Assignment 5: ADT's, Inductive Functions and SML

Ernesto Rodriguez

October 27, 2011

1 Problem 5

The Box of Chocolates ADT will be represented as follows:

$$S^0 = one, myNats, sweetness, weight, milkPart, dimensions, chocolate$$

$$\sum = \{[i : one], [O : myNats], [++ : one * myNats \mapsto myNats], [sweetness : myNats \mapsto sweetness],$$
$$[weight : myNats \mapsto weight], [milkPart : myNats * myNats \mapsto milkPart],$$
$$[chocolate : sweetness * weight * milkPart * dimensions \mapsto chocolate],$$
$$[dimensions : myNats * myNats * myNats \mapsto dimensions],$$
$$[plus : myNats * myNats \mapsto myNats],$$
$$[mul : myNats * myNats \mapsto myNats]\}$$

$$Chocolates = \langle S^0, \sum \rangle$$