Laborator P2 – exercitiul 4

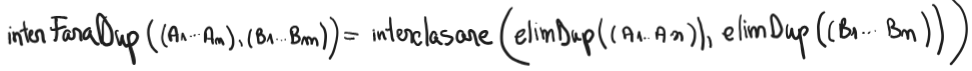
# EXERCITIUL 4A

Sa se interclaseze fara pastrarea dublurilor doua liste sortate.

## MODEL RECURSIV

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## MODEL DE FLUX

(i,i,o) daca listaRezultat = A U B \ A n B (interclasare(A,B))

(i,i,i) daca listaRezultat := A U B \ A n B

## COD

%Problema 4a

%interclasare(A:list,B:list,M:list) (i,i,o), (i,i,i)

%in M se va obtine interclasarea dintre A si B

interclasare([],[],[]):-!.

interclasare([],B,B):-!.

interclasare(A,[],A):-!.

interclasare([Head\_A|Tail\_A], [Head\_B|Tail\_B], [Head\_A|M]):-

Head\_A < Head\_B,

!,

interclasare(Tail\_A, [Head\_B|Tail\_B], M).

interclasare([Head\_A|Tail\_A], [Head\_B|Tail\_B], [Head\_B|M]):-

Head\_B < Head\_A,

!,

interclasare([Head\_A|Tail\_A], Tail\_B, M).

interclasare([Head\_A|Tail\_A], [Head\_B|Tail\_B], M):-

Head\_A =:= Head\_B,

!,

interclasare(Tail\_A, Tail\_B, M1),

M = [Head\_A|M1].

%elimDup(L:list, M:list)

%M va contine lista L fara duplicate

elimDup([],[]):-!.

elimDup([Head|Tail], [Head|M]):-

\+ member(Head,Tail),

!,

elimDup(Tail,M).

elimDup([Head|Tail], M):-

member(Head,Tail),

!,

elimDup(Tail,M).

%interFaraDup(A:list,B:list,M:list)

% in M se va obtine interclasarea listelor care nu vor avea elemente

% duplicate

interFaraDup(A,B,M):-

elimDup(A,A1),

elimDup(B,B1),

interclasare(A1,B1,M).

testInterclasare1:-interFaraDup([],[],[]).

testInterclasare2:-interFaraDup([],[1,2],[1,2]).

testInterclasare3:-interFaraDup([1,2],[],[1,2]).

testInterclasare4:-interFaraDup([1,1,3,4,6],[2,3],[1,2,3,4,6]).

# EXERCITIUL 4B

Se da o lista eterogena, formata din numere intregi si liste de numere sortate. Sa se interclaseze fara pastrarea dublurilor toate sublistele.

## MODEL RECURSIV

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## MODEL DE FLUX

(i,i) daca listaRezultat := interclasarea sublistelor

(i,o) daca listaRezultat = interclasarea sublistelor

## COD

%Problema 4b

%interclasareSublista(L:list,Rezultat:list) (i,i) (i,o)

%in Rezultat se va obtine interclasarea tuturor sublistelor listei L

interclasareSublista([],[]):-!.

interclasareSublista([Head\_L|Tail\_L], Rezultat):-

is\_list(Head\_L),

!,

interclasareSublista(Tail\_L,RestRez),

interFaraDup(Head\_L,RestRez,Rezultat).

interclasareSublista([Head\_L|Tail\_L], Rezultat):-

\+ is\_list(Head\_L),

!,

interclasareSublista(Tail\_L,Rezultat).

testInterclasareSublista:-interclasareSublista([1, [2, 3], 4, 5, [1, 4, 6], 3, [1, 3, 7, 9, 10], 5, [1, 1, 11], 8],[1, 2, 3, 4, 6, 7, 9, 10, 11]).