

A Dataset from Change History to Support Evaluation of Software Maintenance Tasks



Bogdan

Dit



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Kagdi



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San Francisco, CA





Our Datasets...

- Support the **evaluation** of software maintenance tasks
 - Textual description of maintenance task
 - Changed methods (gold sets)
 - Execution traces



Our Datasets...

- Have already been evaluated in research papers:
 - Feature location
 - [ICSE'13][EMSE'13][EMSE'12][WCRE'12][TR'12][ICPC'11]
 - Change impact analysis
 - [ICSE'12]
 - Developer recommendation
 - [ICSM'12]
 - Traceability link recovery
 - [TSE'12]



Our Datasets...

+

Tools

<http://www.cs.wm.edu/semeru/data/msr13/>

Choose systems...

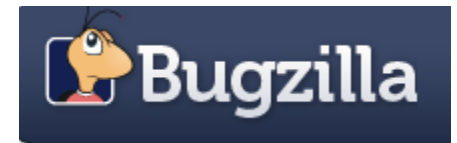
Choose systems...



Choose systems...



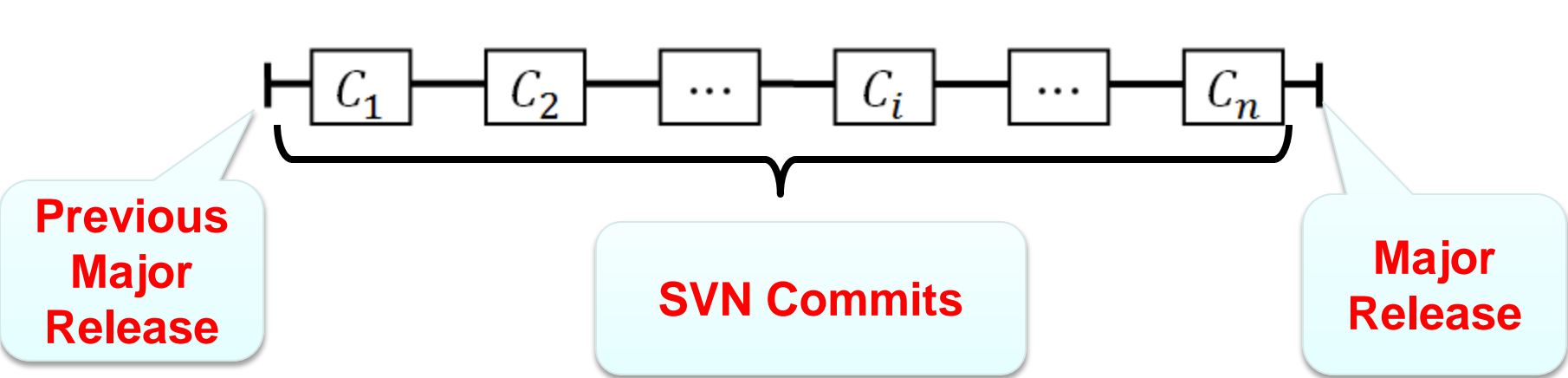
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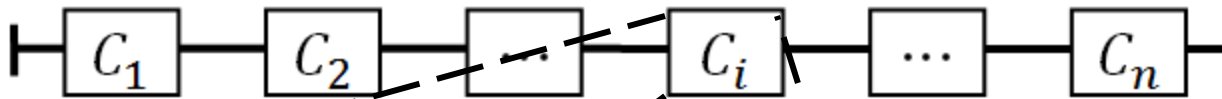


Choose systems...



Allows to collect feature/bug specific execution traces





Jump to revision: 

Author: shlomy

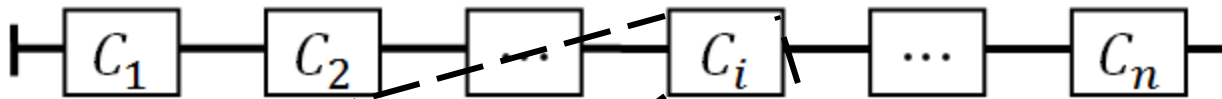
Date: Wed Apr 8 12:46:23 2009 UTC (*4 years, 1 month ago*)

Changed paths: 2

Log Message: Fixed bug #1593576: Autoindenting should copy exact whitespaces.

Changed paths:

Path	Details
 jEdit/trunk/org/gjt/sp/jedit/buffer/JEditBuffer.java	modified , text changed
 jEdit/trunk/org/gjt/sp/util/StandardUtilities.java	modified , text changed



Jump to revision: ↶ ↷



Author: shlomy

Date: Wed Apr 8 12:46:23 2009 UTC (4 years, 1 month ago)

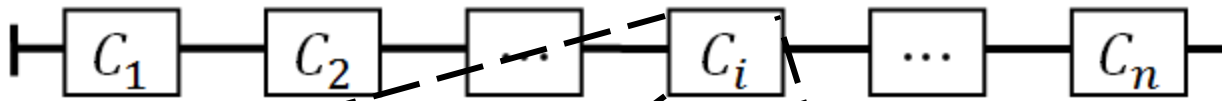
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Commit log message



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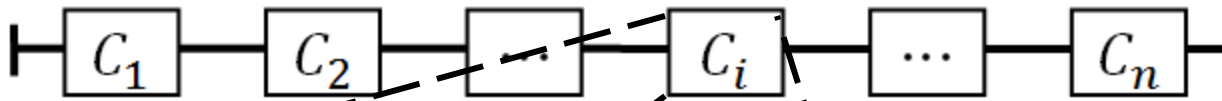
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Link to issue tracking system



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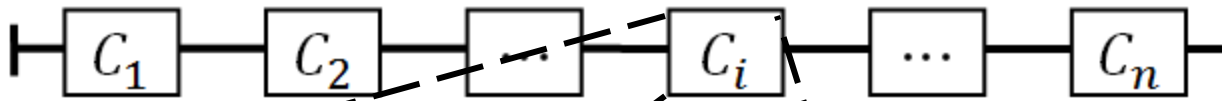
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Link to issue tracking system

Autoindenting should copy exact whitespaces - **ID: 1593576**

Details: If autoindenting copies the indentation of last line the indentation should be done the same way it was copied from, e. g. currently if Soft tabs are enabled, always spaces are inserted, even if the previous line is indented with literally tabs or tabs and spaces mixed. The whitespaces should simply be copied from the line that the auto-indenting is taken from.

Sorry if this is a dupe, but I have many bugs to post and am too lazy to check them all for dupes currently. :-)



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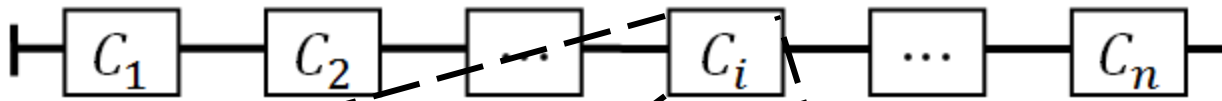
Link to issue tracking system

Manually verified for correct links

Autoindenting should copy exact whitespaces - ID: 1593576

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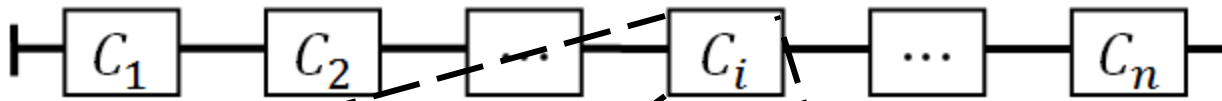
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Textual description of maintenance task (query)

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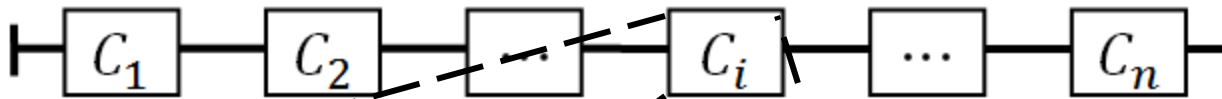
Description used to collect execution traces

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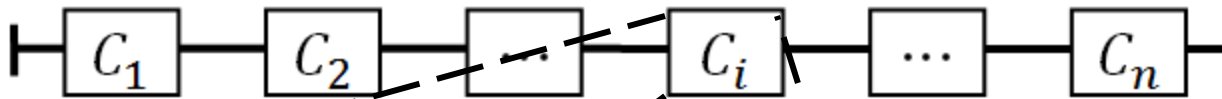
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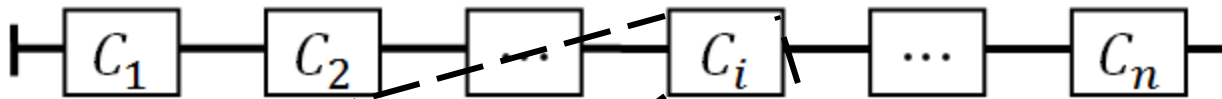
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Changed files



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Examine file changes

Previous version

```
/**
 * Indents the specified line.
 * @param lineIndex The line number to indent
 * @param canDecreaseIndent If true, the indent can be decreased as a
 * result of this. Set this to false for Tab key.
 * @return true If indentation took place, false otherwise.
 * @since jEdit 4.2pre2
 */
public boolean indentLine(int lineIndex, boolean canDecreaseIndent)
{
    int[] whitespaceChars = new int[1];
    int currentIndent = getCurrentIndentForLine(lineIndex,
        whitespaceChars);

    int idealIndent = getIdealIndentForLine(lineIndex);

    if(idealIndent == -1 || idealIndent == currentIndent
        || (!canDecreaseIndent && idealIndent < currentIndent))
        return false;

    // Do it
}
```

Current version

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    int currentIndent = getCurrentIndentForLine(lineIndex,
        whitespaceChars);

    int prevLineIndex = getPriorNonEmptyLine(lineIndex);
    int prevLineIndent = (prevLineIndex == -1) ? 0 :
        StandardUtilities.getLeadingWhiteSpaceWidth(getLineSegment(
            prevLineIndex), getTabSize());
    int idealIndent = getIdealIndentForLine(lineIndex, prevLineIndex,
        prevLineIndent);

    if (idealIndent == -1 ||
        (!canDecreaseIndent && idealIndent < currentIndent))
        return false;

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    int ...

    int ...

    if ...

    return false;

    // Do it
```

**Changed method
(gold set method)**



Our Datasets...





Our Datasets...



- 633 textual descriptions of issues
- 633 execution traces (manually collected)
- >4K gold set methods

Thank you!
Questions?

<http://www.cs.wm.edu/semeru/data/msr13/>



WILLIAM
& MARY



WICHITA STATE
UNIVERSITY