CSC301 Assignment #5

Due Tuesday 10/18 in Sakai.

**Exercise 2** Give the ML type corresponding to each of the following sets:

- a. \{true, false\}
- b. \{true, false\} → \{true, false\}
- c. \{(true, true), (true, false), (false, true), (false, false)\}

**Exercise 3** Investigate and report on these array varieties. Describe your findings fully, and don’t forget to discuss representation issues and supported operations.

- b. Associative arrays in Perl.
- c. Arrays in APL.

**Exercise 4** Suppose there are three variables \(X\), \(Y\), and \(Z\) with these types:

- \(X\): integer that is divisible by 3
- \(Y\): integer that is divisible by 12
- \(Z\): integer

For each of the following assignments, knowing nothing about the values of the variables except their types, answer whether a language system can tell before running the program whether the assignment is safe? Why or why not?

- a. \(X := Y\)
- b. \(X := X\)
- c. \(Y := Y + 1\)
- d. \(Z := X\)
- e. \(X := Z\)
- f. \(X := X + 3\)
- g. \(X := X + Z\)

Do Exercise 2 and Exercise 4 d through g. For exercise 2 recall that \{\ldots\} specifies a set and (\ldots) a tuple. A list is specified as [...].