CS 3723: Programming Languages

Feb 8, 2012

You Name:

1. Which of the following are properties of lists in pure functional Lisp/Scheme?

   (a) Elements do not need to have the same type.

   (b) Lists can be nested inside one another.

   (c) Can represent both singly linked lists and arbitrarily shaped trees.

   (d) Cycles are supported in the list.

2. Which of the following is the difference between an expression and a statement?

   (a) An expression has a value, while a statement does not;

   (b) An expression does not modify anything, while a statement does;

   (c) An expression does not have side effects, while a statement does.

3. Define a function *same*? which takes two parameters, x and y. The function returns true if x and y are identical; it returns false otherwise. Note that the *eq*? operator provided by Scheme checks whether two atomic values are equal but does not recursively check whether two nested lists are identical, but your function is required to do so.