

# Theory of Computation

homework 1  
Due: 9/30/2014

**Problem 1** Why can't the input of a Turing Machine contain  $\sqcup$ 's?

**Problem 2** The TM on p. 28 of the slides halts with a “yes” if and only if the input string contains two consecutive 1's. That program assumes the input alphabet  $\Sigma = \{0, 1, \sqcup, \triangleright\}$ . Now, write a TM program for the same problem when  $\Sigma = \{0, 1, 2, \sqcup, \triangleright\}$ .