CS 135 Discrete Structures

Spring 2015

Homework Assignment #8: Equivalence Relations and Partial Orderings.

All problems taken from ‘Rosen’ (with the exception of the “related to” question).

Remember to include the Pledge on your submission.

Section 9.5

* #1a,b,d
* #21
* #22
* #23
* #35 a,b,d
* #44 b,c
* #58

*Hint: Consider creating all the possible bracelets as C X C X C where C={Red, White, Blue} then forming the classes*

* (This is “related” to #11.) In early implementations of BASIC, identifiers (variable names) are limited to two distinguishing characters. Show that the relation B consisting of all pairs (*x, y*) such that *x* and *y* are alphanumeric strings (beginning with a letter) of length 1 or 2 that agree in their first two characters is an equivalence relation on the set of all such strings of arbitrary length.
  + What does this mean for BASIC variables COUNTER, COLLECTION, COUNTRY?
  + What does this mean for BASIC variables A1, A2, …. A20?

*Hint: There are two different classes of problems, variables of length 1 and variables with length > 1*

Section 9.6

* #2b,c
* #9
* #10
* #23c
* #67