



3) $L = \text{set of all strings ending with } ab$
 i.e. $\{ ab, aab, bab, bbaab, \dots \}$



$$Q = \{A, B, C\}$$

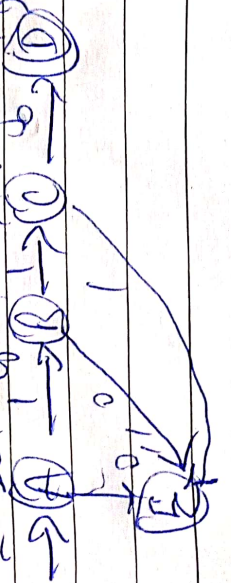
$$\Sigma = \{a, b\}$$

$$q_0 = A$$

$$f = C$$

$$\delta = \begin{array}{|c|c|c|} \hline & a & b \\ \hline A & B & A \\ \hline B & B & C \\ \hline C & A & A \\ \hline \end{array}$$

4) $L = \text{set of all strings that begin with } 10$



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CSC 304

1) A finite automata is the simplest form of computation, it has very limited memory. It is an abstract machine that can be in exactly one of a finite number of states at a time.

2) A deterministic finite automata (DFA) is represented formally by a 5 tuple i.e.

$\langle S, Q, \Sigma, q_0, F \rangle$ where

$Q =$ set of all states

$\Sigma =$ inputs

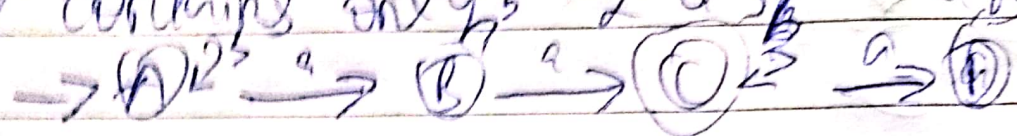
$q_0 =$ initial state

$F =$ set of final states

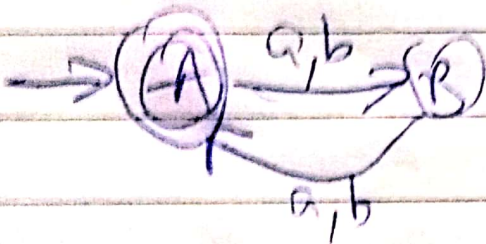
$\delta =$ transition function

3) $F =$ set of all strings starting with bb
 $L = \{ bb, bba, bbab, bbaa, \dots \}$

ii) $L =$ set of all strings over $\{a, b\}$ that the string contains only a^2 or a^3 or a^4 or a^5 or a^6

\rightarrow 

iii) $L =$ set of all strings over $\{a, b\}$ that $w \in \{a, b\}^* \mid |w| = 0 \pmod{2}$



iv) $L =$ set of all strings over $\{a, b\}$ that $w \in \{a, b\}^* \mid |w| = 2 \pmod{3}$

