Level 2 Create Software Components Using C# (7266/7267-206)

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e-Quals
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 C# (7266-206).

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 2 - Create Software Components Using C# (7266-206)
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 for candidates in the form of a company specification for a new project

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

- **Task A** - provides a detailed design specification that should be followed by candidates when developing their program
- **Task B** - requires the production of evidence to show that the program conforms to the design specification
- **Task C** - provides presentation criteria that should be followed by candidates when producing their work
- **Task D** - lists the evidence to be produced for this assignment.

Scenario

You have applied for a job as a trainee programmer for a local software company. The job specification requires you to already have a basic knowledge of programming in C#. In order to assess your suitability, your prospective employer requires you to demonstrate your C# skills by writing and testing a short program.

You are required to produce a simple word-processor/notepad to the company's specific design. The task is designed to test your ability to manipulate text within a rich file text box as well as opening and saving .rtf files. Your program must include a working menu and tool bars. In addition you are required to produce evidence that you have used the built-in debugging facilities and that the program has been fully tested and documented.

The following screen prints form a part of the design/requirements and will be referred to in the following detailed design specification.

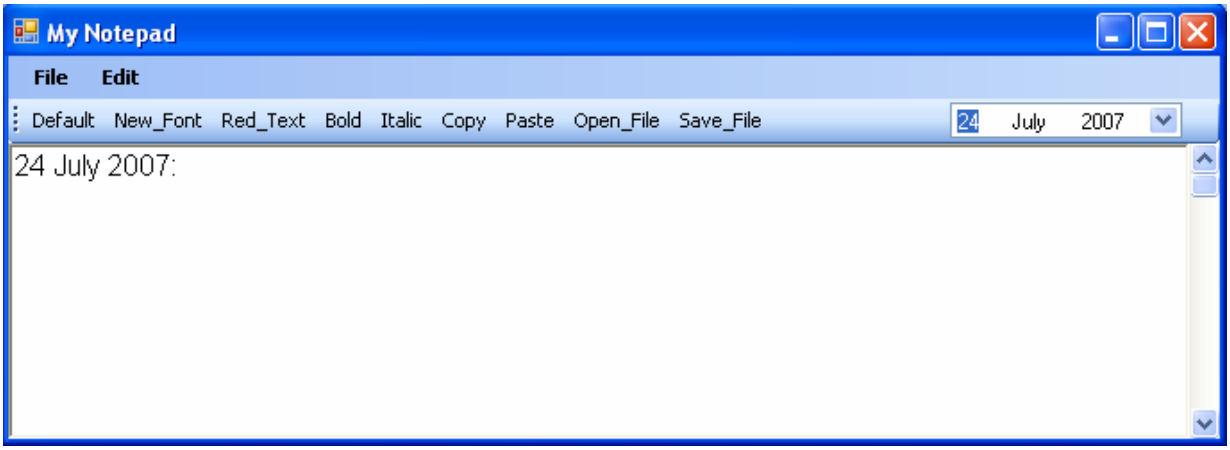

Fig 1

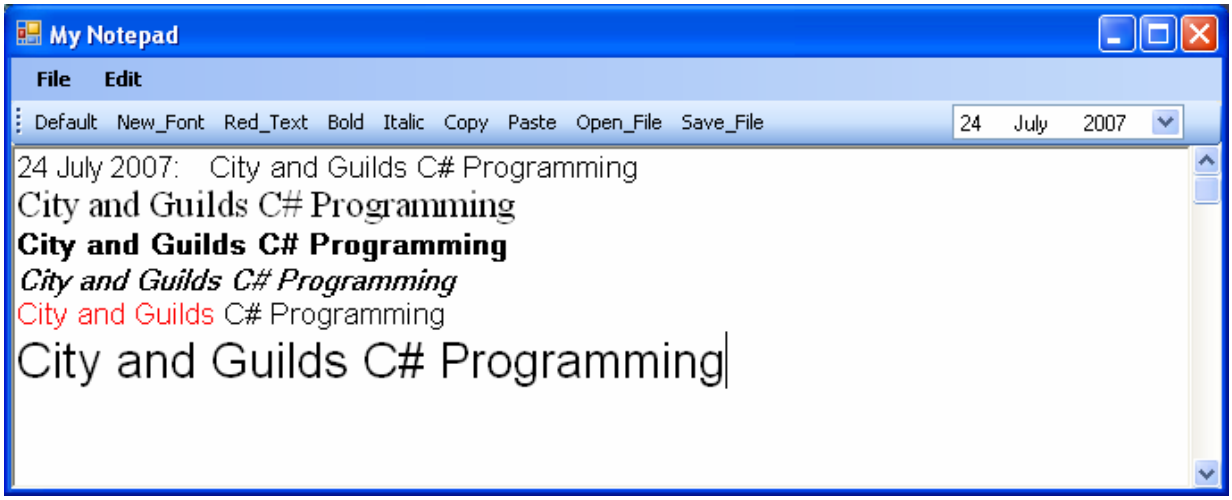

Fig 2

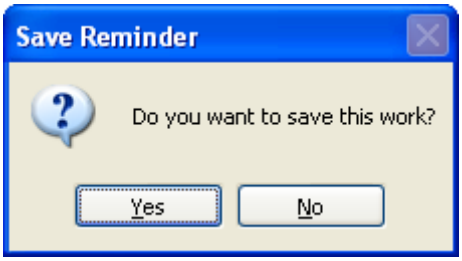

Fig 3

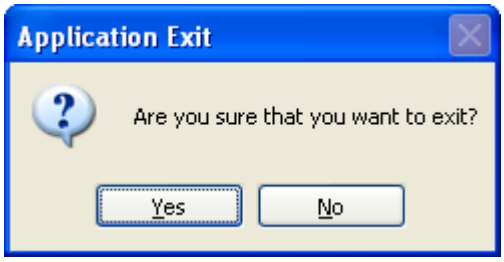

Fig 4

Task A

1 You are advised to save your work at regular intervals.
The project is to be saved as RTFBoxes and the main form saved as frmMyNotepad.

2 Public variables may be used, but as far as possible local variables must be declared.

3 frmMyNotepad to be created similar to that shown in Fig 1.
At design the following properties are to be set to:

StartPosition: CenterScreen
Text: My Notepad
WindowState: Maximised

4 As shown in Fig 1, frmMyNotepad must include the following components:

- A tool strip named “tstCommands”
- A menu strip named “mnuOptions”
- A rich text box named “rtfBox”
- A dateTimePicker named “dtpMenu”

5 Set the properties at design for rtfBox to:

- Dock = Fill
- Font name = Arial
- Font size = 12pt

6 Add the following nine buttons to the tool strip tstCommands:

Name	Display Style	Text
tstDefault	Text	Default
tstNewFont	Text	New_Font
tstRed	Text	Red_Text
tstBold	Text	Bold
tstItalic	Text	Italic
tstCopy	Text	Copy
tstPaste	Text	Paste
tstOpen	Text	Open_File
tstSave	Text	Save_File

7 Add a dateTimePicker named “dtpMenu” to the right hand side of the tool strip tstCommands and set it’s anchor property to Top, Right

8 Size the nine buttons to make them all the same width and height

9 Add two items to the menu strip mnuOptions with the following properties set at design:

Name	Text	FontBold

menuFile	File	True
menuEdit	Edit	True

10 Add the following sub menu items to menuFile at design:

Name	**Text**	**FontBold**
mnuNew	New	False
mnuFileOpen	Open_File	False
mnuFileClose	Save_File	False
mnuExit	Exit	False

11 Add the following sub menu items to menuEdit at design:

Name	**Text**	**FontBold**
mnuDefault	Default	False
mnuFont	New_Font	False
mnuRed	Red_Text	False
mnuBold	Bold	False
mnuItalic	Italic	False
mnuCopy	Copy	False
mnuPaste	Paste	False

12 Write code that at form load sets the open and save file properties to the file type ".rtf" and sets the default extension for files to ".rtf"

13 Write code that responds to the tool strip click events and causes the changes shown below for any highlighted text.

- Clicking 'Default' returns the text to font Arial, 12, Regular.
- Clicking 'New_Font' must cause the font dialog box to be displayed in order to select a new font, size or style for the text and for any change to take effect.
- Clicking 'Red' must cause that text to change to the colour red.
- Clicking 'Bold' must cause the text to be highlighted as bold.
- Clicking 'Italic' must cause the text to be changed to italic.
- Clicking 'Copy' must cause the text to be copied to the clipboard.
- Clicking 'Paste' must cause the copied text to be inserted at the cursor position.

14 Clicking 'Open_File' must open the open file dialog box. Only .rtf files should be visible.

15 Clicking 'Save_File' must open the save file dialog box. The default file type must be in the .rtf format.

16 When the program executes the rich text box is to display the current date (as shown in dtpMenu) as a long date as shown in Fig 1 followed by a colon (:) and some spaces (eg 3 or 4 spaces).

17 When clicking in the rich text box the cursor position must be to the right of the date awaiting user input. (eg at the end of the spaces).

18 Enter the text “City and Guilds C# Programming” into the rich text box.

19 Copy the text “City and Guilds C# Programming” and past it four times, each on a new line and using the tool strip buttons make the following changes as shown in Fig 2:
Original line to be left as the default text.
Copied line 1 = New font – Times New Roman,16 pt
Copied line 2 = Bold
Copied line 3 = Italic
Copied line 4 = “City and Guilds” only changed to red text.
Copied line 5 = New font – Arial, 20pt

20 Save the file as Demo1.rtf

21 Open the file Demo1.rtf, highlight the last line (Copied line 5 - Arial, 20pt) and click on ‘Default’. The text must change to the default font of Arial,12pt.

22 Click ‘Save_File’ and save the modified text as Demo2.rtf

23 Repeat tasks 19 to 22 to test the menu strip items. Save the two files as Demo3.rtf and Demo4.rtf

24 Clicking on the menu strip item File|New must cause the save file dialog box to open defaulted to .rtf file types.

25 Having saved the file or cancelled the save option the rich text box must be cleared of any text and the current date inserted as Fig 1.

26 Create a Yes/No message box titled “Save Reminder” that becomes visible when the user clicks on the menu strip item File|Exit. The text must be “Do you want to save this work?” and the icon must be a question mark. See Fig 3.

27 Clicking ‘Yes’ in the message box must cause the save file dialog box to appear.

28 Create a second Yes/No message box titled “Application Exit” that becomes visible when the file is saved or the user clicks on the ‘No’ button. The message box text must be “Are you sure that you want to exit?” and the icon must be a question mark. See Fig 4.

29 Clicking ‘No’ will continue with the application in its current state while clicking ‘Yes’ must close/exit the application.

30 Add shortcut keys to the menu options.

Task B

Candidates must evidence the following in order to confirm that the program conforms to the design specification.

1 Produce screen prints to show that the debug facilities in C# have been used to locate logical errors (i.e. Breakpoint, Step Into etc.)

2 Produce test data that shows expected results from known inputs.

3 Create or locate the executable file for this program and tests its operation.

4 Produce a record (test log) of the actual results and then compare them to the expected results and correct any errors.

Task C

Candidates should check that the program produced meets the following criteria.

1 The program must conform to the design specifications given.

2 The program uses appropriate controls and methods.

3 Meaningful names are used for controls and methods using consistent naming conventions.

4 The program syntax must be consistently indented to aid readability.

5 The program must be commented to aid future maintenance.

Task D

Candidates should produce the following for their assessor.

1 Print a program listing of the code.

2 Produce screen prints of:

- frmMyNotepad
- Message box “Save Reminder”
- Message box “Application Exit”
- Contents of the file Demo1.rft
- Contents of the file Demo2.rtf
-

3 Save all project files to removable media or state the file locations

Note

- At the conclusion of this assignment, hand all paperwork and removable media to the test supervisor.
- Ensure that your name is on any 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 each sitting.

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