Exercise 9

Given FA $A$ where $\Sigma := \{a, b\}$ as shown on the right. Draw the oracle-automaton $\text{Oracle}(A)$ as defined on lecture slide 8. Make $\text{Oracle}(A)$ complete by adding an error state.

Exercise 10

Given FA $A$ from Exercise 9, draw the optimized oracle-automaton $\text{Oracle}(A)$ as defined on lecture slide 9. Is $\text{Oracle}(A)$ complete? Justify your answer.

Exercise 11

Draw the I/O-automaton for FA $A$ as shown on the right.

Exercise 12

Implement an FA accepting the language generated by the regular expression $(a \mid b)^*ab(a \mid b)^*$ in your favourite programming language. You may choose one out of the different implementation patterns presented in the lecture.\footnote{See also http://fmv.jku.at/fm/faimpl.zip.} Briefly describe your solution and submit a print-out of the source code as well.