NATIONAL CERTIFICATE (VOCATIONAL)

COMPUTER PROGRAMMING
(Second Paper) Practical
NQF LEVEL 4

SUPPLEMENTARY EXAMINATION 2011

(10041024)

25 March (Y-Paper)
13:00 – 17:00

This question paper consists of 10 pages.

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TIME:  4 HOURS
MARKS:  100
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INSTRUCTIONS AND INFORMATION

1.   Answer ALL the questions.

2.   Read ALL the questions carefully.

3.   Number the answers according to the numbering system used in this question paper.

4.   Write neatly and legibly.

INSTRUCTIONS TO STUDENTS AND LECTURERS

1.   Students must be seated in the computer laboratory 30 minutes before the start of the examination to ensure that all computers have the appropriate programs.

2.   These questions will be done on the computer by making use of MS Office 2003 and VB.NET 2005 or VB.NET Express or VB.NET 2008.

3.   **Students must make sure that they print their work immediately after completing a question. Ensure that your examination number appears on each print out. NO QUESTIONS WITHOUT A PRINTED EXAMINATION NUMBER WILL BE MARKED.**

4.   In the event of a power failure or a computer or printer breakdown, the invigilator will make the necessary arrangements for students to continue and the actual time lost will be given to them once they resume working.

5.   All work on the computer should be saved at regular intervals to prevent loss of work in the event of a power failure. NO additional time may be allowed for such lost work.

6.   **No student** may print his/her work for another student, or make a memory stick available to another or access another students' work on the network. **Any attempt to access any information from or transfer information to another student in whatever manner is a contravention of the examination rules and regulations and will be viewed in an extremely serious light.**

7.   All printouts or screen prints done during the session MUST be handed in.

8.   Make sure that your EXAMINATION NUMBER appears on all pages.

9.   Students may **NOT** copy the Source Code of VB.NET to MSWord and then print it from the Word Processor.

10.   Steps to make a SCREEN DUMB:

     i.   Run the solution.
     ii.   Hold the ALT key and press PRINT SCREEN (This will copy the active screen).
     iii.   Open the MS Word program in Windows and PASTE the SCREEN.
     iv.   Add your EXAMINATION NUMBER to the top right-hand side of your screen.
     v.   Print from here.

11.   You are allowed to make use of the Help files on VB.NET.

12.   Candidates may use the following programs to create a Web Page:
      –   NETBEANS
      –   BLUE VODA
      –   DREAMWEAVER

QUESTION 1

A student at your college wishes to attend the next football world cup. He needs to get all of his affairs in order so that he can be ready for it.

To attend the world cup he must have a passport and at least R10 000.00 pocket money. Because he is underage he must be accompanied by an adult travelling partner. He wants to get sponsors from the local business community and his family. The world cup lasts for a whole month and he needs permission from the college principal for not attending classes.

Open the folder **C:\CP LEVEL 4 SUPPLEMENTARY 2011 PRACTICAL\ GRAPHICS** on the hard disk and make use of the graphics in the graphic folder to design the storyboard. Your design should not be more than 5 slides.

1.1   Each slide should have a heading/explanation as well as an appropriate graphic.   (10)

1.2   Insert your examination number as a footer on each slide.
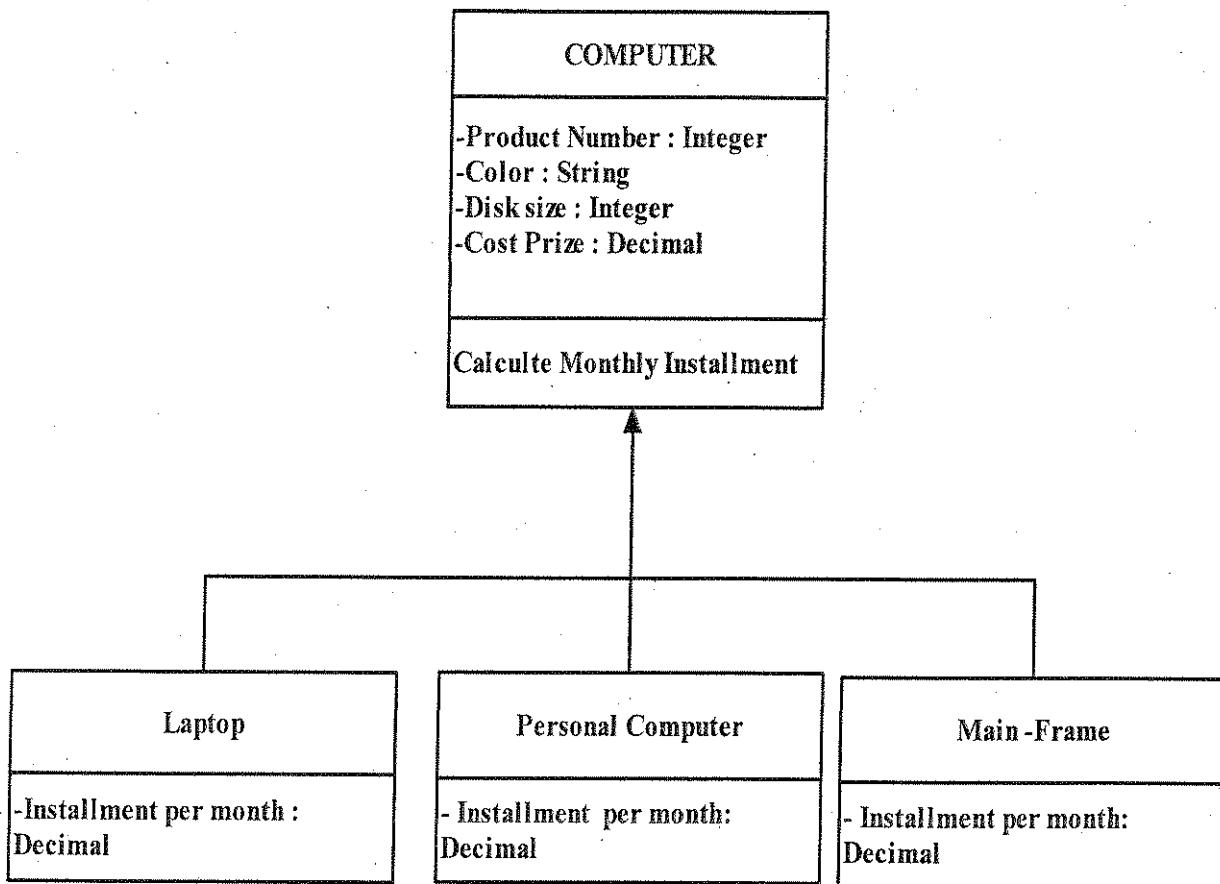
        HINT: View/Header and Footer/Footer/Apply to all.   (1)

1.3   Save the storyboard as STORY1 and print the slides as handouts, 6 per page, portrait.

        HINT: File/Print/Print what: Handouts/Slides per page = 6, Portrait.   (1)
                                                                                 [12]

QUESTION 2: VB. NET: OOP

Develop a program that will implement the concept of inheritance using the classes given below:

```
┌─────────────────────────────────────┐
│             COMPUTER                 │
├─────────────────────────────────────┤
│ -Product Number : Integer            │
│ -Color : String                      │
│ -Disk size : Integer                 │
│ -Cost Prize : Decimal                │
├─────────────────────────────────────┤
│ Calculte Monthly Installment         │
└─────────────────────────────────────┘
```

```
┌──────────────────┐  ┌──────────────────────┐  ┌──────────────────────┐
│     Laptop       │  │  Personal Computer   │  │     Main-Frame       │
├──────────────────┤  ├──────────────────────┤  ├──────────────────────┤
│ -Installment per │  │ - Installment per    │  │ - Installment per    │
│ month :          │  │ month:               │  │ month:               │
│ Decimal          │  │ Decimal              │  │ Decimal              │
└──────────────────┘  └──────────────────────┘  └──────────────────────┘
```

Load the VB.NET solution from the following directory:
C:\CP LEVEL 4 SUPPLEMENTARY 2011 PRACTICAL\ CP LEVEL 4 OOP Q FEB 2011

2.1   Insert your examination number as a comment in your code.   (1)

2.2   Code for the super class.

The price of a computer is calculated as follows:
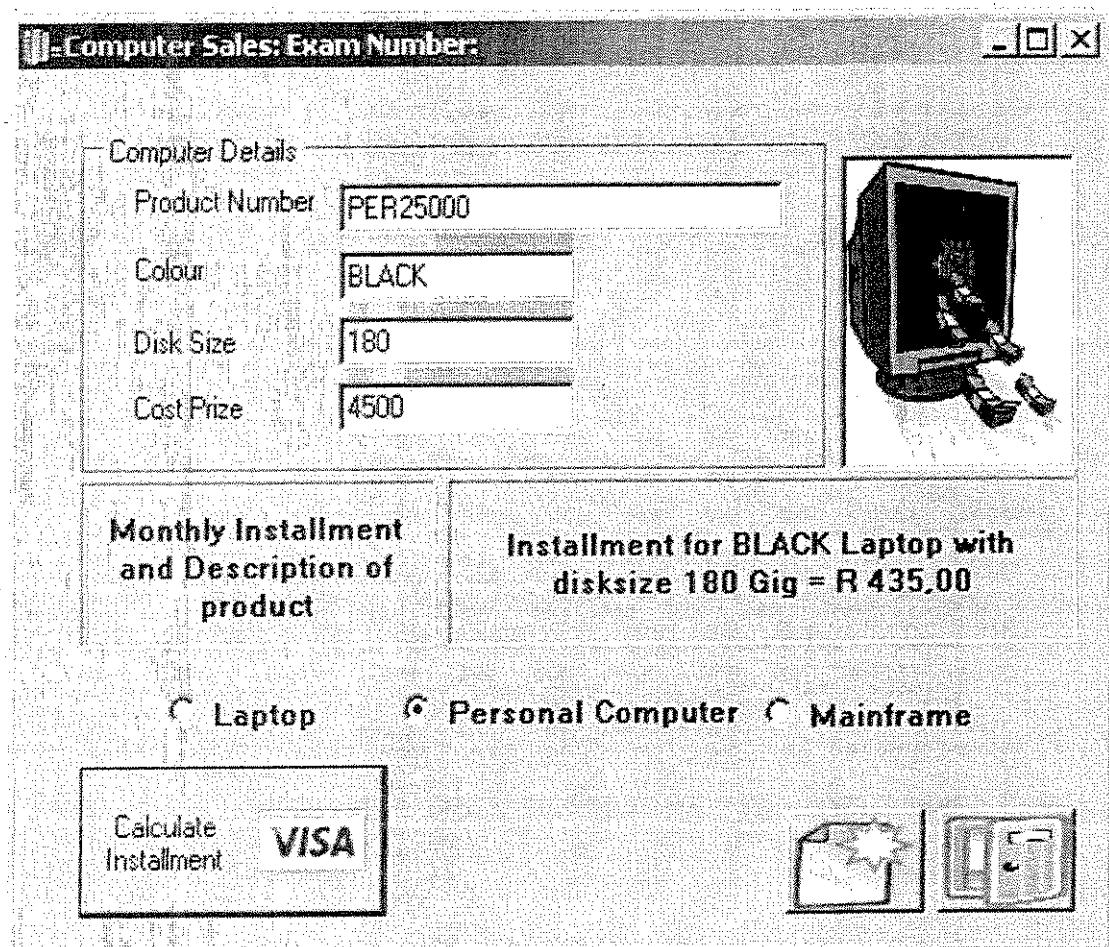
Price of a Computer = R4500
Price of a Laptop = Computer + R50
Price of a Personal Computer = Computer + R60
Price of a Mainframe = Computer + R200

Instalment = (Total Cost / 12)

(8)

2.3 Code for the sub classes. (9)

2.4 Add the code that will calculate the monthly installment of a laptop over 12 months using the same information provided in the screen shot below:

(7)

2.5 Insert your examination number in the title bar of the form and make a printout of the form. (1)

2.6 Code the *Clear* button to clear all input controls and move the focus to the Product Number field. Set the Laptop *Radio* button as the checked button. (4)

2.7 Code the *Exit* button. (1)

2.8 Make a printout of the source code and save it. (1)

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QUESTION 3: DATABASE

BACKGROUND INFORMATION

SA Home Theatre Systems is a new company in your area that sells home theatre systems. They are currently using a program that was designed by another company, to access their customer information stored in a database called Customer Information.

The program is already linked to the database but the main problem is that staff of Home Theatre Systems' cannot update, delete or enter new customer information in the database. Another problem is that the program does not display monthly installments due by their customers. The SA Home Theatre Systems management has approached you to solve these problems for them.
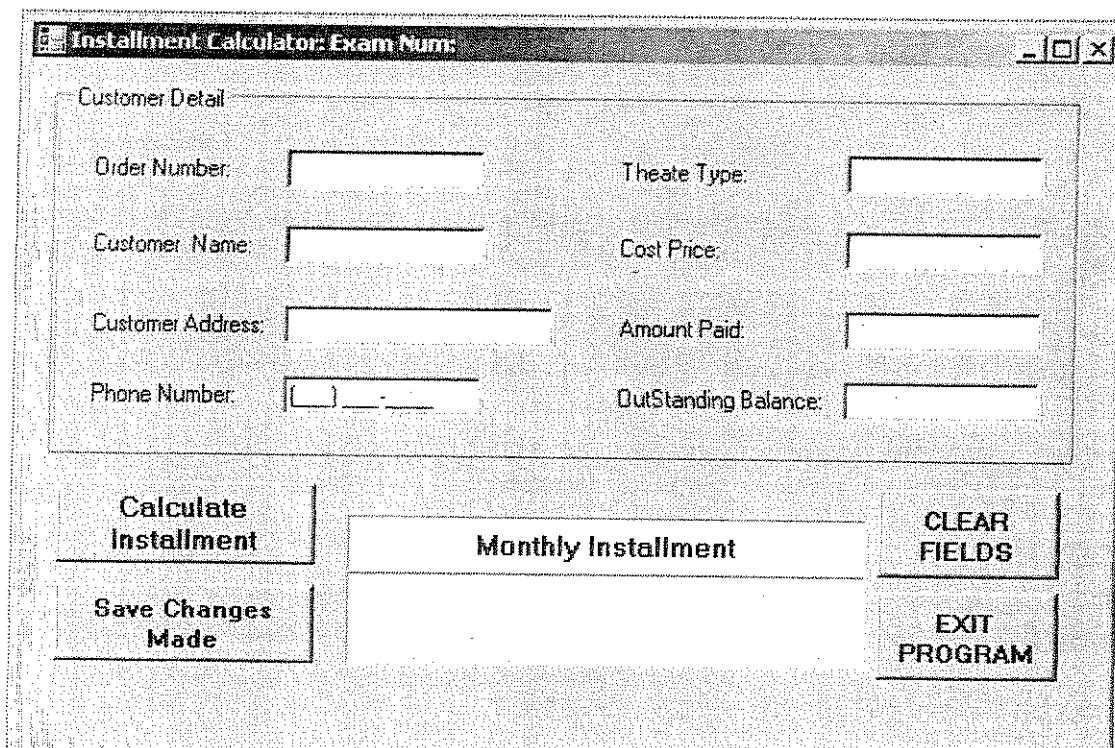
Open the folder:
C:\CP LEVEL 4 SUPPLEMENTARY 2011 PRACTICAL\CP LEVEL 4 DB Q FEB 2011

Your folder should have the following files saved in it.

Database file: Cust_Info.MDB
VB.NET Solution: Home Theatre systems

Below is a screen print of what the interface looks like:

Open the VB.Net solution and add the following.

3.1 Change the text in the title bar of the form to contain your examination number. (1)

3.2 Make use of the OLEDB – binding method to bind all the *text boxes* in your form with the corresponding fields in your Customers Information table. (4)

3.3 Add the navigation bar at the bottom of the form. (1)

3.4 View your Data Sources; make a screen dumb showing all the data sources and make a printout. (2)

3.5 Add the code that will calculate monthly installments for all customers.

HINT: Monthly Installment = Outstanding Balance/12 months. (3)

3.6 Run your program and navigate through to the THIRD customer in a database using the binding navigator component on your form. Calculate the monthly installment for this customer.

HINT: The binding navigator should display record 4 of 4. (1)

3.7 Make a printout of the form. (1)

3.8 Code the *Save Changes Made* button. Your coding should include the following:

HINT: Make use of *Try. Catch*

3.8.1 If the changes to the record were not successful, a Message box should warn the user of this. (4)

3.8.2 If the changes to the record were successful, a Messagebox should inform the user of this. (4)

3.9 Code the *Exit Program* button. The user should get a verifying message to confirm his choice. (4)

3.10 Code the *Clear fields* program button. (2)

3.11 Add your EXAMINATION NUMBER to the source code and make a printout of the source code. (1)

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QUESTION 4: HTML

S.A. Home Theatre system is going online. Develop the following web page as given below using HTML, CSS in JAVA Script Technologies.

4.1   Insert your examination number as the title of the web page.   (1)

4.2   The background color of the page is sky blue and the heading "LOG-IN FORM" is left aligned.   (2)

4.3   The form must accept the following: USERNAME, PASSWORD AND CONFIRM PASSWORD.
       The Cancel button must clear the user input.
       One link that should direct you to the HOME PAGE that appears below:

(11)

4.4	The background color of this page is sky blue.	(1)
4.5	The font color for the heading is white.	(1)
4.6	Create a table and add all information as shown on your screen shot above.	(2)
4.7	Create an unordered list of the items in a table as shown on the screen shot.	(8)
4.8	Make a printout of all the screens.	(1)
4.9	Make a printout of the source code.	(1)

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TOTAL: 100