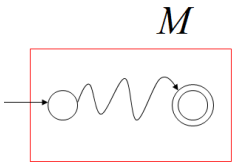
CS3186 Assignment #8

(I) Given the description of $L_1$ and $L_2$ as regular in the form of acceptors $M_1$ and $M_2$. Show that the following languages are regular by constructing an automaton using generic descriptions of M below:




(i) $L_1 \cup L_2$
(ii) $L_1 \ L_2$
(iii) $L_1$ complement
(iv) $L_1^*$
(v) $L_1^R$

(II)

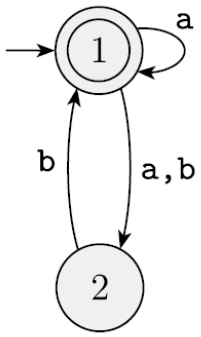
$\Sigma = \{0,1\}$

(i) Give a DFA, $M_1$, that accepts a Language
$L_1$ = {all strings that contain 00}
(ii) Give a DFA, $M_2$, that accepts a Language
$L_2$ = {all strings that end with 01}
(iii) Give acceptor for Reverse of $L_1$
(iv) Give acceptor for complement of $L_2$
(v) Give acceptor for $L_1$ union $L_2$
(vi) Give acceptor for $L_1$ intersection $L_2$
(vii) Give acceptor for $L_1$ - $L_2$

(III) Give the DFAs for the two languages {w| w has exactly two a's} and {w| w has at least two b's}.

Redo exercises (iii) through (vii)

(IV) Given the automaton below for a language L




Construct an automaton for (i) Reverse of L (ii) Complement of L