NATIONAL SENIOR CERTIFICATE
NASIONALE SENIOR SERTIFIKAAT

GRADE/GRAAD 11

NOVEMBER 2013

INFORMATION TECHNOLOGY P1
INLIGTINGSTEGNOLOGIE V1
MEMORANDUM

MARKS/PUNTE: 150

QUESTION/VRAAG 1 – 23 marks/punte

```
unit Question1_u;

interface

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

type
  TForm1 = class(TForm)
    Button1: TButton;
    Edit1: TEdit;
    Edit2: TEdit;
    Label1: TLabel;
    Label2: TLabel;
    Memo1: TMemo;
    RadioGroup1: TRadioGroup;
    CheckBox1: TCheckBox;
    procedure Button1Click(Sender: TObject);
  private

  public
    { Public declarations }
  end;

var
  Form1: TForm1;

implementation

{$R *.dfm}
```

> Nested if-Statement can be used instead of the Case Statement:
> Award one mark for making use of the radiogroup1.itemindex and then one mark for each correct option.
>
> (6)

```
procedure TForm1.Button1Click(Sender: TObject);
var
  sname, stime, susername, ssurname, spassword : string;✓
begin
  randomize; ✓
  sname := edit1.text; ✓
  ssurname := edit2.text; ✓
  susername := ssurname✓ + sname[1]; ✓
  spassword := inttostr(random(1000000)+1); ✓
  case radiogroup1.itemindex of✓
  0: stime := '15'; ✓
  1: stime := '15'; ✓
  2: stime := '20'; ✓
  3: stime := '25'; ✓
  4: stime := '30'; ✓
  end;
  memo1.clear;
  memo1.lines.Add('Welcome '+sname +' ' +ssurname); ✓
  memo1.lines.add(''); ✓
  memo1.Lines.add('Your once-off username is: '+susername); ✓
  memo1.lines.add('Your once-off password is: '+spassword); ✓
  memo1.lines.add(''); ✓
  memo1.lines.add('You are allowed to work for '+stime+' minutes.'); ✓
  if checkbox1.checked = true then✓
    memo1.lines.add('There will be no printing costs') ✓
  else✓
    memo1.lines.add('Printing costs will be R0.40 per page'); ✓
end;

end.
```

QUESTION/VRAAG 2 – SAMPLE SOLUTION/VOORBEELDOPLOSSING (34 marks/punte)

```
unit Question2memo_u;

interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, Grids, DBGrids, DB, ADODB, ComCtrls, StdCtrls, Buttons;

type
  TForm1 = class(TForm)
    …
  end;

var
  Form1: TForm1;

implementation

{$R *.dfm}

procedure TForm1.Button1Click(Sender: TObject);
var
  icount : integer;
begin
  icount := 0; ✓
  adolibrary.open; ✓
  adolibrary.first; ✓
  while not adolibrary.eof do✓
    begin
      icount := icount + 1; ✓
      adolibrary.next; ✓
    end;
  label1.caption := inttostr(icount) + ' books in the library'; ✓
end;

procedure TForm1.Button2Click(Sender: TObject);
var
  icount,iafrikaans,iaverage : integer;

begin
  icount := 0; ✓
  adolibrary.Open; ✓
  adolibrary.first; ✓
  while not adolibrary.Eof do✓
```

```
    begin

      icount := icount + 1; ✓

      if adolibrary['Language'] = 2 then✓
        inc(iafrikaans); ✓
      adolibrary.Next; ✓
    end;
  iaverage := round(iafrikaans/icount*100); ✓
  label3.caption := inttostr(iaverage)+'% Afr Books'; ✓
end;

procedure TForm1.Button3Click(Sender: TObject);
var
  icount : integer;
  sauthor : string;
begin
  icount := 0; ✓
  sauthor := edit1.text; ✓
  adolibrary.open; ✓
  adolibrary.First; ✓
  while not adolibrary.Eof do✓
    begin
      if adolibrary['AuthorID'] = sauthor then✓
        icount := icount + 1; ✓
      adolibrary.next; ✓
    end;
  label4.caption := 'The author wrote '+inttostr(icount)+' books'; ✓
end;

procedure TForm1.Button4Click(Sender: TObject);
var
  icount : integer;
begin
  icount := 0; ✓
  adolibrary.Open; ✓
  adolibrary.First; ✓
  while not adolibrary.Eof do✓
    begin
      if adolibrary['YearPublished'] > 2000 then✓
        inc(icount); ✓
      adolibrary.Next; ✓
    end;
  label5.caption := inttostr(icount)+' published after 2000'; ✓
end;


end.
```

QUESTION/VRAAG 3 – SAMPLE SOLUTION/VOORBEELDOPLOSSING (77 marks/punte)

```pascal
unit Question3_u;

interface

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

type
  TForm1 = class(TForm)
    MainMenu1: TMainMenu;
    CreateBookCode1: TMenuItem;
    SortaccAuthor1: TMenuItem;
    GenerateOnceoffPassword1: TMenuItem;
    Fines1: TMenuItem;
    RichEdit1: TRichEdit;
    Search1: TMenuItem;
    procedure FormCreate(Sender: TObject);
    procedure CreateBookCode1Click(Sender: TObject);
    procedure SortaccAuthor1Click(Sender: TObject);
    procedure GenerateOnceoffPassword1Click(Sender: TObject);
    procedure Fines1Click(Sender: TObject);
    procedure Search1Click(Sender: TObject);
  private
    arrbooks : array[1..150] of string;
    arrtitle : array[1..150] of string;
    arrcode : array[1..150] of string;
    arrsurname : array[1..150] of string;
    icount,icounter : integer;
  public

    { Public declarations }
  end;

var
  Form1: TForm1;

implementation

{$R *.dfm}
```

```pascal
procedure TForm1.FormCreate(Sender: TObject);
var
  myfile : textfile;
begin


icount := 0;
  icounter := 0;
  randomize;
  Assignfile(myfile,'books.txt');
  reset(myfile);
  while not eof(myfile) do
    begin
      inc(icount);
      readln(myfile,arrbooks[icount]);
    end;
  richedit1.Paragraph.TabCount := 2;
  richedit1.Paragraph.tab[0] := 150;
  richedit1.Paragraph.tab[1] := 200;
end;

procedure TForm1.CreateBookCode1Click(Sender: TObject);
var
  k,ipos : integer; ✓
begin
  richedit1.Clear;
  richedit1.lines.add('Book Title'+#9+'Book Code'); ✓
  for k := 1 to icount do✓
    begin
      ipos := pos(';',arrBooks[k]); ✓
      arrtitle[k] ✓ := copy(arrbooks[k],1,ipos-1); ✓
      delete(arrbooks[k],1,ipos); ✓
      ipos := pos(',',arrbooks[k]);
      arrsurname[k] ✓:= copy(arrbooks[k],1,ipos-1); ✓
      arrcode[k] ✓:= copy(arrsurname[k],1,3) +inttostr(k); ✓
      richedit1.Lines.add(arrtitle[k] + #9 + arrcode[k]); ✓
    end;
end;

procedure TForm1.SortaccAuthor1Click(Sender: TObject);
var
  k, l : integer;
  ssurname, stitle : string; ✓
begin
  for k := 1 to icount - 1 do✓
    begin
      for l := k + 1 to icount do✓
        begin
          if arrsurname[k] > arrsurname[l] then✓
```

```
      begin
        ssurname := arrsurname[k]; ✓
        arrsurname[k] := arrsurname[l]; ✓
        arrsurname[l] := ssurname; ✓


  stitle := arrtitle[k]; ✓

   arrtitle[k] := arrtitle[l]; ✓
          arrtitle[l] := stitle; ✓
          end;

      end;
    end;
  richedit1.clear;
      for k := 1 to icount do✓
      richedit1.lines.add(arrsurname[k] ✓ +#9+ arrtitle[k]); ✓
end;

procedure TForm1.GenerateOnceoffPassword1Click(Sender: TObject);
var
  suser, ssurname, sname, spassword : string; ✓
  arrpassword : array[1..150] of string; ✓
begin
   inc(icounter); ✓
  suser := inputbox('Enter name and surname','lower case ONLY',''); ✓
  ssurname := copy(suser,pos(' ',suser)+1, 3); ✓✓
  sname := copy(suser, 1, pos(' ',suser)-1); ✓
  spassword := ssurname[1] ✓+ uppercase(ssurname[2]) ✓ + ssurname[3] ✓ +
inttostr(random(10)); ✓
  spassword := spassword + uppercase(sname[1]) ✓ + sname[2] ✓ + inttostr(random(100)) ✓
+ '#'; ✓
  showmessage(suser + '''s password is '+ spassword); ✓
  arrpassword[icounter] ✓ := suser + ': ' + spassword; ✓
end;


procedure TForm1.Fines1Click(Sender: TObject);
var
  stakeout,slate,sdate : string;
  idiff,idayout,idayin,imonthin,imonthout : integer; ✓
begin
  richedit1.clear;
  stakeout := inputbox('Enter date book was taken out','MM/DD',''); ✓
  sdate := (copy(datetostr(Now),1,5)); ✓
  idayout := strtoint(copy(stakeout,4,2)); ✓
  imonthin := strtoint(copy(sdate,4,2)); ✓
  idayin := strtoint(copy(sdate,4,2)); ✓
  imonthout := strtoint(copy(stakeout,1,2)); ✓
  if imonthin = imonthout then✓
```

```
    idiff := idayin - idayout✓
  else
    idiff := ((31 - idayout) + idayin); ✓
  if idiff <=14 then✓
    begin

      richedit1.lines.add('Date Out: '+stakeout); ✓
      richedit1.lines.add('Date In: '+sdate); ✓
      richedit1.lines.add('No Fine'); ✓
    end
  else
    if (idiff >14) and (idiff <= 21) then✓

      begin
      richedit1.lines.add('Date Out: '+stakeout); ✓
      richedit1.lines.add('Date In: '+sdate); ✓
      richedit1.Lines.add('R '+floattostrf((idiff-14)*1.50✓,fffixed,6,2)); ✓
      end
    else✓
      begin
      richedit1.lines.add('Date Out: '+stakeout); ✓
      richedit1.lines.add('Date In: '+sdate); ✓
      richedit1.Lines.add('R '+floattostrf((idiff-21)*2.50✓,fffixed,6,2)); ✓
end;
end;


procedure TForm1.Search1Click(Sender: TObject);
var
  squery : string;
  bfound : boolean;      ✓
  k : integer;
begin
  bfound := false; ✓
  squery := inputbox('Enter Book Title','',''); ✓
  for k := 1 to icount do✓
    begin
      if arrtitle[k] = squery then✓
        bfound := true✓
    end;
    if bfound = true then✓
      ShowMessage('Book found!') ✓
    else✓
      ShowMessage('Sorry, the book is not in the library.'); ✓
end;


end.
```

QUESTION/VRAAG 4 – SAMPLE SOLUTION/VOORBEELDOPLOSSING (16 marks/punte)

```
unit Question4memo_u;

interface

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

type
  TForm1 = class(TForm)
    Button1: TButton;
    RichEdit1: TRichEdit;
    RichEdit2: TRichEdit;
    BitBtn1: TBitBtn;
    Edit1: TEdit;
    Label1: TLabel;
    Label2: TLabel;
    procedure Button1Click(Sender: TObject);
  private
  public
    { Public declarations }
  end;

var
  Form1: TForm1;

implementation

{$R *.dfm}

procedure TForm1.Button1Click(Sender: TObject);
var
  k, itotal, irem, icheck  : integer;
  sISBN : string; ✓
begin
  sISBN := edit1.text; ✓
  itotal := strtoint(sISBN[1])*1+strtoint(sISBN[2])*3+strtoint(sISBN[3])*1+strtoint(sISBN[4])*3+
```

```
          +strtoint(sISBN[5])*1+strtoint(sISBN[6])*3+strtoint(sISBN[7])*1+strtoint(sISBN[8])*3+
✓✓✓
+strtoint(sISBN[9])*1+strtoint(sISBN[10])*3+strtoint(sISBN[11])*1+strtoint(sISBN[12])*3;
  irem := itotal mod 10; ✓
  icheck := 10 - irem; ✓
  if icheck = 10 then✓
    icheck := 0; ✓
  if icheck = strtoint(sISBN[13]) then✓
    richedit1.Lines.add(sISBN) ✓

  else✓
    begin
      richedit2.Lines.add(sISBN); ✓
      Delete(sISBN,13,1); ✓
      Insert(inttostr(icheck),sISBN,13); ✓
      richedit2.lines.add('Correct ISBN: '+sISBN); ✓
    end;
end;

end.
```

TOTAL/TOTAAL: 150