal{L}_7 = \{a^n b^{3m} c^{2m} d^{2m} / m \geq 0 \text{ or } m \geq 0\}$$



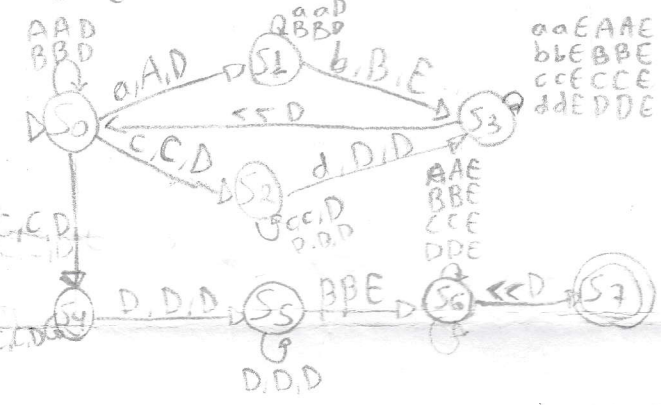
$$\mathcal{L}_8 = \{a^i b^j c^k / i+j+k \geq 0 \text{ or } k \geq 0\}$$



$$\mathcal{L}_9 = \{a^i b^j c^k / k = i + j, i \geq 0, j \geq 0\}$$

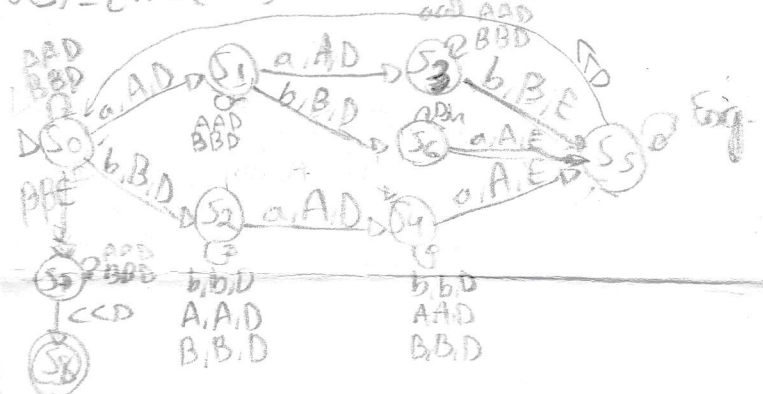
$$\mathcal{L}_{10} = \{a^i b^j c^k / j = i + k, i \geq 0, k \geq 0\}$$

$$\mathcal{L}_{11} = \{a^m b^n c^m d^m / m \geq 0, m > 0\}$$

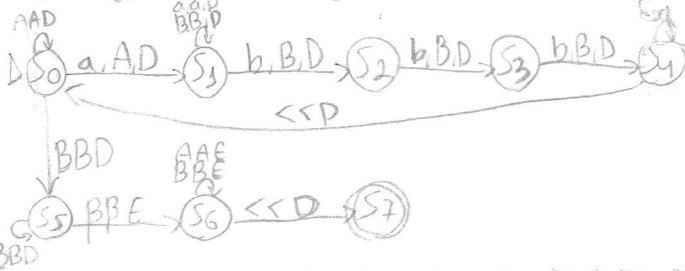


$$\mathcal{L}_{18} = \mathcal{L}_6 + C$$

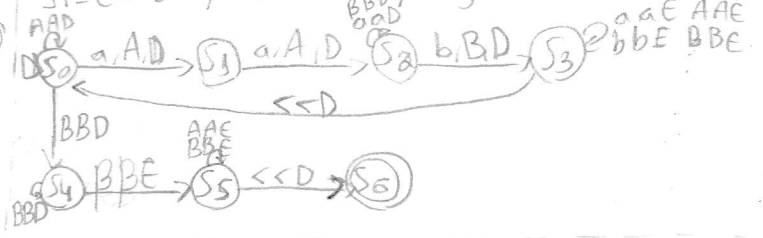
$$\mathcal{L}_{19} = \{w \in \{a,b\}^* / |w|_a = 2 \cdot |w|_b\}$$



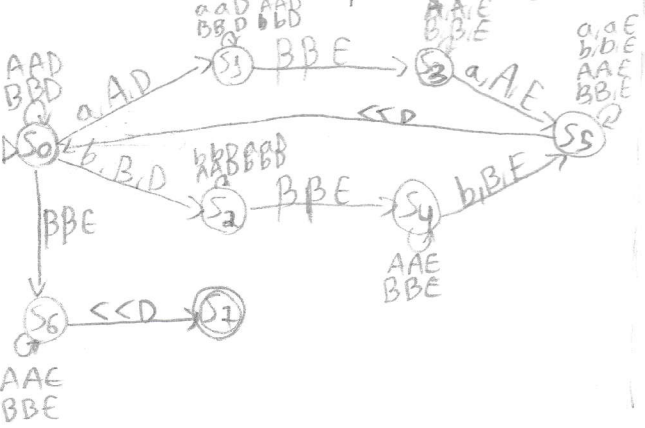
$$\mathcal{L}_{12} = \{a^m b^{2m} / m > 0\}$$



$$\mathcal{L}_{14} = \{a^n b^{n/2} / m > 0 \text{ and } m \text{ is even}\}$$



$$\mathcal{L}_{20} = \{w \in \{a,b\}^* / w \text{ is palindromic}\}$$



# Transição

$S_1$  = recebe uma palavra qualquer com a e b e gera como saída a palavra em caixa alta



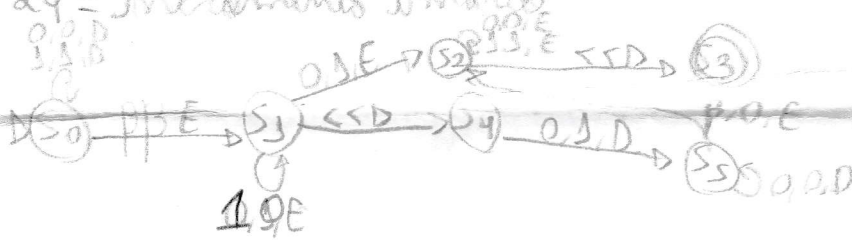
$S_2$  = saída = complemento do número binário



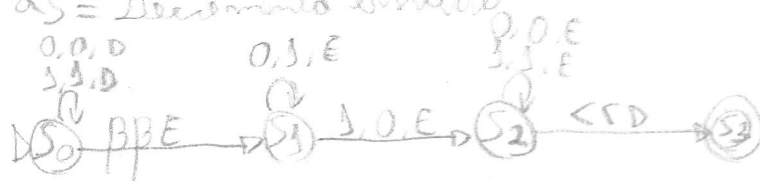
$S_3$  = quádruplo do número binário 3000pp



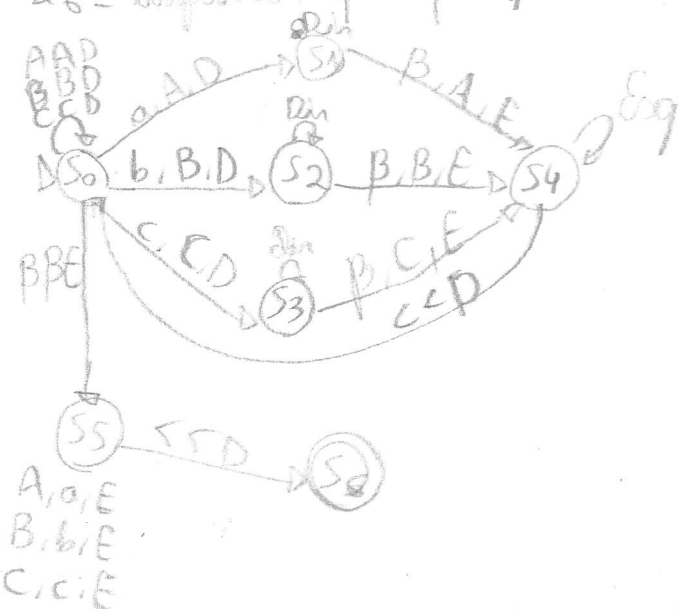
$S_4$  = Incremento binário



$S_5$  = Decremento binário



$S_6$  = duplicar qualquer palavra com a, b, e c



11100  
1

00011

00000

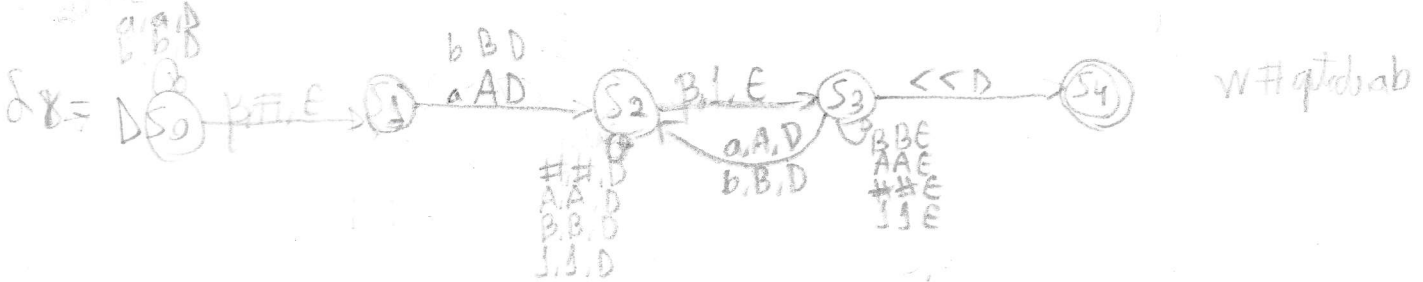
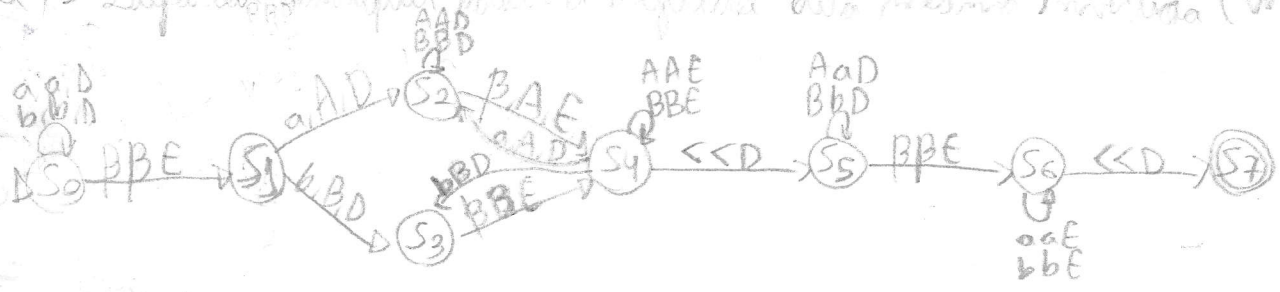
111

< 4800

|   |   |   |   |
|---|---|---|---|
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |



$\Sigma_7 =$  Dupl. cas. qualquer palavra seguida do mesmo invertida (WWR)



$\Sigma_9 =$  WWR

