

Homework #4  
CS322/KAIST 2011 FALL  
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Due date: 10/20, 14:30  
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**Exercise 1 (10pt)** Prove that the following is not regular languages.

- a.  $\{0^n 1^m \mid n \leq m\}$  (5pt)
- b.  $\{0^n 10^n \mid n \geq 1\}$  (5pt)

**Exercise 2 (10pt)** Below table is the transition table of a DFA.

	0	1
$\rightarrow A$	B	A
B	A	C
C	D	B
*D	D	A
E	D	F
F	G	E
G	F	G
H	G	D

(Symbol  $\rightarrow$  denotes start state and symbol \* denotes final state)

- a. Draw the table of distinguishabilities for this automaton. (5pt)
- b. Construct the minimum-state equivalent DFA. (5pt)