

Concepts of Programming Languages, CSCI 305, Fall 2021
Translation of Token Description to Regular Expressions, 43-48 & 103-105
Class Exercise, Sept. 1

Give regular expressions for the following:

1. all strings on $\{a,b\}$ with exactly one a.
 $b^* \circ a \circ b^*$ or just b^*ab^*
2. all strings on $\{a,b\}$ with at least one a.
 $(a|b)^* a (a|b)^*$
3. all strings on $\{a,b\}$ with no more than three a's
 $b^* (a|\epsilon) b^* (a|\epsilon) b^* (a|\epsilon) b^*$
4. all strings on $\{0, 1\}$ where every 00 is followed immediately by a 1.
 $(1|01|001)^* (0|\epsilon)$