

73 (join) Define function *join* to apply to a list of lists and produce their join. For example,  
 $join\ [[0; 1; 2]; [nil]; [[3]]; [4; 5]] = [0; 1; 2; [3]; 4; 5]$

After trying the question, scroll down to the solution.

§ I'm going to define *join* so it applies to all lists, not just lists of lists. But when applied to a list of lists, it will produce their join, as required. Let *i* be an item, and let *s* and *t* be any strings. Then

*join* [*nil*] = *nil*

*join* [*i*] = *i*

*join* [*s*; *t*] = *join* [*s*] ;; *join* [*t*]

Now let's try it in the example.

*join* [[0; 1; 2]; [*nil*]; [[3]]; [4; 5]]

= *join* [[0; 1; 2]] ;; *join* [[*nil*]] ;; *join* [[[3]]] ;; *join* [[4; 5]]

= [0; 1; 2] ;; [*nil*] ;; [[3]] ;; [4; 5]

= [0; 1; 2; [3]; 4; 5]