Introduction to the Theory of Computation Solutions

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Let $ALL_{DFA} = \{<A> | A \text{ is a DFA and } L(A) = \Sigma^*\}$. Show that ALL_{DFA} is decidable.
Solution: We will design a TM T that decides ALL_{DFA}:
T = "On input $\langle A \rangle$ where A is a DFA:

1. Construct a DFA B such that $L(A) = \overline{L(B)}$.
2. Run E_{DFA} on input $\langle B \rangle$. Output what E_{DFA} outputs.

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