



Province of the
EASTERN CAPE
EDUCATION

**NASIONALE
SENIOR SERTIFIKAAT**

GRAAD 11

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**INLIGTINGSTEGNOLOGIE V1
NASIENRIGLYN**

PUNTE: 150

Hierdie nasienriglyn bestaan uit 13 bladsye.

NAAM VAN LEERDER:

TOTAAL VRAAG 1	TOTAAL VRAAG 2	TOTAAL VRAAG 3	TOTAAL VRAAG 4	TOTAAL
/38	/38	/38	/36	/150

VRAAG 1		MAKS. PUNTE	PUNTE BEHAAL
1.1	<p>BUTTON: [Q1.1 – Start Shopping]</p> <p>Get the surname from the edit box ✓ Generate a random number ✓ in correct range from 1 to 1034 inclusive ✓</p> <p>Create the password with the first 3 characters ✓ of the surname and the random number ✓</p> <p>Display the password ✓ in a showmessage component</p>	6	
1.2	<p>BUTTON: [Q1.2 – Add to Cart]</p> <p>Get value from sedQty ✓</p> <p>Use case or nested if statements ✓ with rpgChoice itemindex ✓</p> <p>Calculate amount to pay unit price <u>constant</u> ✓ multiplied by quantity from sedQty ✓</p> <p>Calculate the total amount due: add the amount to pay ✓ to <u>rgrandtotal (global variable)</u> ✓</p> <p>Compile a string:</p> <ul style="list-style-type: none"> • with the product name ✓ • amount to pay per item ✓ formatted to currency ✓ • using tabstop ✓ <p>For all three products ✓</p> <p>Display the string in the richedit ✓</p>	13	

<p>1.3</p>	<p>BUTTON: [Q1.3 – Verify Card]</p> <p>Get the card number from the editbox ✓</p> <p>Check for digits 0 to 9:</p> <p><u>Method 1: Remove ‘-’ from string:</u> Delete 5th character ✓ Delete 9th character ✓ Delete 13th character ✓ In the correct order ✓ Set Boolean variable to true ✓ Loop ✓ from 1 to 16 ✓ if character ✓ is not a digit from 0 to 9 ✓ then set Boolean variable to false ✓</p> <p>if Boolean variable = true then ✓ set font style of btnQ1_4 to bold ✓ else ✓ show a message that the card is invalid ✓</p> <p style="text-align: center;">OR</p> <p><u>Method 2: Build a new string:</u> (local string variables are automatically initialised to empty strings) Use a loop for the length of the card number ✓ if character ✓ <> ‘-’ ✓ then add that character to the new string ✓</p> <p>Check each character of the new string: Set Boolean variable to true ✓ Loop ✓ from 1 to 16 or length of the new string ✓ if character ✓ is not a digit from 0 to 9 then ✓ set Boolean variable to false ✓</p> <p>If Boolean flag is true, ✓ then set font style of btnQ1_4 to bold ✓ else ✓ show a message that the card is invalid ✓</p> <p>(Allow hard coding to check each character: 1 to 4, 6 to 9, 11 to 14 and 16 to 19)</p>	<p>15</p>	
<p>1.4</p>	<p>BUTTON: [Q1.4 – Proceed to Checkout]</p> <p>Display Total (global variable) ✓ in the richedit ✓ Formatted to currency, 2 decimal places ✓ With label ✓</p>	<p>4</p>	
		<p>38</p>	

VRAAG 2		MAKS. PUNTE	PUNTE BEHAAL
2.1	BUTTON: [Q2.1 – Quantities over 5] tblorder.First ✓ Loop until the end of table ✓ if tblorder['Quantity'] ✓ > 5 ✓ then display product in richedit ✓ tblOrder.next ✓	6	
2.2	BUTTON: [Q2.2 – Change one product] tblorder.First ✓ Loop until the end of table ✓ if tblorder['Product'] ✓ = 'none' then ✓ tblorder.Edit ✓ tblorder['Product'] ✓ := 'Lenova Yoga 3' ✓ tblorder.Post ✓ tblorder.Next ✓	9	
2.3	BUTTON: [Q2.3 – December orders] Set total variable to 0 ✓ tblorder.First ✓ Loop until the end of table ✓ if tblorder['OrderDate'] ✓ >= '2018/12/01' ✓ (<i>OR copy the month ✓ from OrderDate ✓ and check if month = 12 ✓</i>) then total := total ✓ + tblorder['Quantity'] ✓ tblorder.Next; ✓ reddisplay.Lines.Add(inttostr(isum) ✓ + ' products ordered in December')	10	
2.4	BUTTON: [Q2.4 – Delete customer] Get customer ID from the combobox ✓ Set counter to 0 ✓ tblorder.First ✓ Loop to end of table ✓ If CustomerID field = chosen customer ID ✓ and Delivery field = 'Normal' ✓ then <ul style="list-style-type: none"> • Display the OrderID in the richedit ✓ • Add 1 to counter ✓ • Delete ✓ Else ✓ tblorder.next ✓ (end of loop) If counter = 0 then ✓ Display "No records deleted" in the richedit ✓	13	
		38	

VRAAG 3		MAKS. PUNTE	PUNTE BEHAAL
3.1	<p>SortandDisplay Procedure heading ✓ Outer loop from 1 to 9 ✓ Inner loop from outer loop counter + 1 to 10 ✓ If arritem[outerloop counter] > arritem[innerloop counter] then ✓ set temp string to arritem[outerloop] ✓ set arritem[outerloop] = arritem[innerloop] ✓ set arritem[innerloop] to temp string ✓ do the same for arrqty using a temp integer: set temp integer to arrqty[outerloop] ✓ set arrqty[outerloop] = arrqty[innerloop] ✓ set arrqty[innerloop] to temp integer ✓ loop from 1 to 10 ✓ display in richedit, arritem index ✓ and arrqty index converted to string ✓ in columns ✓</p>	15	
3.2	<p>OnCreate event handler of frmQuestion4 Loop from 1 to 10 ✓ Get string from arritem, store in a string variable ✓ Copy item name from string variable back to arritem ✓ Remove item name from the string variable ✓ Add the remaining quantity in string variable to arrqty ✓ Converted to integer ✓ Added to the number in arrqty ✓ Call procedure SortandDisplay (after loop) ✓</p>	8	
3.3	<p>FUNCTION GetNewQuantity(inum, ipercent : integer) : integer Function with 2 integer parameters ✓✓ Returning an integer data type ✓ result := inum - trunc (inum * ipercent / 100) OR result := inum - (inum * ipercent) div 100</p>	8	
3.4	<p>BUTTON: [Q3.4 – Stock Decrease] Get interest from inputbox statement ✓ loop from 1 to 10 ✓ set arrqty index ✓ equal to the function GetNewQuantity ✓ using arrqty index ✓ and interest value as parameters ✓ Call procedure SortandDisplay ✓</p>	7	
		38	

VRAAG 4		MAKS. PUNTE	PUNTE BEHAAL
4	<p>BUTTON: [Q4 – Analyse sales]</p> <p>If 'sales.txt' does not exist ✓ then show a message that file is not found ✓ and exit ✓</p> <p>Get input from combobox ✓ Set total variable to 0 ✓</p> <p>Assignfile statement ✓ Reset text file ✓</p> <p>While not at the end of the text file ✓</p> <ul style="list-style-type: none"> • Read a line ✓ • If the line contains the combobox entry ✓ use pos ✓ then <ul style="list-style-type: none"> ○ Copy customer name ✓ use pos and delete ✓ ○ Copy item name ✓ use pos and delete ✓ ○ Copy the quantity convert to integer ✓ use pos and delete ✓ ○ Get the unit price ✓ convert to integer or real ✓ ○ Calculate the <u>cost</u> = unit price x quantity ✓ ○ Add cost to the running total ✓ ○ Display in richedit: customer name ✓ and <u>cost</u> formatted to currency and two decimal places ✓ using tab spacing ✓ <p>closefile must be used only if the same textfile variable is used to do the following, otherwise a different textfile variable must be used ✓</p> <p>assignfile statement ✓ using combobox entry as file name with .txt added ✓</p> <p>If text file exists (using combobox entry and .txt added) ✓ then</p> <p style="padding-left: 40px;">append statement ✓</p> <p style="padding-left: 40px;">Else ✓</p> <p style="padding-left: 40px;">rewrite statement ✓</p> <p>Write a line to text file using writeln ✓ with today's date formatted to string ✓ and the <u>total</u> formatted to currency and two decimal places ✓ use # between the date and total ✓</p> <p>closefile statement ✓</p>	36	
		36	

VOORBEELD OPLOSSINGS

VRAAG 1

//38 Marks//

implementation

//////////Question 1.1 6 marks//////////

procedure TQuestion1.btnQ1_1Click(Sender: TObject);

var sname, suser, spass, snepass : string;

inum, k : integer;

begin

 sname := edtname.Text;

 inum := randomrange(1,1035);

 spass := copy(sname,1,3) + inttostr(inum);

 showmessage('Your password is ' + spass);

end;

//////////Question 1.2 13 marks//////////

procedure TQuestion1.btnQ1_2Click(Sender: TObject);

// provided code do not change/////

const pencil = 12;

 pen = 25;

 calculator = 154;

var icode, inum, iqty : integer;

 sline : string;

 rtopay : real;

//////////

begin

 iqty := sedqty.value;

 sline := rgpchoice.items[rgpchoice.itemindex];

 case rgpchoice.itemindex of

 0 : begin

 rtopay := iqty * pencil;

 rgrandtotal := rgrandtotal + rtopay;

 sline := sline + #9 + floattostf(rtopay,ffcurrency,8,2);

 end;

 1 : begin

 rtopay := iqty * pen;

 rgrandtotal := rgrandtotal + rtopay;

 sline := sline + #9 + floattostf(rtopay,ffcurrency,8,2);

 end;

 2 : begin

 rtopay := iqty * calculator;

 rgrandtotal := rgrandtotal + rtopay;

 sline := sline + #9 + floattostf(rtopay,ffcurrency,8,2);

 end;

 end;

 redinvoice.Lines.Add(sline);

end;

```

//////////Question 1.3 15 marks//////////
procedure TQuestion1.btnQ1_3Click(Sender: TObject);
var scard : string;
    stemp : string;
    k : integer;
    bdigits : boolean;
begin
scard := edtcad.Text;
  for k := 1 to length(scard) do
    begin
      if scard[k] <> '-' then
        stemp := stemp + scard[k]
      end;
    bdigits := true;
  for k := 1 to length(stemp) do
    begin
      if not(stemp[k] in ['0'..'9']) then
        bdigits := false
      end;
    if bdigits = true then
      btnQ1_4.font.style := [fsbold]
    else
      showmessage('Your bank card number is invalid');

```

```

// alternative solution:
// scard := edtcad.text;
// delete(scard,5,1);
// delete(scard,9,1);
// delete(scard,13,1);
// bdigits := true
// for k := 1 to 16 do
// begin
// if not (scard[k] in ['0'..'9']) then
// bdigits := false;
// end
// if bvalid then
// btnQ1_4.font.style := [fsbold];
// else
// showmessage('The card number is invalid');
end;

```

```

//////////Question 1.4 4 marks//////////
procedure TQuestion1.btnQ1_4Click(Sender: TObject);
begin
  reinvoice.Lines.Add("");
  reinvoice.Lines.Add('Total due = ' + floattostrf(rgrandtotal,ffcurrency,8,2));
end;

```


VRAAG 2

// 38 Punte //

////Question 2.1 6 Marks////////////////////////////////////

```

procedure TfrmQuestion2.btnQ2_1Click(Sender: TObject);
begin
reddisplay.Clear;
tblorder.First;
while not tblorder.eof do
begin
if tblorder['Quantity'] > 5 then
reddisplay.Lines.Add(tblorder['Product']);
tblorder.Next;
end;
end;

```

////Question 2.2 9 Marks////////////////////////////////////

```

procedure TfrmQuestion2.btnQ2_2Click(Sender: TObject);

begin
tblorder.First;
while not tblorder.eof do
begin
if tblorder['Product'] = 'none' then
begin
tblorder.Edit;
tblorder['Product'] := 'Lenova Yoga 3';
tblorder.Post;
end;
tblorder.Next;
end;
end;

```

////Question 2.3 10 Marks////////////////////////////////////

```

procedure TfrmQuestion2.btnQ2_3Click(Sender: TObject);
var isum: integer;
begin
isum := 0;
tblorder.First;
while not tblorder.eof do
begin
if tblorder['OrderDate'] >= '2018/12/01' then
begin
isum := isum + tblorder['Quantity'];
end;
tblorder.Next;
end;
reddisplay.Clear;
reddisplay.Lines.Add(inttostr(isum) + ' products ordered in December')
end;

```

////Question 2.4 13 Marks////////////////////////////////////

```
procedure TfrmQuestion2.btnQ2_4Click(Sender: TObject);
var scust : string;
ino : integer;
begin
ino := 0;
scust := cmbcustomer.Text;
reddisplay.Clear;
tblorder.First;
while not tblorder.eof do
begin
if (tblorder['CustomerID'] = scust) and (tblorder['Delivery'] = 'Normal') then
begin
reddisplay.Lines.Add(tblorder['OrderID']);
inc(ino);
tblorder.Delete;
end
else
tblorder.Next;
end;

if ino = 0 then
reddisplay.Lines.Add('No orders were deleted');

end;
```

VRAAG 3

//// 38 Marks ////

////Question 3.1 15 marks////////////////////////////////////

```

procedure TfrmQuestion3.sortanddisplay;
var k, l, itemp : integer;
stemp : string;
begin
for k := 1 to 9 do
  for l := k + 1 to 10 do
    begin
      if arritem[k] > arritem[l] then
        begin
          stemp := arritem[k];
          arritem[k] := arritem[l];
          arritem[l] := stemp;

          itemp := arrqty[k];
          arrqty[k] := arrqty[l];
          arrqty[l] := itemp;
        end;
      end;
    end;
  redoutput.Clear;
for k := 1 to 10 do
  redoutput.Lines.Add(arritem[k] + #9+ inttostr(arrqty[k]));
end;

```

///Question 3.2 8 marks////////////////////////////////////

```

procedure TfrmQuestion3.FormCreate(Sender: TObject);
var k : integer;
sline : string;
begin
///Provided code Do not delete////////////////////////////////////
redoutput.Paragraph.TabCount := 1;
redoutput.Paragraph.tab[0] := 100;
/// Question 3.2 add code below///
for k := 1 to 10 do
  begin
    sline := arritem[k];
    arritem[k] := copy(sline,1,pos(' ',sline)-1);
    delete(sline,1,pos(' ',sline));
    arrqty[k] := arrqty[k] + strtoint(sline);
  end;
  sortanddisplay;
end;

```

// Question 3.3 8 marks////////////////////////////////////

```

function TfrmQuestion3.getnewquantity(inum, iperc: integer): integer;
//var idiv : integer;
begin
result := inum - trunc(inum *iperc/100);
// or
//idiv := inum *iperc div 100
//result := inum - idiv;end;

```

```
///Question 3.4 7 Marks////////////////////////////////////  
procedure TfrmQuestion3.btnQ3_4Click(Sender: TObject);  
var k, inum : integer;  
begin  
inum := strtoint(inputbox('Enter the percentage decrease', ','));  
for k := 1 to 10 do  
begin  
arrqty[k] := getnewquantity(arrqty[k],inum);  
end;  
sortanddisplay;  
end;
```

VRAAG 4

/////////Vraag 4 36 punte/////////

```

procedure TfrmQuestion4.btnQ4Click(Sender: TObject);
var tfile : textfile;
    soneline, sname, sitem , sinput: string;
    iqty : integer;
    rprice, rtot, rdue : real;
begin
if not fileexists('sales.txt') then
    begin
        showmessage('File does not exist');
        exit;
    end;
sinput := cmbitem.text;
assignfile(tfile,'sales.txt');
reset(tfile);
rtot := 0;
while not eof(tfile) do
    begin
        readln(tfile,soneline);
        if pos(sinput,soneline) > 0 then
            begin
                sname := copy(soneline,1,pos(';',soneline) - 1);
                delete(soneline,1,pos(';',soneline));
                sitem := copy(soneline,1,pos(';',soneline) - 1);
                delete(soneline,1,pos(';',soneline));
                iqty := strtoint(copy(soneline,1,pos(';',soneline) - 1));
                delete(soneline,1,pos(';',soneline));
                rprice:= strtofloat(soneline);
                rdue := rprice * iqty;
                rtot := rtot + rdue;
                redisplay.Lines.Add(sname + #9 + floattostrf(rdue,ffcurrency,8,2));
            end;
        end;
closefile(tfile);
assignfile(tfile, cmbitem.text + '.txt');
if not fileexists(cmbitem.text + '.txt') then
    begin
        rewrite(tfile);
    end
else
    begin
        append(tfile);
    end;

writeln(tfile,datetostr(date) + '#' + floattostrf(rtot, ffcurrency,8,2));
closefile(tfile);
end;

```