Ma2201/CS2022
Quiz 1010

Foundations of C.S.

Spring, 2023

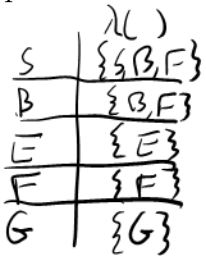
PRINT NAME: _____

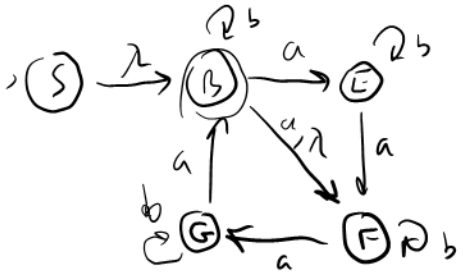
SIGN: _____

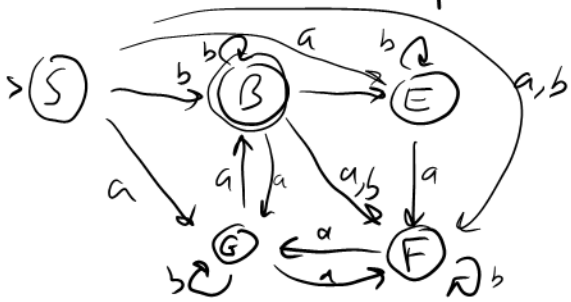
1. (5 pts) The following transition table has S the start state and B the final states. Compute the input transition function in tabular form.

Draw the corresponding equivalent NDFA with no λ transitions.

	a	b	λ
S	$\emptyset$	$\emptyset$	$\{B\}$
B	$\{E, F\}$	$\{B\}$	$\{F\}$
E	$\{F\}$	$\{E\}$	$\emptyset$
F	$\{G\}$	$\{F\}$	$\emptyset$
G	$\{B\}$	$\{G\}$	$\emptyset$







	a	b
SBF	EFG	BF
BF	EFG	BF
EFG	BFG	EFG
BFG	BEFG	BEFG
BEFG	BEFG	BEFG

tabular

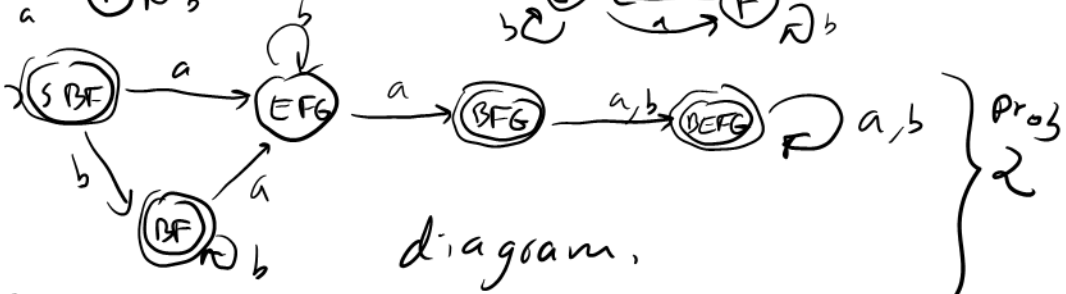


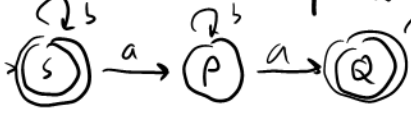
diagram.

Prob 2

2. (5 pts) For your converted machine above, draw an equivalent DFA. You do not need to draw the state $\emptyset$.

The converted DFA could have as many as $2^5 = 32$ states. Only 5 are needed.

$L(M) = \{ w \in \{a,b\}^* \mid n_a(w) \neq 1 \}$



does the same job.