

Pauta Control 1, pregunta 3 - CC51H: Programación Orientada a Objetos

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May 31, 2010

1. Especificación de tipo

$\text{List}[G]$ donde G es un tipo arbitrario.

2. Funciones.

$\text{Count} : \text{List}[G] \rightarrow \mathbb{N}$

$\text{Item} : \text{List}[G] \times i \rightarrow G$

$\text{Add} : \text{List}[G] \times G \rightarrow \text{List}[G]$

$\text{Remove} : \text{List}[G] \times i \rightarrow \text{List}[G]$

$\text{Remove} : \text{List}[G] \times G \rightarrow \text{List}[G]$

$\text{Contains} : \text{List}[G] \times G \rightarrow \text{boolean}$

$\text{new} : G \rightarrow \text{List}[G]$

$\text{new} : \rightarrow \text{List}[G]$

3. Axiomas

$\text{Contains}(l, \text{Item}(l, i)) = \text{true}$

$\text{Contains}(\text{Add}(l, G), G) = \text{true}$

$\text{Contains}(\text{Remove}(l, \text{Item}(l, i)), \text{Item}(l, i)) = \text{false}$

$\text{Contains}(\text{Remove}(l, G), G) = \text{false}$

$\text{Remove}(l, \text{Count}(l)) = \text{Remove}(l, \text{Item}(l, \text{Count}(l)))$

$\text{Count}(\text{Remove}(l, i)) = \text{Count}(l) - 1$

$\text{Count}(\text{new}(G)) = 1$

Donde

$i \in [0, \text{Count}(\text{List}[G]))$ y $\text{boolean} = \text{true}, \text{false}$

4. Precondiciones

$\text{Item}(l : \text{List}[G], i)$ require $i \in [1, \text{Count}(l)]$

$\text{Remove}(l : \text{List}[G], i)$ require $i \in [1, \text{Count}(l)]$