Program HOOKJIVES;

{$E+}

{$N+}

uses crt;

const

nv = 2; { numero de variaveis }

type

vetor = array[1..nv] of real;

var

y : extended;

x : vetor;

erro, alfa, delta : real;

ch : char;

procedure pause(texto:string);

var

ch1,ch2 :char;

lin,col :byte;

begin

col:=wherex;

lin:=wherey;

gotoxy (35,25);

textattr:=white + red\*16 + blink;

write(texto);

{ som; }

ch1:=readkey;

if (ch1=#0) then

ch2:=readkey

else

ch2:=#0;

write(#13); {#13 = Enter}

textattr:=lightgray;

clreol;

gotoxy (col,lin);

end;

Function Q(x : vetor):extended;

begin

{ Q:= sqr(sqr(x[1]-2)) + sqr(x[1]-2\*x[2]);}

Q:=sqr(x[1]) + sqr(x[2]) + 1;

end;

Procedure Imprime2(k:word;x : vetor;Delta:real);

var

ii :byte;

begin

writeln;

if (wherey=25) then

clrscr;

write (K:3,' ');

write ('(');

for ii:=1 to nv-1 do

write(x[ii]:6:12,', ');

write (x[nv]:6:12,') ');

write (Q(x):6:8,' ');

write (Delta:6:8);

pause('Parei...');

end;

Procedure Leitura;

var

ii :byte;

begin

writeln(' PONTO INICIAL');

writeln;

for ii:=1 to nv do begin

writeln(' x',ii,' = ');

writeln;

end;

writeln(' Erro = ');

writeln;

writeln(' Alfa = Fator de aceleracao');

writeln;

writeln(' Delta = Passo');

for ii:=1 to nv do begin

gotoxy(10, 1+2\*ii);

readln(x[ii]);

end;

gotoxy(10, 1+2\*nv+2); readln(erro);

gotoxy(10, 1+2\*nv+4); readln(alfa);

repeat

gotoxy(10,1+2\*nv+6);

readln(delta);

if (delta<=erro) then

pause('Delta tem que ser maior que erro...');

until (delta>erro);

pause('Pressione alguma tecla...');

clrscr;

writeln(' PONTO INICIAL');

for ii:=1 to nv do

write ('X(',ii,') = ',x[ii]:6:8,' ');

writeln;

end;

Procedure Hooke\_Jeeves\_Discreto(var x : vetor);

const

db : array[1..2] of vetor =((1,0),(0,1));

{ base canonica }

var

ii,j,k : word;

Aux,y : vetor;

begin

k:=1;

writeln(' k x(k) Q(x) Delta');

repeat

y:=x;

for j:=1 to nv do

begin

for ii:=1 to nv do

Aux[ii] := y[ii] + Delta\*db[j][ii];

if (Q(Aux)<Q(y)) then

y:=Aux

else

begin

for ii:=1 to nv do

Aux[ii] := y[ii] - Delta\*db[j][ii];

if (Q(Aux)<Q(y)) then

y:=Aux;

end;

end;

if Q(y)<Q(x) then

begin

for ii:=1 to nv do

Aux[ii] := y[ii]+Alfa\*(y[ii]-x[ii]);

If Q(Aux)<Q(y) then

x := Aux

else

x := y;

end

else

if Delta>=Erro then

Delta:=Delta/2;

Imprime2(k,x,Delta);

k:=k+1;

until Delta<Erro;

end; { Hooke\_Jeeves\_Discreto }

{\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Programa Principal \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*}

begin

Clrscr;

Leitura;

writeln;

Hooke\_Jeeves\_Discreto(x);

pause('Fim!!!...');

end.