Discrete Maths Scribed Notes

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Finite State Machine / DFA

1) Finite, Non Empty set called alphabet Σ.
2) Finite set of states Q.
3) Initial/Start set S.
4) Set of final/accepting states F.
5) Transition function $\sigma : \alpha \times \Sigma \to Q$

Finite number of states, the machine is called Deterministic Finite Machine or Deterministic Finite Automaton.

No of states for machine = no of words + 1 to process

P = state sequence

σ1		σn
	Q	

RUN -> state sequence on a word

If at the end of run, the state belongs to F then it is an accepted word,
otherwise the state belongs to U and it isn't an accepted word.

If PL ∈ F, W∈L(M)
If PL ∈ Q,W∉L(M)

PL = state
F = accepting state
Q = possible state
W = word
L = language
M = machine