

CS580 Homework 10
Fall 2024
October 30, 2024
(Due 4:10pm, November 6, 2024)

Email homework assignments to ldojcsak@vols.utk.edu by the beginning of class time.

1. What is the first string in each of the following languages?
 - a. L_d
 - b. $\overline{L_d}$
 - c. L_u
 - d. $\overline{L_u}$
 - e. L_e
 - f. $\overline{L_e}$

2. Determine whether each of the following languages is decidable (recursive). If the language is decidable, informally describe an algorithm to decide it. If the language is undecidable, show that if it were decidable then we could decide one of L_u or L_e .
 - a. $L = \{ \langle M, \omega \rangle \mid M \text{ halts on } \omega \}$

 - d. $L = \{ \langle M \rangle \mid M \text{ accepts more than 10 strings of length less than 10} \}$