

## CSC301 Assignment #5

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

- $\{true, false\}$
- $\{true, false\} \rightarrow \{true, false\}$
- $\{(true, true), (true, false), (false, true), (false, false)\}$

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

- Arrays in the language SNOBOL4.
- Associative arrays in Perl.
- 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?

- $X := Y$
- $X := X$
- $Y := Y + 1$
- $Z := X$
- $X := Z$
- $X := X + 3$
- $X := X + Z$

**Do Exercise 2 and Exercise 4 d through g.**

**For exercise 2 recall that  $\{...\}$  specifies a set and  $(...)$  a tuple.**

**A list is specified as  $[...]$ .**