

```
// Examen de fin d'études secondaires 2011, section B
```

```
unit Unit1; // Informatique - Épreuve pratique - Corrigé modèle
```

```
interface
```

```
uses
```

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

```
type
```

```
TForm1 = class(TForm)  
    sg_nb: TStringGrid;  
    lbl_prim: TLabel;  
    lb_prim: TListBox;  
    lbl_ncv: TLabel;  
    lbl_nombres: TLabel;  
    btn_rempl: TButton;  
    btn_supp: TButton;  
    btn_prim: TButton;  
    btn_tri: TButton;  
    btn_quit: TButton;  
    procedure btn_remplClick(Sender: TObject);  
    procedure btn_suppClick(Sender: TObject);  
    procedure btn_quitClick(Sender: TObject);  
    procedure btn_primClick(Sender: TObject);  
    procedure btn_triClick(Sender: TObject);  
private  
    { Private declarations }  
public  
    { Public declarations }  
end;
```

```
var
```

```
Form1: TForm1;
```

```
implementation
```

```
{ $R *.dfm }
```

```
function premier(n:integer):boolean;
```

```
var i:integer;
```

```
    prim:boolean;
```

```
begin
```

```
    if n<2
```

```
    then premier:=false
```

```
    else if n=2
```

```
        then premier:=true
```

```
        else if n mod 2=0
```

```
            then premier:=false
```

```
            else begin
```

```
                i:=3;
```

```
                prim:=true;
```

```
                while (i*i<=n) and prim do
```

```
                    if n mod i=0
```

```
                        then prim:=false
```

```
                        else i:=i+2;
```

```
                    premier:=prim
```

```
            end
```

```
end;
```

```

procedure TForm1.btn_remplClick(Sender: TObject);
var i,j:integer;
begin
    randomize;
    for i:=0 to sg_nb.ColCount-1 do
        for j:=0 to sg_nb.RowCount-1 do
            sg_nb.Cells[i,j]:=inttostr(random(99)+1);
end;

procedure TForm1.btn_suppClick(Sender: TObject);
var c,i,j,m,n:integer;
begin
    for i:=0 to sg_nb.ColCount-1 do
        for j:=0 to sg_nb.RowCount-1 do
            for m:=0 to sg_nb.ColCount-1 do
                for n:=0 to sg_nb.RowCount-1 do
                    if(sg_nb.Cells[m,n]=sg_nb.Cells[i,j])and not((m=i)and(n=j))
                        then sg_nb.Cells[m,n]:='';
    c:=0;
    for i:=0 to sg_nb.ColCount-1 do
        for j:=0 to sg_nb.RowCount-1 do
            if sg_nb.Cells[i,j]<>' ' then c:=c+1;
    lbl_nombres.Caption:=inttostr(c);
end;

procedure TForm1.btn_primClick(Sender: TObject);
var i,j:integer;
begin
    lb_prim.Items.Clear;
    for i:=0 to sg_nb.ColCount-1 do
        for j:=0 to sg_nb.RowCount-1 do
            if (sg_nb.Cells[i,j]<>' ')and(premier(strtoint(sg_nb.Cells[i,j])))
                then lb_prim.Items.Append(sg_nb.Cells[i,j]);
end;

procedure TForm1.btn_triClick(Sender: TObject);
var i,j,cand:integer;
begin
    for i:=1 to lb_prim.Items.Count-1 do begin
        cand:=strtoint(lb_prim.Items[i]);
        j:=i;
        while(j>0)and(strtoint(lb_prim.Items[j-1])>cand)do begin
            lb_prim.Items[j]:=lb_prim.Items[j-1];
            j:=j-1
        end;
        if j<i then lb_prim.Items[j]:=inttostr(cand)
    end
end;

procedure TForm1.btn_quitClick(Sender: TObject);
begin
    Application.Terminate
end;

end.

```