PES UNIVERSITY, Bangalore

(Established under Karnataka Act No. 16 of 2013)

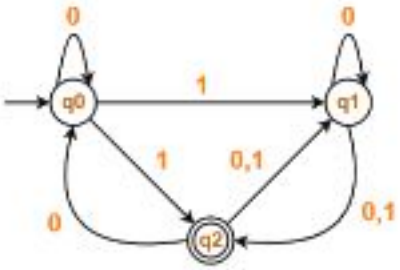
Department of Computer Science & Engineering

UE19CS205 - Automata Formal Languages & Logic

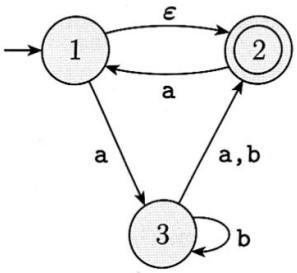
Homework - Conversion of NFA/λ-NFA to DFA

Convert the following nondeterministic automaton given below to an equivalent deterministic one using the subset construction. Draw the graph of the resulting DFA.

1)



2)



3)

		a	b	
→	q_0	$\{q_1, q_2\}$	$\emptyset$	
	q_1	$\emptyset$	$\{q_1\}$	F
	q_2	$\emptyset$	$\{q_3\}$	F
	q_3	$\{q_2\}$	$\emptyset$	

4)

	ϵ	0	1
$\rightarrow q_0$	$\emptyset$	$\{q_1\}$	$\{q_0, q_2\}$
q_1	$\{q_2\}$	$\{q_4\}$	$\{q_3\}$
q_2	$\emptyset$	$\{q_1, q_4\}$	$\{q_3\}$
q_3	$\{q_5\}$	$\{q_4, q_5\}$	$\emptyset$
q_4	$\{q_3\}$	$\emptyset$	$\{q_5\}$
$^*q_5$	$\emptyset$	$\{q_5\}$	$\{q_5\}$

5)