Level 3 Develop software using C# (7266/7267-308)

e-Quals
Assignment guide for Candidates
Assignment D

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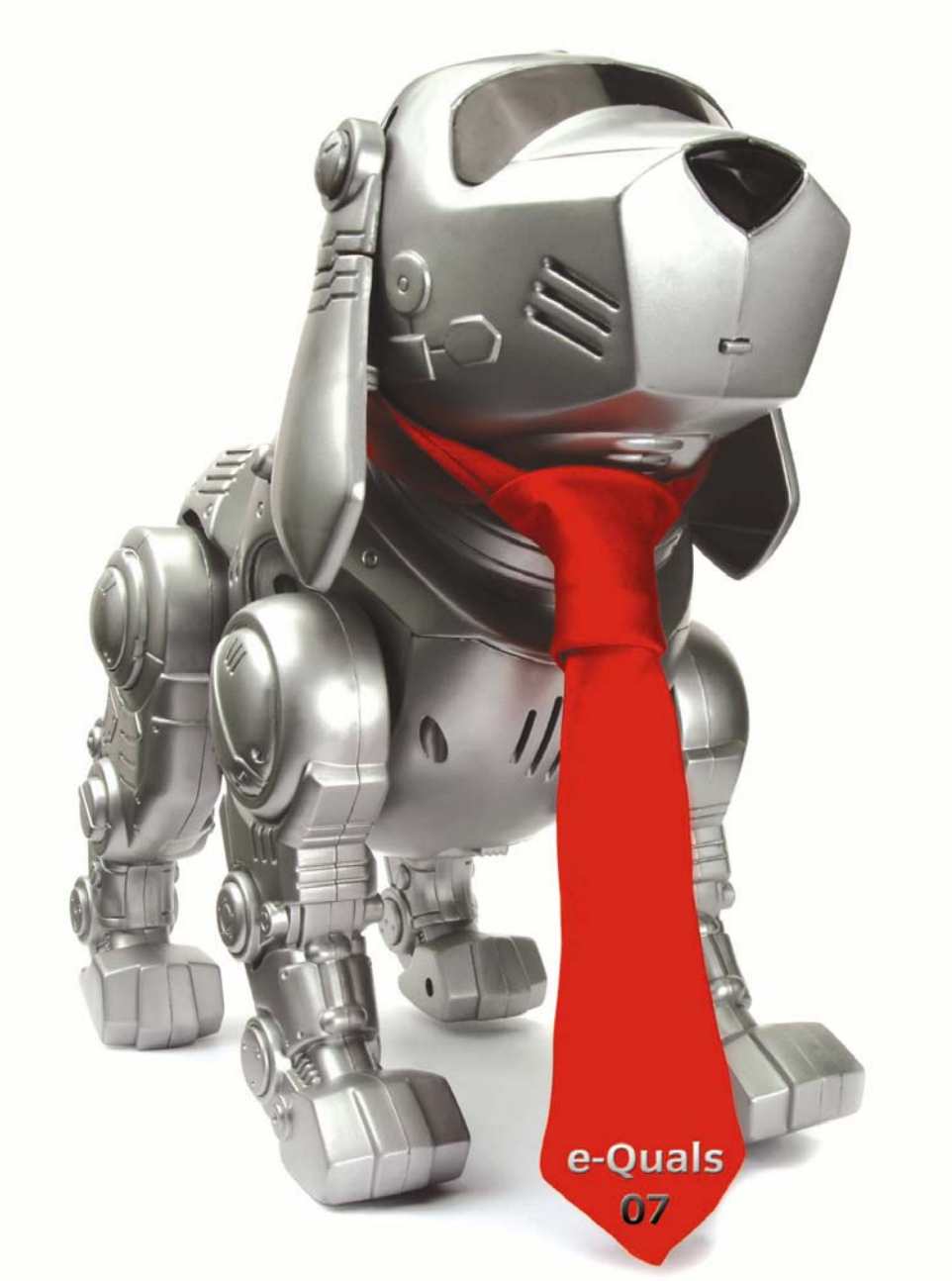

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Assignment D

Introduction – Information for Candidates

About this document

This assignment comprises part of the assessment for Level 3 Develop software using C# (7266/7267-308).

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**.

Level 3 Develop software using C# (7266/7267-308)
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:

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

- Task A - Design and create software from a given design specification
- Task B - Test and document the software

Scenario

You work as a programmer for Primtech Computing who develop software for clients. You have been asked to design, create and test the software to access an external database. The interface to the database must enable the user to do the following:

- display individual records
- add a new record
- delete a record
- edit a record
- update a record
- cancel amendments for a record
- search records.

A database already exists named Hospital containing a table tblPatient which contains patient details. The table tblPatient contains the following fields:

Field Name	Data Type	Field Length
PatientID (Primary Key)	Numeric	
Surname	Text	30
FirstName	Text	30
Gender	Text	1
WardName	Text	20
DateofBirth	Date (dd/mm/yyyy)	
InPatient	Logical (Yes/No)	

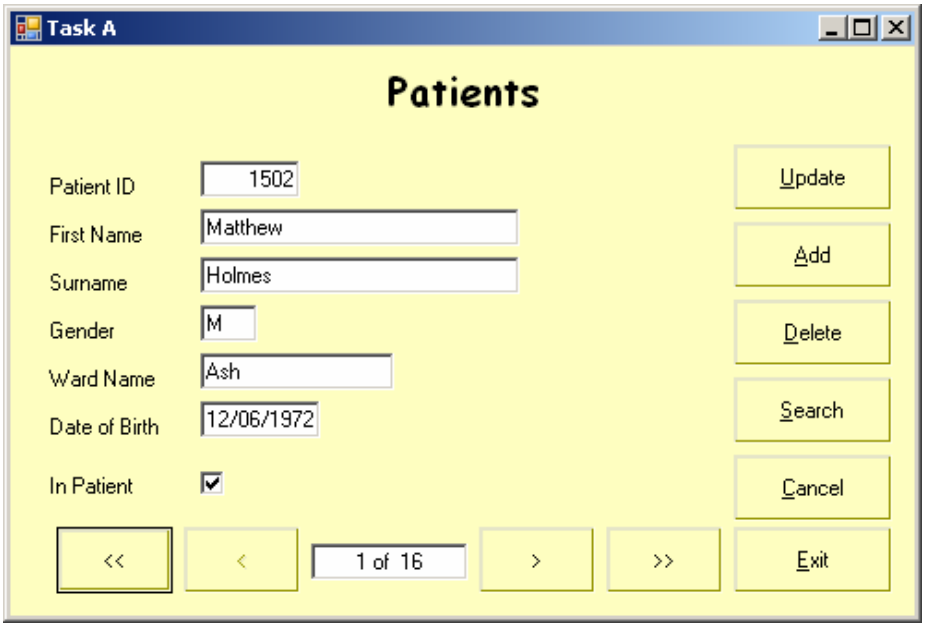
Task A

In this task you are required to design and create software to access an external database (Hospital) with a single table via a database connection and a data form.

Copy the database file(s) that you have been given into the same directory as your project. Make a backup copy of the file(s) in another directory.

1 Save the project at regular intervals as you work through the task. Save the form files as frmPatient and frmSearch and the Project as HospitalDatabase.

2



frmPatient

Create a data form that shows a single record to appear similar to the form shown above and includes:

- a label for the heading 'Patients' in bold with a different font and a larger font size
- seven controls and associated labels to display the data for the record
- controls to move to the first, previous, next and last record
- a control to hold a record count in the form n of nn
- six buttons for Update, Add, Delete, Search, Cancel and Exit adding the shortcuts as shown
- setting the background to a suitable colour
- the data input controls receiving focus in an appropriate order.

3 Set the Text property of the form frmPatient to:
Task A *your name* and today's date

4 Make a connection to the database Hospital using suitable parameters.

5 Make sure that the alignment of the displayed fields is as shown in frmPatient.

6 Set up the program so that when the form frmPatient is loaded the dataset is loaded automatically and the data for the first record is displayed in the controls.

7 Write code for the Update, Add and Delete buttons.

8 Write code for the Cancel button to cancel any amendments for the current record.

9 Write code for the controls to move to the first, previous, next and last records.

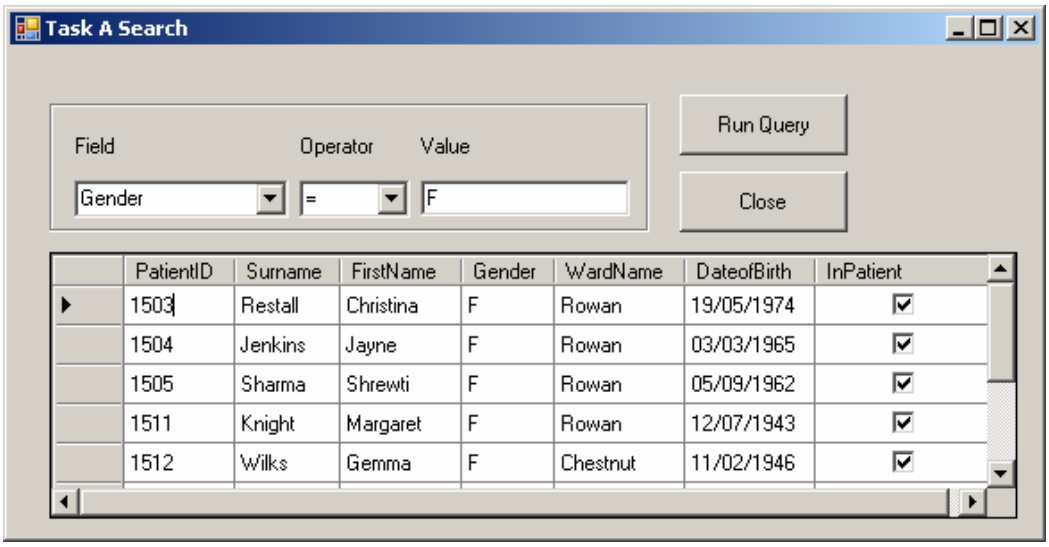
10 Write code in a function to display the total record count and current record number each time one of the navigation buttons Is used. This will be displayed in the text box associated with the navigation buttons as shown on the form frmPatient.

11 Insert the code required to handle errors for database access which prevents run-time errors.

12 Write code for the Exit button to terminate the program.

13 Write code for the Search button to open a second form named frmSearch.

14 This following form is to be used to allow the user to specify search criteria and display the matching records from the database table.



frmSearch

Create a new form frmSearch to appear similar to the form shown above and includes:

- a group box on the form to contain the following:
  - two combo boxes named cboField and cboOperator with associated labels
  - a text box for data entry with an associated label
- a DataGridView control to display the results of the search
- two buttons named btnQuery and btnClose with the text Run Query and Close.
- make sure that the formats of the displayed fields are as shown in frmSearch.

15 Save the form as frmSearch.

16 Set the Text property of form frmSearch to:
Task A Search *your name* and today's date.

17 Write code in the Load function for the form to

- populate cboField with the field names Surname, FirstName, Gender, WardName, DateofBirth and InPatient
- populate cboOperator with the following operator symbols, each one as a single list item: =, <, >, <=, >=, <>

18 Write code for the Run Query button that will

- match the search criteria entered using the combo boxes and the value in the data entry text box.
- display in the data grid the fields Surname, FirstName, Gender, WardName, DateofBirth and InPatient, for all the records which match the criteria.
- only run the search if data exists in all three query criteria controls.
- return nothing for a criteria string that is not matched by any record.

19 Write code for the Close button to hide the form and return to the form frmPatient.

Task B

In this task you are required to test and document the software created.

1 Create test data to test the Update, Add, Delete, Cancel and Search buttons on the frmPatient form and the Run Query button on the frmSearch form.

2 Prepare a test plan, test the software, compare the actual results to the expected results keeping a log for each test which identifies any discrepancies between actual and expected results and records any amendments to correct errors.

3 Locate the EXE file and run the executable file to demonstrate the software.

4 Produce end user documentation to show how to use the software.

5 Print a program listing and screen prints of the forms frmPatient and frmSearch.

Candidates should check that the program produced meets the following requirements:

6 The program must conform to the design specification.

7 The program uses the most appropriate controls and events.

8 Meaningful names are used for constants, variables, objects, forms and controls using consistent naming convention.

Note

- Candidates should produce the following for their assessor:
  - a printed program listing
  - screen prints of the forms frmPatient and frmSearch
  - test data, test plan, expected results, actual results and log of testing
  - end user documentation
- Ensure that your name is on all documentation
- If the assignment is taken over more than one period, all paperwork must be returned to the test supervisor at the end of each sitting.

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