Homework #9
CS322 / KAIST 2011 Fall
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Exercise 1. (14pt) Design Turing machines for the following language:

(a) $\{a^n b^n c^n | n \geq 1\}$

(b) $\{ww^R \mid w \text{ is any string of } 0's \text{ and } 1's\}$

Exercise 2. (6pt) Answer true or false to each of the following questions. Then, provide a short (one or two sentence) justification of your answer:

(a)There exists a language that is decidable by a deterministic Turing machine having two tapes that is not decidable by any deterministic Turing machine having just one tape.

(b) The language {1x1y1 : x, y ∈ {0, 1}∗ and | x| = |y|} is decidable