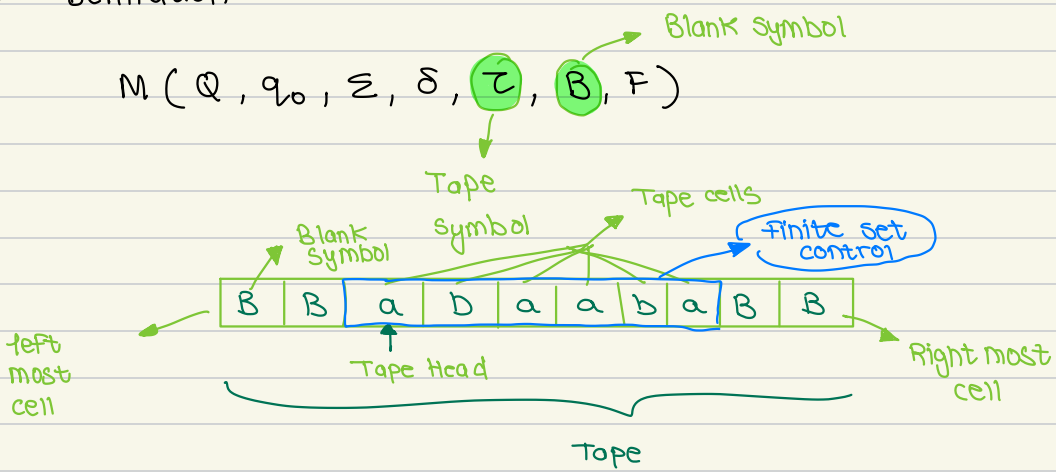
Turing Machine

Defination

$M(Q, q_0, \Sigma, \delta, \Gamma, B, F)$

- Γ : Tape Symbol
- B : Blank Symbol



$\delta : Q \times \Sigma \rightarrow Q \times \Sigma \times \Gamma \times (L/R)$

Read — write

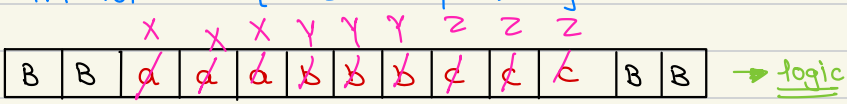
→ Note => for input (Σ)

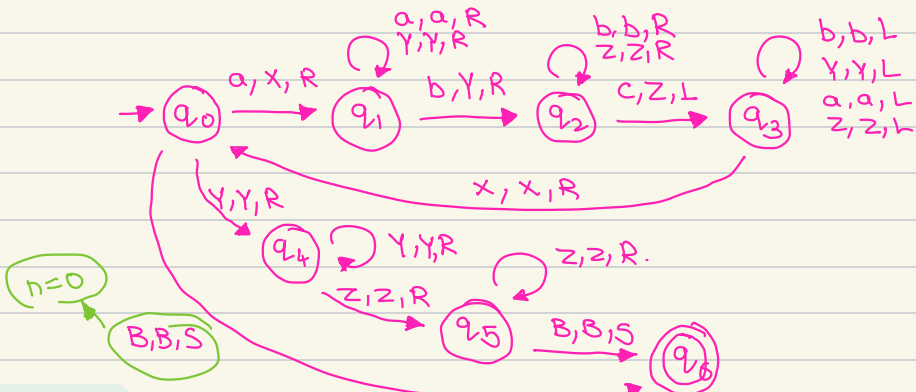
(i) $\Sigma \subseteq \Gamma$

(ii) $\Sigma \cup \{B\} \subseteq \Gamma$

Q.1 Design TM for $L = \{a^n b^n c^n \mid n \geq 0\}$

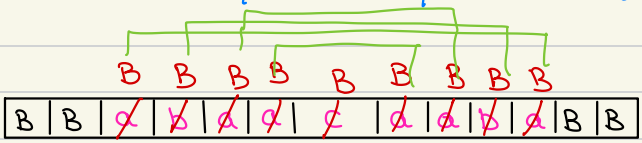
Soln





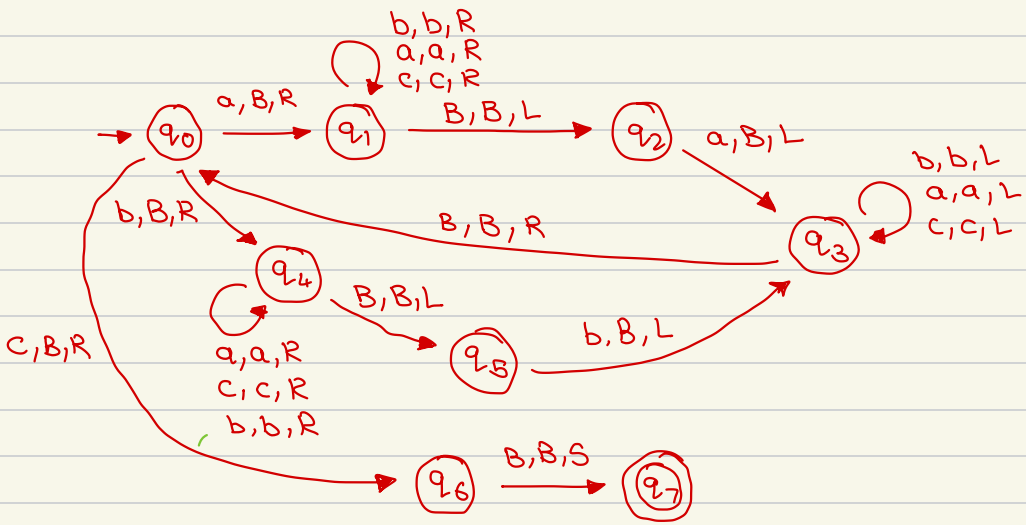
Q.2 Design TM for $L = \{ w c w^R \mid w \in \Sigma = \{a, b\} \}$

Soln



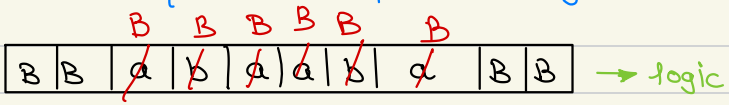
$w = a\,b\,a\,a$

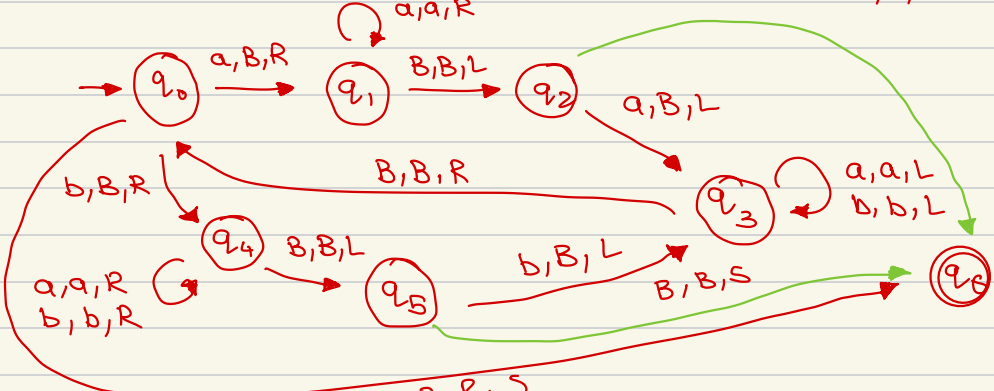
$w^R = a\,a\,b\,a$



Q.3 Design TM for $L = \{$ Set of all pallindrome $\}$ over $\Sigma = \{a, b\}^*$

Soln





Q.4 Design the TM to sub 2 no.s (m & n) & give o/p |m-n|

Soln

4 => 1111

2 => 11