

**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.
2. all strings on  $\{a,b\}$  with at least one a.
3. all strings on  $\{a,b\}$  with no more than three a's
4. all strings on  $\{0, 1\}$  where every 00 is followed immediately by a 1.