Ex.3  
Program P1;  
  
type AdresaCandidat=^Candidat;  
 Candidat=record  
 numeprenume : string;  
 notamedia : real;  
 Urm : AdresaCandidat  
 end;  
   
 var i,n : integer; nume:string; media : real; p,r,v,u : AdresaCandidat;  
   
 procedure creare(var p:AdresaCandidat);  
begin   
write('introdu candidatul (Cheia de sfarsit e cuvantul final) '); readln(nume);  
 while nume <>'final' do  
 begin write('introdu media candidatului ',nume,' '); readln(media);  
 new(R); r^.numeprenume:=nume; r^.notamedia:=media; r^.urm:=nil;  
 if P=nil then P:=R else v^.urm:=r;  
 v:=r;  
 write('Cheia de sfarsit e cuvantul final '); readln(nume);  
 end;  
 end;  
   
procedure afisare(u:AdresaCandidat);  
begin R:=u;  
 while R<>nil do  
 begin writeln(r^.numeprenume:20,r^.notamedia:7:2);   
 r:=r^.urm;  
 end;  
end;  
  
procedure cei\_cu\_7\_5(var p,u:AdresaCandidat);  
var q: AdresaCandidat;  
begin   
u:=nil; r:=p;  
 while r<>nil do  
 begin if r^.notamedia>=7.5  
 then begin new(q); q^.numeprenume:=r^.numeprenume;  
 q^.notamedia:=r^.notamedia; q^.urm:=nil;  
 if u=nil then begin u:=q; v:=q; end  
 else begin v^.urm:=q; v:=q; end;  
 end;  
 r:=r^.urm;  
 end;  
end;  
   
procedure cei\_cu\_9(var p,u:AdresaCandidat);  
var q: AdresaCandidat;  
begin   
u:=nil; r:=p;  
 while r<>nil do  
 begin if r^.notamedia>=9.0  
 then begin new(q); q^.numeprenume:=r^.numeprenume;  
 q^.notamedia:=r^.notamedia; q^.urm:=nil;  
 if u=nil then begin u:=q; v:=q; end  
 else begin v^.urm:=q; v:=q; end;  
 end;  
 r:=r^.urm;  
 end;  
end;  
  
procedure exclude(var p:AdresaCandidat;var ne:integer);  
begin   
ne:=0; {ne- numarul de elemente} r:=p; v:=r;  
 while r<>nil do  
 begin if r^.notamedia<6.0  
 then if P=r then begin P:=r^.urm; v:=p; dispose (r);r:=v; end  
 else begin v^.urm:=r^.urm; dispose (r);r:=v^.urm; end  
 else begin ne:=ne+1; v:=r; r:=r^.urm; end;  
 end;  
 end;  
  
begin  
 p:=nil; creare(p); writeln('Lista initiala este'); afisare(p);  
 cei\_cu\_9(p,u); writeln('Lista celor cu 9'); afisare(u);  
 exclude(p,n); writeln('Lista cu media mai mare de 6'); afisare(p);  
end.

Ex.4.

Program ex\_4;

type List=^ListItem;

ListItem = record

date : string;

valoare : real;

ordine : integer;

urm : List;

end;

list\_item = record

nume : string;

baza : List;

count : integer;

end;

datebaza = array[1..100] of list\_item;

var a:datebaza;

r,b,v:List;

c:integer;

ans:string;

procedure create\_list();

var ans, nume:string;

i:integer;

begin

inc(c);

writeln('List Name : '); readln(nume);

while ans<>'EXIT' do begin

writeln();

writeln(' scrie EXIT pentru a opri crearea listelor ');

writeln('apasa ENTER pentru a continua');

readln(ans);

if ans<>'EXIT' then begin

new(r);

inc(i);

writeln(i,'| Data :'); readln(r^.date);

writeln(i,'| Value :'); readln(r^.valoare);

r^.ordine:=i;

if i=1 then b:=r else v^.urm:=r;

v:=r;

end else begin

a[c].baza:=b;;

a[c].nume:=nume;

a[c].count:=i;

end;

end;

end;

procedure concat();

var one,two,i,save:integer;

nume:string;

q,baza,top:List;

begin

writeln('prima lista Databaza ID : '); readln(one);

writeln('a doua lista Databaza ID : '); readln(two);

inc(c);

writeln('lista noua nume : ');

readln(nume);

a[c].nume:=nume;

b:=a[one].baza;

r:=b;

while r<>nil do begin

new(q);

inc(i);

q^.ordine:=i;

q^.date:=r^.date;

q^.valoare:=r^.valoare;

if i=1 then a[c].baza:=q else begin

top^.urm:=q;

end;

top:=q;

r:=r^.urm;

end;

save:=i;

b:=a[two].baza;

r:=b;

while r<>nil do begin

new(q);

inc(i);

q^.ordine:=i;

q^.date:=r^.date;

q^.valoare:=r^.valoare;

top^.urm:=q;

top:=q;

r:=r^.urm;

end;

end;

procedure descompunere;

var s,i,j,p,cut:integer;

descompunerea:boolean;

nume:string;

q,v:List;

begin

writeln('Databaza ID din lista descompusa ');

readln(s);

writeln();

r:=a[s].baza;

while r<>nil do begin

inc(i);

writeln(i,'.');

writeln(' date :',r^.date);

writeln(' valoare :',r^.valoare);

r:=r^.urm;

end;

writeln();

writeln();

writeln('NO. Elementului de la care descompunerea incepe : ');

readln(cut);

writeln();

writeln('numele noii liste 1 : ');

readln(nume);

inc(c);

a[c].nume:=nume;

writeln();

writeln('numele noii liste 2 : ');

readln(nume);

inc(c);

a[c].nume:=nume;

r:=a[s].baza;

while r<>nil do begin

if r^.ordine=cut then descompunerea:=true;

if descompunerea<>true then begin

new(q);

inc(j);

q^.date:=r^.date;

q^.valoare:=r^.valoare;

if j=1 then a[c-1].baza:=q else v^.urm:=q;

v:=q;

end else begin

new(q);

inc(p);

q^.date:=r^.date;

q^.valoare:=r^.valoare;

if p=1 then a[c].baza:=q else v^.urm:=q;

v:=q;

end;

r:=r^.urm;

end;

end;

procedure datebaza\_display();

var i:integer;

begin

writeln();

writeln('liste in datebaza');

writeln();

for i:=1 to c do begin

writeln(i,'|| ',a[i].nume);

end;

end;

procedure list\_display();

var n,i:integer;

begin

writeln();

writeln('ID listei din Databaza : ');

readln(n);

writeln();

writeln();

writeln(',a[n].nume,'|);

writeln();

r:=a[n].baza;

while r<>nil do begin

inc(i);

writeln(i,'#');

writeln(' date : ',r^.date);

writeln(' valoare : ',r^.valoare);

r:=r^.urm;

end;

end;

procedure show();

var i,n,cnt:integer;

save:integer;

min:real;

ans:string;

b:List;

begin

writeln();

writeln('List Databaza ID : ');

readln(n);

writeln();

writeln('criteriul selectarii');

writeln('V - Value');

writeln('D - Data (alfabetic)');

readln(ans);

if ans = 'V' then begin

for i:=1 to a[n].count do begin

r:=a[n].baza;

while r<>nil do begin

if r^.ordine >= i then begin

if r^.ordine=i then min:=r^.valoare;

if r^.valoare < min then min:=r^.valoare;

end;

writeln(min);

r:=r^.urm

end;

end;

writeln(min);

end else if ans = 'D' then begin

end;

end;

procedure by\_valoare(n:integer);

var min:real;

val:real;

dat:string;

save,i:integer;

box:List;

begin

for i:=1 to a[n].count do begin

r:=a[n].baza;

min:=r^.valoare;

while r<>nil do begin

if r^.ordine >= i then begin

if min > r^.valoare then min:=r^.valoare;

end else save:=r^.ordine;

r:=r^.urm;

end;

inc(save);

r:=a[n].baza;

while r<>nil do begin

if r^.ordine=save then box:=r;

r:=r^.urm;

end;

r:=a[n].baza;

while r<>nil do begin

if r^.valoare=min then begin

dat:=box^.date;

val:=box^.valoare;

writeln(box^.valoare,'<=>',r^.valoare);

box^.date:=r^.date;

box^.valoare:=r^.valoare;

r^.valoare:=val;

r^.date:=dat;

end;

r:=r^.urm;

end;

end;

end;

procedure show;

var n,i:integer;

lim:real;

begin

writeln('Databaza List ID : ');

readln(n);

writeln('arata valoarea:');

readln(lim);

r:=a[n].baza;

while r<>nil do begin

if r^.valoare > lim then begin

inc(i);

writeln(i,'#');

writeln(' date: ',r^.date);

writeln(' valoare:',r^.valoare);

end;

r:=r^.urm;

end;

end;

procedure by\_valoare();

var n:integer;

val:real;

dat:string;

good:boolean;

begin

writeln('Databaza List ID : ');

readln(n);

while good<>true do begin

b:=a[n].baza;

r:=b;

while r<>nil do begin

if r=b then begin

v:=r;

r:=r^.urm;

end else if r^.valoare < v^.valoare then begin

dat:=r^.date;

val:=r^.valoare;

r^.valoare:=v^.valoare;

r^.date:=v^.date;

v^.date:=dat;

v^.valoare:=val

end;

end;

r:=a[n].baza;

while r<>nil do begin

if r=b then begin

v:=r;

good:=true;

r:=r^.urm;

end else begin

if r^.valoare < v^.valoare then good:=false;

r:=r^.urm;

end;

end;

end;

writeln(good);

end;

procedure menu();

begin

writeln();

writeln('apasati enter pentru a continua');

readln();

writeln();

writeln('meniu');

writeln();

writeln('C – creeaza lista');

writeln('B - arata listele Databaza ');

writeln('D – arata lista specifica ');

writeln('K - leaga 2 Liste');

writeln('M – arata lista selectata');

writeln('R – aranjeaza listele dupa valoare');

writeln('S – descompune lista);

writeln('E - EXIT');

writeln();

readln(ans);

if ans = 'C' then create\_list() else

if ans = 'B' then datebaza\_display() else

if ans = 'D' then list\_display() else

if ans = 'S' then descompunere() else

if ans = 'K' then concat() else

if ans = 'M' then show()

else if ans = 'R' then by\_valoare();

end;

begin

while ans<>'E' do menu();

end.