

CST8221 - Java Application Programming

Part 2 - Practical Midterm Test

You must submit your application no later than 16:55 on March 16th, 2016.

TEST INSTRUCTIONS:

Part 2 is an open-book test. You are allowed to use any available resources except for your fellow students' work. No e-mail or IMS clients should be open on your desktop and no cell phones or other communication devices. You have two hours to complete the programming task.

This part of the midterm test counts for 15% of your final grade.

PROGRAMMING TASK:

During the practical part of the Midterm Test you are to write a GUI based Java application. The application implements a rudimentary program (text) editor. It has a simple menu system (including a **pop-up menu**), and it is capable of creating, opening, modifying and saving text files.

Before you start programming your application download from BB the midterm demonstration program (demo). Run the program and explore it carefully for a few minutes. In order to get full credit for the test, your program must look and behave exactly as the demo one. Also, your program must meet the software requirements specifications outlined below.

SOFTWARE REQUIREMENTS SPECIFICATION:

1. The initial and the minimum frame size must be 1000 by 700 pixels. The frame must be resizable. The launching class (containing the *main()* method) must be called **Editor**.
2. The frame title must contain your name (see demo)
3. Initially, text area must have 80 rows and 80 columns.
4. The text area must be surrounded by scroll bars. The horizontal scroll bar is invisible at launch but will become visible when the text exceeds 80 columns (see demo).
5. All menus in the menu bar must have mnemonics (see demo). The menu bar must have a border.
6. The **New**, **Open**, **Save**, and **Exit** menu items in the File menu must have accelerators (see demo).
7. The **About** menu item in the Help menu must have a mnemonics (see demo).
8. The application must have a **status** line at the bottom of the text area. It need not be visible at launch. Once some menu item is selected from the menu system (except for **About** in **Help**), the status line must display the name of the selected menu item and the result from the action caused by the selection (see demo).
9. If one of the **Cut**, **Copy**, and **Paste** menu items is selected in the **Edit** or the **pop-up** menus, the selection must be reported on the status line only. No other implementation is required (see demo)

10. If selected, the **About** menu item in the **Help** menu must display an information message dialog with your name and version (see demo). The dialog window must appear in the middle of the application frame
11. The **Open** and **Save** file dialogs must show (filter) only the **files with extensions** `.txt`, `.java`, and `.class`. The current directory (folder) must be the default folder for the open and save operations. The default file type must be `.java` (see demo).
12. If a file is opened and then saved immediately, the saved file must be identical in content and size with the original.
13. If the user types the name of a non-existing file in the **Open** dialog **File Name** field and tries to open it, the status line must notify the user that the file does not exist (see demo).
14. The application must have a **pop-up** menu which must be displayed within the boundaries of the text area (see demo).
15. The application must have a **toolbar**. At launch the toolbar must have a vertical orientation (see demo). The toolbar must have three buttons: D, B, and O. They all must have mnemonics and tooltips and must be separated by separators (see demo). The toolbar must be detachable (floatable). When a toolbar button is clicked, the background color of the text area must change correspondingly (see demo). The default background is white. If the background is blue or orange, the text color must be white; otherwise it must be black (default).

SUBMISSION:

You must submit your application no later than 16:55 on March 16th, 2016.

The header comment of the application `.java` file(s) must contain the following information:

```
/* CST8221 – JAP, Midterm Test, Part 2
```

```
* Student Name and Student Number: your name and number
```

```
* Date: date of submission Time: time of submission
```

```
* Development platform: for example, Win 7/8, Mac, Linux
```

```
* Development tool: for example, Eclipse or whatever you are  
* using as a development tool (IDE)
```

```
* Java SDK version: java 1.7_XX or 1.8_XX
```

```
*/
```

Note: Java documenting comments are not required.

Compress into a **zip** file all application related `.java` and `.class` files (nothing else please).

Upload the zip file on Blackboard. You will find the upload link in Midterm Test folder. The name of the zip file must have the following structure: **Your Last Name** followed by the last three digits of your student number followed by `_JAP_MTP2`. For example: **Ranev345_JAP_MTP2.zip**.

VERY IMPORTANT NOTE:

In order to receive credit for the practical part of the midterm you must attend the designated lab period for the midterm – Wednesday, 16 March 2016, 15:00-17:00.