jedit-cr#3-team08 - Change request log

# Concept Location

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| Step # | Description | Rationale |
| 1 | *Ran the system.* | *To ensure the system is functioning properly and establish a starting point for further exploration.* |
| 2 | *Interacted with the system: clicked on the run button, entered the jEdit interface.* | *To familiarize with system features and identify areas for potential modification.* |
| 3 | *Searched for "Toggle Line Numbers," "Toggle Buffer Switcher," "Toggle Full Screen," etc.* | *Identified the need to add a toggle checkbox in the View menu.* |
| 4 | *Searched for "Toggle Line," clicked on the file "jedit\_en.props."* | *Targeted file based on relevance to search keywords, indicating possible toggle settings.* |
| 5 | *Inspected the file and found the line "toggle-line-numbers.label=Toggle $Line Numbers."* | *Identified line responsible for toggle button label setting.* |
| 6 | *Global searched the line. Selected "jedit\_gui.props" and "actions.xml" from 15 results.* | *Choosed relevant files considering language variations for further investigation.* |
| 7 | *Inspected the files "jedit\_gui.props" and "actions.xml."* | *Understood contents and functionality of files.* |
| 8 | *Searched for keywords like "Scrollbars," "vertical," "horizontal," "JScrollBar."* | *Examined scroll bar implementation in the text area.* |
| 9 | *Inspected relevant files such as "Progress.xml," "actions.xml," "TextArea.java," etc.* | *Identified files likely to contain relevant code based on search overview.* |
| 10 | *Inspected all relevant classes.* | *Reviewed classes containing search term to identify potential areas for modification.* |
| 11 | *Added breakpoint at line 117 in TextArea.java.* | *Verified if scrollbars were triggered at that location.* |
| 12 | *Confirmed the class requiring modification to address the scrollbar issue.* | *Ensured identified class was the one needing modification for scrollbar resolution.* |

**Time spent (in minutes):** 100

*Classes and methods inspected:*

* *org/gjt/sp/jedit/View.java* 
  + *public void toggleHideScrollbars()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/actions.xml*
  + *<ACTION NAME="toggle-hide-scrollbars">*
* *org/gjt/sp/jedit/jedit\_gui.props*
* *doc/users-guide/files.xml*
* *doc/users-guide/source-edit.xml*
* *org/gjt/sp/jedit/textarea/textarea.actions.xml*
* *org/gjt/sp/jedit/AbstractOptionPane.java*
* *macros/Interface/Reset\_TextArea.bsh*
* *org/gjt/sp/jedit/gui/FloatingWindowContainer.java*
* *org/gjt/sp/jedit/help/HelpViewer.java*
* *org/gjt/sp/jedit/EditPane.java*
* *org/jedit/localization/jedit\_en.props*
* *org/gjt/sp/jedit/textarea/JEditEmbeddedTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/JEditTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/StandaloneTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/TextArea.java*
  + *public abstract void toggleScrollBarVisibility()*
  + *public abstract boolean areScrollbarsVisible()*

# Impact Analysis

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| Step # | Description | Rationale |
| 1 | *Inspected the file "jedit\_en.props".* | *To review the contents of the properties file and identify any relevant changes or additions.* |
| 2 | *Checked if the modification in "jedit\_en.props" reflected in the view menu but observed no change.* | *Wanted to verify if the modification made to the properties file effectively updated the view menu, identifying any discrepancies.* |
| 3 | *Additionally, inspected a different properties file, "jedit\_gui.props," by adding "toggle-hide-scrollbars".* | *Attempted to ensure that the toggle checkbox is visible in the view menu by exploring changes in another relevant properties file.* |
| 4 | *Inspected "actions.xml" to understand existing toggle checkbox implementations.* | *To gain insight into how toggle checkboxes are implemented and to determine the appropriate action for the new toggle checkbox.* |
| 5 | *Inspected if the implementation can be written in "View.java".* | *Since the toggle hide scrollbar checkbox should be visible and operable in the View menu.* |
| 6 | *Inspected and identified a dependency on an object from an abstract class, "TextArea.java."* | *Recognized the need to utilize functionality provided by the abstract class to implement the toggle feature for scrollbars.* |
| 7 | *Determined potential solutions to utilize objects from the abstract class by identifying three child classes for "TextArea.java".* | *Explored different approaches to integrating functionality from the abstract class into the toggle feature for scrollbars.* |
| 8 | *Established a uniform approach to access objects from the abstract class among its child classes by creating abstract methods and implementing them.* | *Implemented a consistent method for accessing functionality from the abstract class across various child classes.* |
| 9 | *Verified integration of the abstract class's functionality in the class responsible for handling the view menu, "View.java".* | *Ensured that the functionality from the abstract class is successfully utilized in updating the view menu.* |
| 10 | *Inspected and identified a barrier to accessing necessary objects due to their private access modifiers in "JEditTextArea.java".* | *Recognized a limitation in accessing required objects due to their restricted access level.* |
| 11 | *Adjusted access modifiers in "JEditTextArea.java" by changing them from private to public to facilitate access to necessary objects.* | *Removed restrictions on object access to enable seamless integration with the toggle feature for scrollbars.* |

**Time spent (in minutes):** 45.

*Classes and methods inspected:*

* *org/gjt/sp/jedit/View.java* 
  + *public void toggleHideScrollbars()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/actions.xml*
  + *<ACTION NAME="toggle-hide-scrollbars">*
* *org/gjt/sp/jedit/jedit\_gui.props*
* *doc/users-guide/files.xml*
* *doc/users-guide/source-edit.xml*
* *org/gjt/sp/jedit/textarea/textarea.actions.xml*
* *org/gjt/sp/jedit/AbstractOptionPane.java*
* *macros/Interface/Reset\_TextArea.bsh*
* *org/gjt/sp/jedit/gui/FloatingWindowContainer.java*
* *org/gjt/sp/jedit/help/HelpViewer.java*
* *org/gjt/sp/jedit/EditPane.java*
* *org/jedit/localization/jedit\_en.props*
* *org/gjt/sp/jedit/textarea/JEditEmbeddedTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/JEditTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/StandaloneTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/TextArea.java*
  + *public abstract void toggleScrollBarVisibility()*
  + *public abstract boolean areScrollbarsVisible()*

# Actualization

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| Step # | Description | Rationale |
| 1 | *Added statement "toggle-hide-scrollbars.label=Toggle $hide-scrollbars" in "jedit\_en.props".* | *Intended to introduce a toggle option for hiding scrollbars in the view menu.* |
| 2 | *No change observed in the view menu after addition in "jedit\_en.props".* | *Checked if the modification in "jedit\_en.props" reflected in the view menu.* |
| 3 | *Added "toggle-hide-scrollbars" in "jedit\_gui.props".* | *Attempted to potentially reflect changes in the view menu by modifying a different properties file.* |
| 4 | *Implemented action to hide scrollbar in "actions.xml".* | *Initiated an action to execute when the toggle checkbox is clicked.* |
| 5 | *Added implementation to reflect action in the view menu to "View.java".* | *Ensured that the action triggered by the toggle checkbox is properly reflected in the view menu.* |
| 6 | *Recognized the necessity of using an object from "TextArea.java", an abstract class.* | *Identified a dependency on an object from an abstract class.* |
| 7 | *Identified three child classes for "TextArea.java".* | *Determined potential solutions to utilize objects from the abstract class.* |
| 8 | *Created abstract methods in "TextArea.java" and implemented them in "JEditTextArea.java". Implemented empty methods with @Override in other child classes.* | *Established a uniform approach to access objects from the abstract class among its child classes.* |
| 9 | *Ensured usage of objects from "TextArea.java" in "View.java" class.* | *Verified integration of the abstract class's functionality in the class responsible for handling the view menu.* |
| 10 | *Encountered issues accessing private objects in "JEditTextArea.java".* | *Identified a barrier to accessing necessary objects due to their private access modifiers.* |
| 11 | *Changed access modifiers of objects in "JEditTextArea.java" from private to public.* | *Adjusted access modifiers to facilitate access to necessary objects in "JEditTextArea.java".* |
| 12 | *Verified functionality of the toggle checkbox to ensure it works as expected.* | *Ensured that the toggle checkbox operates correctly, hiding scrollbars as intended.* |

**Time spent (in minutes):** 90.

*Classes and methods inspected:*

* *org/gjt/sp/jedit/View.java* 
  + *public void toggleHideScrollbars()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/actions.xml*
  + *<ACTION NAME="toggle-hide-scrollbars">*
* *org/gjt/sp/jedit/jedit\_gui.props*
* *org/jedit/localization/jedit\_en.props*
* *org/gjt/sp/jedit/textarea/JEditEmbeddedTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/JEditTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/StandaloneTextArea.java*
  + *public void toggleScrollBarVisibility()*
  + *public boolean areScrollbarsVisible()*
* *org/gjt/sp/jedit/textarea/TextArea.java*
  + *public abstract void toggleScrollBarVisibility()*
  + *public abstract boolean areScrollbarsVisible()*

# Validation

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| Step # | Description | Rationale |
| *1* | *Test case 1:* Input:  * *Opened document in jEdit with content exceeding the size of the editor, causing scrollbars to appear.* * *Option selected from the View menu to hide scrollbars.*  Expected Output:  * *Horizontal and vertical scrollbars are no longer visible.* | *This is the regular expected behavior.*  *The test passed.* |
| *2* | *Test case 2:* Input:  * *Opened document in jEdit with content exceeding the size of the editor.* * *Scrollbars hidden using the option from the View menu.*  Expected Output:  * *Horizontal and vertical scrollbars reappear upon selecting the option to show scrollbars from the View menu.* | *This is the regular expected behavior.*  *The test passed.* |
| *3* | *Test case 3:* Input:  * *New, empty document opened in jEdit.*  Expected Output:  * *Scrollbars are not visible since there's no content to scroll.* | *This is the regular expected behavior.*  *The test passed.* |
| *4* | *Test case 4:* Input:  * *Document with very large content opened in jEdit.*   Expected Output:   * *Even with a large document, scrollbars remain hidden after selecting the option to hide scrollbars from the View menu.* | *This is the regular expected behavior.*  *The test passed.* |
| *5* | *Test case 5:* Input:  * *Document opened in jEdit with content exceeding the size of the editor.* * *Option to hide/show scrollbars toggled multiple times from the View menu.*  Expected Output:  * *Each time the option is toggled, scrollbars hide/show accordingly without any issues.* | *This is the regular expected behavior.*  *The test passed.* |
| *6* | *Test case 6:* Input:  * *Option to hide/show scrollbars selected from the View menu.*  Expected Output:  * *The option is correctly labeled and visually clear whether the scrollbars are currently hidden or shown.* | *This is the regular expected behavior.*  *The test passed.* |
| *7* | *Test Case 7:* Input:  * Scrollbars hidden using the option from the View menu. * jEdit closed and reopened.  Expected Output:  * Scrollbars remain hidden upon reopening jEdit. | *The test failed.* |

**Time spent (in minutes):** 30

# Summary of the change request

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| Phase | Time  (minutes) | No. of classes inspected | No. of classes changed | No. of methods inspected | No. of methods changes |
| Concept location | 100 | 16 | 0 | 0 | 0 |
| Impact Analysis | 45 | 16 | 5 | 21 | 14 |
| Actualization | 90 | 8 | 5 | 14 | 14 |
| Verification | 30 | 8 | 0 | 14 | 0 |
| Total | 265 | 48 | 10 | 49 | 28 |

# Conclusions

*For this modification, identifying the relevant code areas was somewhat time-consuming due to the little complex structure. We conducted an impact analysis and change propagation through the codebase, and then updated the necessary parts accordingly. Testing was carried out manually to ensure the changes were implemented correctly.*