

## insert-by-no-repeats<sup>11,40</sup>

$\forall T:\text{Type}, eq, r:(T \rightarrow T \rightarrow \mathbb{B}).$   
 $(\forall a, b:T. (\uparrow(eq(a,b))) \iff (a = b))$   
 $\Rightarrow \text{Linorder}(T;a,b.\uparrow(r(a,b)))$   
 $\Rightarrow (\forall x:T, L:(T \text{ List}).$   
     $\text{sorted-by}(\lambda x,y. \uparrow(r(x,y));L) \Rightarrow \text{no\_repeats}(T;L) \Rightarrow \text{no\_repeats}(T;\text{insert-by}(eq;r;x;L))$