Willis Allstead

5/1/17

CS 326

HW7

all code assumes we can use the available member function,

otherwise I would have rewritten the one given in class.

All comments have been removed for readability, they remain in the code sent through email.

isSet([]).

isSet([\_]).

isSet([H|T]):- not(member(H,T)), isSet(T).

subSet([],[]).

subSet([],[\_|\_]).

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

union([],C,C).

union([H|T],S,C):- member(H,S), !, union(T,S,C).

union([H|T],S,[H|Ct]):- union(T,S,Ct).

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

intersection([H|T],S,[H|Ct]) :- member(H,S), intersection(T,S,Ct).

intersection([\_|T],S,C) :- intersection(T,S,C).

tally(\_,[],0).

tally(E,[E|T],N):- tally(E,T,X), N is 1+X.

tally(E,[\_|T],N):- tally(E,T,N).

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

subst(X,X,Y,Y).

subst(X,Y,[H|T],[I|U]):- X = H, I = Y, subst(X,Y,T,U).

subst(X,Y,[H|T],[I|U]):- I is H, subst(X,Y,T,U).

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

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

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

flatten([], []).

flatten([[]|Ls], R) :- flatten(Ls, R).

flatten([[El|L1s]|Ls], [El|R]) :- flatten([L1s|Ls], R).