```pascal
// Corrigé de l'épreuve pratique juin 2009-07-17

unit Unit1;

interface

uses
  Windows,   Messages,   SysUtils,   Variants,   Classes,
Graphics, Controls, Forms,
  Dialogs, StdCtrls, Grids;

type
  TForm1 = class(TForm)
    StringGrid1: TStringGrid;
    btnInit: TButton;
    Edit1: TEdit;
    Edit2: TEdit;
    btnEditToGrid: TButton;
    ListBox1: TListBox;
    Label1: TLabel;
    btnAnalyze: TButton;
    procedure btnInitClick(Sender: TObject);
    procedure btnEditToGridClick(Sender: TObject);
    procedure btnAnalyzeClick(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;

var
  Form1: TForm1;

implementation

{$R *.dfm}


//b)***************************************************
function free_cells(sg:TstringGrid):integer;
var i,j,n : integer;
begin
n:=0;
for i:=1 to sg.ColCount-1 do
 for j:=1 to sg.RowCount-1 do
   if sg.cells[i,j]='' then n:=n+1;
free_cells:=n;
end;
```

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//c)***************************************************
procedure TForm1.btnInitClick(Sender: TObject);
var i,j:integer;
    c:char;
begin
 for i:=1 to 8 do stringgrid1.Cells[0,i]:=IntToStr(i);
 i:=1;
 for c:='A' to 'H' do
    begin
       stringgrid1.Cells[i,0]:=c;
       i:=i+1;
    end;
 for i:=1 to 8 do
   for j:=1 to 8 do
     stringgrid1.cells[i,j]:='';
 listbox1.clear;
 listbox1.Items.append('Mouvements:');
 label1.caption:=IntToStr(free_cells(stringgrid1))+'
cases libres';
 randomize;
end;

//d)***************************************************
procedure TForm1.btnEditToGridClick(Sender: TObject);
var n,i,j : integer;
     s: string;
begin
n:=StrToInt(edit1.Text);
if  n>free_cells(stringgrid1)  then  label1.caption:='pas
assez de place'
else
 begin
   s:=edit2.Text;
   while n>0 do
     begin
       i:=1+random(8);j:=1+random(8);
       if stringgrid1.cells[i,j]=''
       then
         begin
           stringgrid1.cells[i,j]:=s;

listbox1.Items.append(s+':'+stringgrid1.cells[i,0]+string
grid1.cells[0,j]);
           n:=n-1;
         end
     end;
     label1.caption:=IntToStr(free_cells(stringgrid1))+'
cases libres';
 end;
```

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end;

//e)********************************************************
procedure TForm1.btnAnalyzeClick(Sender: TObject);
var i,j,k,n_mots : integer;
    nouveau: boolean;
    mots : array[1..64] of string;
    freq : array[1..64] of integer;
begin
 n_mots:=0 ;
 for i:=1 to 8 do
   for j:=1 to 8 do
     begin
       nouveau:=true;
       k:=1;
       while (k<=n_mots) and nouveau do
         if mots[k]=stringgrid1.cells[j,i] then
           begin
             nouveau:=false;
             freq[k]:=freq[k]+1;
           end
         else k:=k+1;
       if k>n_mots then
         begin
           n_mots:=n_mots+1;
           mots[n_mots]:=stringgrid1.cells[j,i];
           freq[n_mots]:=1;
         end;
     end;
 listbox1.Clear;
 for i:=1 to n_mots do
   listbox1.Items.append(IntToStr(freq[i])+'fois
'''+mots[i]+'''');
 label1.caption:=IntToStr(n_mots)+' contenus différents';
 end;

end.
```