FUNCTII PREDEFINITE

Lungimea unei liste - manual

len([],0).

len( [ \_| T ], N ) :- len(T,X), N is X+1.

Lungimea unei liste – predefinit

length(Lista, Lungime).

Daca x apartine listei – manual

member(X,[X|T]).

member(X,[H|T]) :- member(X,T).

Daca x apartine listei – predefinit

member(X,Lista).

Concatenare liste – manual

append([],L,L).

append([H|T],L2,[H|L3]) :- append(T,L2,L3).

?- append([1,2,3],[a,b,c],R). => R=[1,2,3,a,b,c]

?- append(X,Y,[1,2,3,a,b,c]). => face toate combinatiile de split de lista:

**X** = [],  
**Y** = [1, 2, 3, a, b, c]

**X** = [1],  
**Y** = [2, 3, a, b, c]

**X** = [1, 2],  
**Y** = [3, a, b, c]

**X** = [1, 2, 3],  
**Y** = [a, b, c]

**X** = [1, 2, 3, a],  
**Y** = [b, c]

**X** = [1, 2, 3, a, b],  
**Y** = [c]

**X** = [1, 2, 3, a, b, c],  
**Y** = []

Concatenare liste - predefinit

append(Lista1, Lista2, RezultatL1L2).

Oglinditul unei liste – manual

reversed([],[]).

reversed([H|T],R):- reversed(T,N), append(N,[H],R).

Oglinditul unei liste – predefinit

reverse(Lista, ListaInvers).

Sorteaza lista de pe primul arg cu alg insert sort

insertsort([],[]).

insertsort([H|T],L) :- insertsort(T,L1), insert(H,L1,L).

insert(X,[],[X]).

insert(X,[H|T],[X|[H|T]]) :- X < H.

insert(X,[H|T],[H|L]) :- X >= H, insert(X,T,L).

Sorteaza lista de primul arg cu alg quicksort

quicksort([],[]).

quicksort([H|T],L) :- split(H,T,A,B), quicksort(A,M), quicksort(B,N), append(M,[H|N],L).

split(\_,[],[],[]).

split(X,[H|T],[H|A],B) :- H < X, split(X,T,A,B).

split(X,[H|T],A,[H|B]) :- H >= X, split(X,T,A,B).

Descompune un atom intr-o lista de caractere

atom\_chars(Atom, CharList).

?- atom\_chars(capra, L). => L=[c,a,p,r,a]

?- atom\_chars(1234, L). => L=[‘1’ ,’2’, ’3’, ‘4’]

?- atom\_chars(C, [capra]). => C=capra

?- atom\_chars(C, [1,2,3,4]). => C=‘\u0001\u0002\u0003\u0004’

?- atom\_chars(C, [‘1’ ,’2’, ’3’, ‘4’]). => C=’1234’

Maximul unei liste – manual

max([],0).

max([H|T],R):- max(T,S), H>=S, R is H.

max([H|T],R):- max(T,S), H<S, R is S.