Level 2 Create software components using Visual Basic.NET (7266/7267-207)

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Assignment guide for Candidates
Assignment B

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Introduction – Information for Candidates

About this document

This assignment comprises part of the assessment for Level 2 Create software components using Visual Basic.NET (7266/7267-207).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **4** hours.

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Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 4 hours

Assignment set up: A scenario is provided below for this assignment.

This assignment is made up of **three** tasks

- **Task A** - provides a detailed design specification for software to demonstrate a program that writes to and reads from a sequential text file.
- **Task B** - requires the candidate to analyse the execution of the program using specified debug facilities.
- **Task C** - provides presentation criteria that should be followed by candidates when producing their work.

Scenario

A software development company, AlphaTech, is developing a simple Sales recording program that stores data in a sequential text file. As a contracted employee of AlphaTech you have been asked to create and test the software.

AlphaTech have supplied the following outline specification to assist you.

You are required to create and test this Sales recording program that reads and writes to a sequential text file called Sales.txt. The program has a user interface comprising of text boxes, command buttons, radio buttons, group boxes and a list box. See figure 1 below:

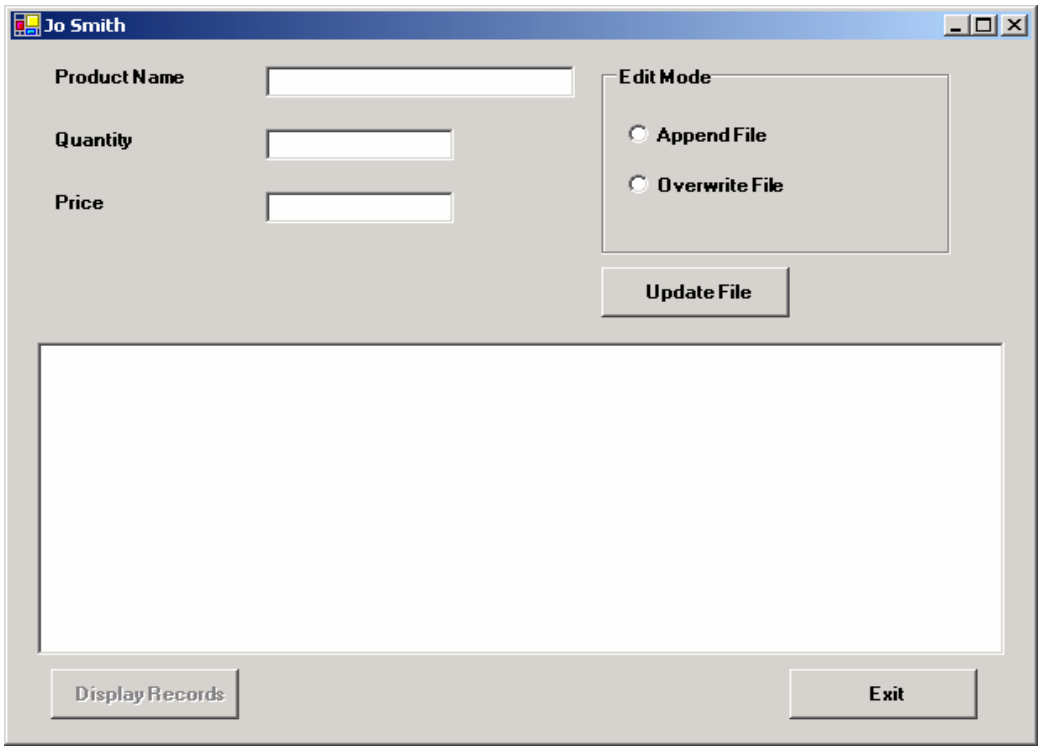


Figure 1

The controls must be coded so that Sales details (Product Name, Quantity, Price) are entered into relevant text boxes and written to the Sales.txt text file. The group box and radio buttons enable records to overwrite or append to the text file. The functionality of the program must include:

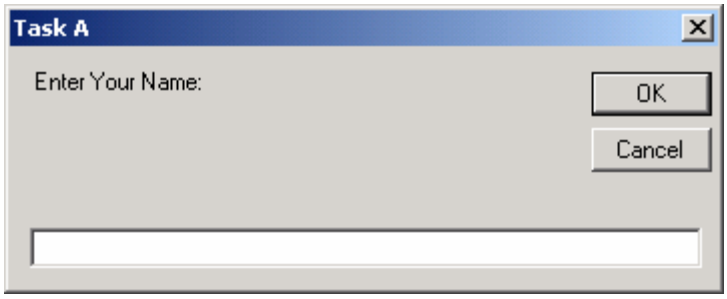
- If Append File is selected entries are appended to the text file. If Overwrite File is selected entries overwrite any existing data in the text file. The default mode should be Append File.
- The text boxes contain the data to be stored in the text file.
- The data is written to the text file when the Update File command button is clicked. Once the data is updated, the text boxes should be cleared ready for new data.
- The program will also display the content of the Sales.txt text file in the list box.
- The Display Records command button should be disabled until the Update File command button is clicked once.
- When clicked the Display Records command button will:
    - Initially clear the list box
    - Display the records from the Sales.txt in the list box
- The Exit button should return a Yes/No Message box and close the program only when the Yes option is clicked.

Task A

1 Save the project at regular intervals as you work through the task. Name the form file

frmTaskA and project as Assignment2.

2 Use an Input Box during the Form Load event to capture the user's name. Assign the results to an appropriate variable. The Input Box should be the same as shown below:



Use the same variable to set the form's Text property to display the user's name.

See ***Figure 1*** as an example.

3 Add **three** labels and text boxes on the form as shown in figure 1. Name the controls and set the Text properties from the following list:

Control Type	**Control Name**	**Text Property**
Label	lblProdName	Product Name
Label	lblQuantity	Quantity
Label	lblPrice	Price
Text Box	txtProdName	(Blank)
Text Box	txtQuantity	(Blank)
Text Box	txtPrice	(Blank)

4 Draw a GroupBox as shown. Name the GroupBox grpEditMode and set the Text property to: Edit Mode.

5 Draw **two** radio buttons and position within the GroupBox. Name the controls radAppend and radOverwrite. Set the Text property for the controls to Append File and Overwrite File.

6 Set the radAppend checked property to True.

7 Draw **three** command buttons as shown. Name the controls and set the Text property as follows:

Control Name	**Text Property**
cmdUpdate	Update File
cmdDisplay	Display Records
cmdExit	Exit

8 Set the Enabled property of cmdDisplay to False.

9 Draw a list box as shown and name it lstDisplay.

10 Within the code window declare a String variable called **strFileName** with Form level scope.

11 Code the Form Load event and assign the variable **strFileName** with the value **Sales.txt**.

12 Code the cmdUpdate Click event as follows:

- Pass the txtProdName text value to a appropriately named and declared string variable
- Pass the txtQuantity text value to a appropriately named and declared byte variable
- Pass the txtPrice text value to a appropriately named and declared decimal variable
- If the radAppend Checked property is True then the Sales.txt file is opened in Append mode mode (use the strFileName as the filename)
- If the radOverWrite Checked property is True then the Sales.txt file is opened in Output mode (use the strFileName as the filename)
- Use the PrintLine function to write the three variables holding Product Name, Quantity, Price to the sequential text file
- Close the Open File
- Set the **three** text boxes to (blank) ready for the next entry.
- Set the cmdDisplay Enabled property to True

13 Code the cmdDisplay Click event as follows:

- Declare a DataRecord string variable
- Open the Sales.txt file in Input mode (use the strFileName as the filename)
- Uses the Items.Clear method to clear any items from the lstDisplay list box
- Use a loop in combination with the EOF property to:
    - Add each line of the Sales.txt file into the variable DataRecord using the LineInput function
    - Add the content of DataRecord as an item in the lstDisplay list box

14 Code the Exit button to display the following Message Box:

Only if 'Yes' is clicked should the program be closed

15 Check that the program works correctly and correct any errors found. Ensure the software conforms to the specification.

16 Produce a program listing of the code of your program. Label it TaskA.

17 Produce a screen print of the form frmTaskA and label it Screenprint1.

Task B

In the task you are required to make amendments to the functionality of your program.

The value of the sale needs to be saved within the Sales.txt file. The value is calculated by multiplying the Quantity and Price variables.

1 Amend the cmdUpdate Click event:

- Declare a variable called Total as a decimal data type
- Assign to Total the result of the calculation Price x Quantity
- Ensure that this new value is included in additions to the sequential text file.

2 Amend the cmdDisplay Click event to remove potential empty rows being displayed:

- Place an If statement inside the Loop. A record will be displayed only if the record string is NOT (blank).

3 Produce a program listing of the code of your program. Label it TaskB1.

4 Enter the following Sales Data to test the program:

Product Name	Quantity	Price
Product1	5	1.99
Product2	3	4.50
Product3	2	3.00

5 Amend the cmdDisplay Click event:

- Add a Console.WriteLine statement within the Loop to display the content of the variable DataRecord in the Output window

Produce a screen print of the Output Window and label it Screenprint2.

6 Locate the EXE file or create if not automatically generated.

7 Run the executable file and demonstrate the program works correctly.

8 Produce a program listing for the amended code. Label it TaskB2.

Task C

Candidates should follow the below criteria when producing their work:

1 The program conforms to the design specification.

2 The program uses the most appropriate data type(s).

3 The program syntax is consistently indented to aid readability.

4 The program code is commented.

Note

- Candidates should produce the following for their assessor:
  - A printed program listing for TaskA.
  - A printed program listing for TaskB1.
  - A printed program listing for TaskB2.
  - A screen print for frmTaskA.
  - A screen print of the Output window.
- At the conclusion of this assignment, hand in all paperwork and removable media to the test supervisor.
- Ensure that your name is on the removable media and all documentation.
- If the assignment is taken over more than one period, all removable media and paperwork must be returned to the test supervisor at the end of the sitting.

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