

Eclipse Code Recommenders



TECHNISCHE
UNIVERSITÄT
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What's in Juno and what will be in Kepler?

tw: @MarcelBruch

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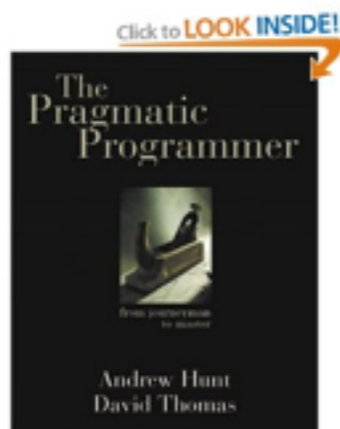
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[Andrew Hunt](#) (Author), [David Thomas](#) (Author)

★★★★☆ (150 customer reviews)

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Eclipse Code Recommenders

All Frameworks Search Code GO Cart Wish List

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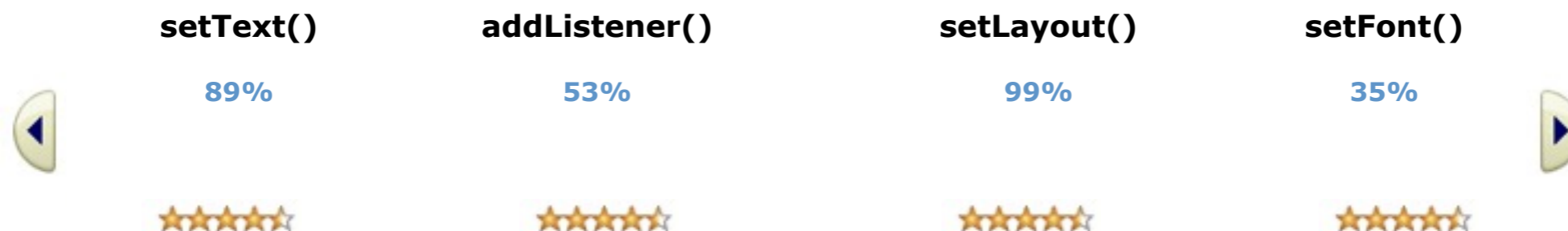
- demo.preferences
- SimpleFieldsPreferencePage
 - prefs : MyPreferenceStore
 - uiCalendarURL : Text
 - uiEnablePopupNotifications : Button
 - createContents(Composite) : Control
 - performOk() : boolean
 - createContainer(Composite) : Composite
 - createReminderGroup(Composite) : Group
 - init(IWorkbench) : void

```

@Override
protected Control createContents(Composite parent)
{
    Composite pageContainer = createContainer(parent);
    Group reminderGroup = createReminderGroup(pageContainer);
    Label label = new Label(reminderGroup, SWT.NONE);
    label.setText("Calendar URL:");
    uiCalendarURL = new Text(reminderGroup, SWT.BORDER);
}

```

Developers Who Called "new Text () " Also Called



What Do Developers Ultimately Override After Extending This Class?

100 % overwrote
PreferencePage.createContents()

96 % overwrote
PreferencePage.performOk()

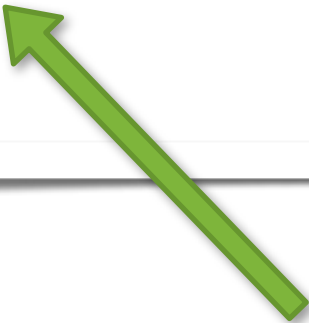
5 % overwrote
PreferencePage.performCancel()

“Other developers frequently ~~bought~~ used the following methods...”

INTELLIGENT CODE COMPLETION

Code Completion...

```
@Override  
protected Control createDialogArea(final Composite parent) {  
    Composite container = (Composite) super.createDialogArea(parent);  
  
    swtTextWidget = new Text(container, SWT.BORDER);  
    swtTextWidget.|  
    return container;  
}
```



**What does a developer need, i.e.,
which methods should the code completion present to him?**

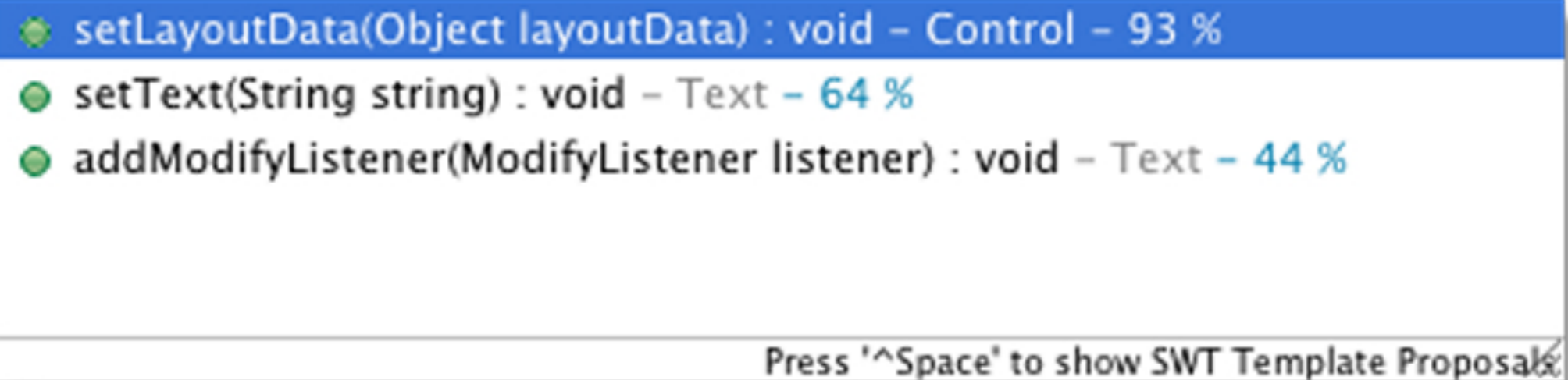
view : NSView - Control	getDoubleClickEnabled() : boolean - Text	moveAbove(Control control) : void - Control	setData(Object data) : void - Widget
addControlListener(ControlListener listener)	getDragDetect() : boolean - Control	moveBelow(Control control) : void - Control	setData(String key, Object value) : void - Widget
addDisposeListener(DisposeListener listener)	getEchoChar() : char - Text	notify() : void - Object	setDoubleClickEnabled(boolean doubleClickEnabled) : void - Control
addDragDetectListener(DragDetectListener listener)	getEditable() : boolean - Text	notifyAll() : void - Object	setDragDetect(boolean dragDetect) : void - Control
addFocusListener(FocusListener listener)	getEnabled() : boolean - Control	notifyListeners(int eventType, Event event)	setEchoChar(char echo) : void - Text
addHelpListener(HelpListener listener) : void	getFont() : Font - Control	pack() : void - Control	setEditable(boolean editable) : void - Text
addKeyListener(KeyListener listener) : void	getForeground() : Color - Control	pack(boolean changed) : void - Control	setEnabled(boolean enabled) : void - Control
addListener(int eventType, Listener listener)	getHorizontalBar() : ScrollBar - Scrollable	paste() : void - Text	setFocus() : boolean - Control
addMenuDetectListener(MenuDetectListener listener)	getLayoutData() : Object - Control	print(GC gc) : boolean - Control	setFont(Font font) : void - Control
addModifyListener(ModifyListener listener)	getLineCount() : int - Text	redraw() : void - Control	setForeground(Color color) : void - Control
addMouseListener(MouseListener listener)	getLineDelimiter() : String - Text	redraw(int x, int y, int width, int height, boolean redraw) : void - Control	setLayoutData(Object layoutData) : void - Control
addMouseMoveListener(MouseMoveListener listener)	getLineHeight() : int - Text	removeControlListener(ControlListener listener)	setLocation(Point location) : void - Control
addMouseTrackListener(MouseTrackListener listener)	getListeners(int eventType) : Listener[] - Control	removeDisposeListener(DisposeListener listener)	setLocation(int x, int y) : void - Control
addMouseWheelListener(MouseWheelListener listener)	getLocation() : Point - Control	removeDragDetectListener(DragDetectListener listener)	setMenu(Menu menu) : void - Control
addPaintListener(PaintListener listener) : void	getMenu() : Menu - Control	removeFocusListener(FocusListener listener)	setMessage(String message) : void - Text
addSelectionListener(SelectionListener listener)	getMessage() : String - Text	removeHelpListener(HelpListener listener)	setOrientation(int orientation) : void - Text
addTraverseListener(TraverseListener listener)	getMonitor() : Monitor - Control	removeKeyListener(KeyListener listener) : void	setParent(Composite parent) : boolean - Control
addVerifyListener(VerifyListener listener)	getOrientation() : int - Text	removeListener(int eventType, Listener listener)	setRedraw(boolean redraw) : void - Control
append(String string) : void - Text	getParent() : Composite - Control	removeMenuDetectListener(MenuDetectListener listener)	setRegion(Region region) : void - Control
clearSelection() : void - Text	getRegion() : Region - Control	removeModifyListener(ModifyListener listener)	setSelection(int start) : void - Text
computeSize(int wHint, int hHint) : Point	getSelection() : Point - Text	removeMouseListener(MouseListener listener)	setSelection(Point selection) : void - Text
computeSize(int wHint, int hHint, boolean computeTrim) : Point	getSelectionCount() : int - Text	removeMouseMoveListener(MouseMoveListener listener)	setSelection(int start, int end) : void - Text
computeTrim(int x, int y, int width, int height) : Point	getSelectionText() : String - Text	removeMouseTrackListener(MouseTrackListener listener)	setSize(Point size) : void - Control
copy() : void - Text	getShell() : Shell - Control	removeMouseWheelListener(MouseWheelListener listener)	setSize(int width, int height) : void - Control
cut() : void - Text	getSize() : Point - Control	removePaintListener(PaintListener listener)	setTabs(int tabs) : void - Text
dispose() : void - Widget	getStyle() : int - Widget	removeSelectionListener(SelectionListener listener)	setText(String string) : void - Text
dragDetect(Event event) : boolean - Control	getTabs() : int - Text	removeTraverseListener(TraverseListener listener)	setTextLimit(int limit) : void - Text
dragDetect(MouseEvent event) : boolean - Control	getText() : String - Text	removeVerifyListener(VerifyListener listener)	setToolTipText(String string) : void - Control
equals(Object obj) : boolean - Object	getText(int start, int end) : String - Text	reskin(int flags) : void - Widget	setTopIndex(int index) : void - Text
forceFocus() : boolean - Control	getTextLimit() : int - Text	selectAll() : void - Text	setVisible(boolean visible) : void - Control
getAccessible() : Accessible - Control	getToolTipText() : String - Control	setBackground(Color color) : void - Control	showSelection() : void - Text
getBackground() : Color - Control	getTopIndex() : int - Text	setBackgroundImage(Image image) : void - Control	toControl(Point point) : Point - Control
setBackgroundImage(Image image) : void - Control	getTopPixel() : int - Text	setBounds(Rectangle rect) : void - Control	toControl(int x, int y) : Point - Control
getBorderWidth() : int - Control	getVerticalBar() : ScrollBar - Scrollable	setBounds(int x, int y, int width, int height) : void - Control	toDisplay(Point point) : Point - Control
getBounds() : Rectangle - Control	getVisible() : boolean - Control	setCapture(boolean capture) : void - Control	toDisplay(int x, int y) : Point - Control
getCaretLineNumber() : int - Text	hashCode() : int - Object	setCursor(Cursor cursor) : void - Control	toString() : String - Widget
getCaretLocation() : Point - Text	insert(String string) : void - Text	setData(Object data) : void - Widget	traverse(int traversal) : boolean - Control
getCaretPosition() : int - Text	internal_dispose_GC(long context, GCData data) : void - Control	setData(String key, Object value) : void - Widget	traverse(int traversal, Event event) : boolean - Control
getCharCount() : int - Text	isDisposed() : boolean - Widget	setDoubleClickEnabled(boolean doubleClickEnabled) : void - Control	traverse(int traversal, KeyEvent event) : boolean - Control
getClass() : Class<?> - Object	isEnabled() : boolean - Control	setDragDetect(boolean dragDetect) : void - Control	update() : void - Control
getClientArea() : Rectangle - Scrollable	isFocusControl() : boolean - Control	setEchoChar(char echo) : void - Text	wait() : void - Object
getCursor() : Cursor - Control	isListening(int eventType) : boolean - Widget	setEditable(boolean editable) : void - Text	wait(long timeout) : void - Object
getData() : Object - Widget	isReparentable() : boolean - Control	setEnabled(boolean enabled) : void - Control	wait(long timeout, int nanos) : void - Object
getData(String key) : Object - Widget	isVisible() : boolean - Control	setFocus() : boolean - Control	DELIMITER : String - Text
getDisplay() : Display - Widget		setFont(Font font) : void - Control	LIMIT : int - Text

view : NSView - Control
addControlListener(ControlListener listener)
addDisposeListener(DisposeListener listener)
addDragDetectListener(DragDetectListener listener)
addFocusListener(FocusListener listener)
addKeyListener(KeyListener listener) : void
addListener(int eventType, Listener listener)
addMenuDetectListener(MenuDetectListener listener)
addModifyListener(ModifyListener listener)
addMouseListener(MouseListener listener)
addMouseMoveListener(MouseMoveListener listener)
addMouseTrackListener(MouseTrackListener listener)
addMouseWheelListener(MouseWheelListener listener)
addPaintListener(PaintListener listener) : void
addSelectionListener(SelectionListener listener)
addTraverseListener(TraverseListener listener)
addVerifyListener(VerifyListener listener)
append(String string) : void - Text
clearSelection() : void - Text
computeSize(int wHint, int hHint) : Point
computeSize(int wHint, int hHint, boolean wrap) : Point
computeTrim(int x, int y, int width, int height) : Point
copy() : void - Text
cut() : void - Text
dispose() : void - Control
dragDetect() : boolean - Control
dragDetect(int x, int y) : boolean - Control
equals(Object obj) : boolean - Control
forceFocus() : void - Control
getAccess() : Access - Control
getBackground() : Color - Control
getBackgroundImage() : Image - Control
getBorderWidth() : int - Control
getBounds() : Rectangle - Control
getCaretLineNumber() : int - Text
getCaretLocation() : Point - Text
getCaretPosition() : int - Text
getCharCount() : int - Text
getClass() : Class<?> - Object
getClientArea() : Rectangle - Scrollable
getCursor() : Cursor - Control
getData() : Object - Widget
getData(String key) : Object - Widget
getDisplay() : Display - Widget
getDoubleClickEnabled() : boolean - Text
getDragDetect() : boolean - Control
getEchoChar() : char - Text
getEditable() : boolean - Text
getEnabled() : boolean - Control
getFont() : Font - Control
getForeground() : Color - Control
getHorizontalBar() : ScrollBar - Scrollable
getLayoutData() : Object - Control
getLineCount() : int - Text
getLineDelimiter() : String - Text
getLineHeight() : int - Text
getListeners(int eventType) : Listener[] - Control
getLocation() : Point - Control
getMenu() : Menu - Control
getMessage() : String - Text
getMonitor() : Monitor - Control
getOrientation() : int - Text
getParent() : Composite - Control
getRegion() : Region - Control
getSelection() : Point - Text
getSelectionCount() : int - Text
getSelectionText() : String - Text
getShell() : Shell - Control
moveAbove(Control control) : void - Control
moveBelow(Control control) : void - Control
notify() : void - Object
notifyAll() : void - Object
notifyListeners(int eventType, Event event) : void - Control
pack() : void - Control
pack(boolean changed) : void - Control
paste() : void - Text
print(GC gc) : boolean - Control
redraw() : void - Control
redraw(int x, int y, int width, int height, boolean force) : void - Control
removeControlListener(ControlListener listener) : void - Control
removeDisposeListener(DisposeListener listener) : void - Control
removeDragDetectListener(DragDetectListener listener) : void - Control
removeFocusListener(FocusListener listener) : void - Control
removeHelpListener(HelpListener listener) : void - Control
removeKeyListener(KeyListener listener) : void - Control
removeListener(int eventType, Listener listener) : void - Control
removeMenuDetectListener(MenuDetectListener listener) : void - Control
removeModifyListener(ModifyListener listener) : void - Control
removeMouseListener(MouseListener listener) : void - Control
removeMouseMoveListener(MouseMoveListener listener) : void - Control
removeMouseTrackListener(MouseTrackListener listener) : void - Control
removeMouseWheelListener(MouseWheelListener listener) : void - Control
setData(Object data) : void - Widget
setData(String key, Object value) : void - Widget
setDoubleClickEnabled(boolean doubleClickEnabled) : void - Text
setDragDetect(boolean dragDetect) : void - Control
setEchoChar(char echo) : void - Text
setEditable(boolean editable) : void - Text
setEnabled(boolean enabled) : void - Control
setFocus() : boolean - Control
setFont(Font font) : void - Control
setForeground(Color color) : void - Control
setLayoutData(Object layoutData) : void - Control
setLocation(Point location) : void - Control
setLocation(int x, int y) : void - Control
setMenu(Menu menu) : void - Control
setMessage(String message) : void - Text
setOrientation(int orientation) : void - Text
setParent(Composite parent) : boolean - Control
setRedraw(boolean redraw) : void - Control
setRegion(Region region) : void - Control
setSelection(int start) : void - Text
setSelection(Point selection) : void - Text
setSelection(int start, int end) : void - Text
setSize(Point size) : void - Control
setSize(int width, int height) : void - Control

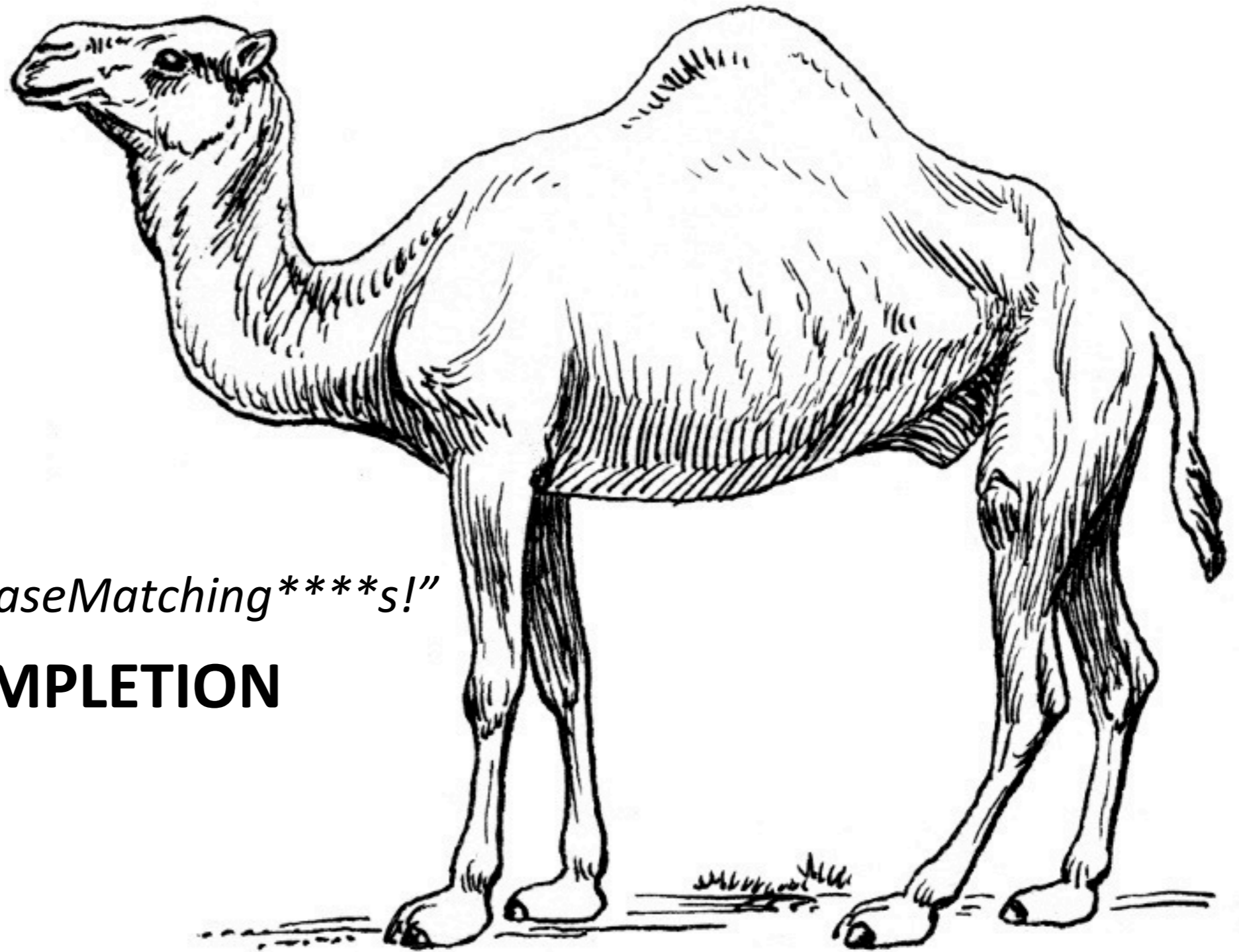
All 164 Methods of Text ?

getBackground() : Color - Control
getBackgroundImage() : Image - Control
getBorderWidth() : int - Control
getBounds() : Rectangle - Control
getCaretLineNumber() : int - Text
getCaretLocation() : Point - Text
getCaretPosition() : int - Text
getCharCount() : int - Text
getClass() : Class<?> - Object
getClientArea() : Rectangle - Scrollable
getCursor() : Cursor - Control
getData() : Object - Widget
getData(String key) : Object - Widget
getDisplay() : Display - Widget
getTopIndex() : int - Text
getTopPixel() : int - Text
getVerticalBar() : ScrollBar - Scrollable
getVisible() : boolean - Control
hashCode() : int - Object
insert(String string) : void - Text
internal_dispose_GC(long context, GCData data) : void - Control
internal_new_GC(GCData data) : long - Control
isDisposed() : boolean - Widget
isEnabled() : boolean - Control
isFocusControl() : boolean - Control
isListening(int eventType) : boolean - Control
isReparentable() : boolean - Control
isVisible() : boolean - Control
setBackgroundImage(Image image) : void - Control
setBounds(Rectangle rect) : void - Control
setBounds(int x, int y, int width, int height) : void - Control
setCapture(boolean capture) : void - Control
setCursor(Cursor cursor) : void - Control
setData(Object data) : void - Widget
setData(String key, Object value) : void - Widget
setDoubleClickEnabled(boolean doubleClickEnabled) : void - Text
setDragDetect(boolean dragDetect) : void - Control
setEchoChar(char echo) : void - Text
setEditable(boolean editable) : void - Text
setEnabled(boolean enabled) : void - Control
setFocus() : boolean - Control
setFont(Font font) : void - Control
toControl(Point point) : Point - Control
toControl(int x, int y) : Point - Control
toDisplay(Point point) : Point - Control
toDisplay(int x, int y) : Point - Control
toString() : String - Widget
traverse(int traversal) : boolean - Control
traverse(int traversal, Event event) : boolean - Control
traverse(int traversal, KeyEvent event) : boolean - Control
update() : void - Control
wait() : void - Object
wait(long timeout) : void - Object
wait(long timeout, int nanos) : void - Object
DELIMITER : String - Text
LIMIT : int - Text

Intelligent Call Completion



... what the developer actually needed.



*“BecausePureCamelCaseMatching****s!”*

SUBWORDS COMPLETION

Clean Code encourages you to use speaking method names. But sometimes....

```
public void demo(AST ast) {
```

```
    ast.newAnnotationTypeMemberDeclaration();
```

```
}
```

● newAnnotationTypeDeclaration() : AnnotationTypeDeclaration - AST

● newAnnotationTypeMemberDeclaration() : AnnotationTypeMemberDeclaration - AST

Press '^Space' to show Code Recommenders Proposals

Brand New Section: News Round-up,
Feature of the Month, and more!

Java™TECH

JOURNAL

For the Eclipse Community, the fourth Wednesday of June is the most auspicious day of the year: It's Juno Day! A whopping 72 projects form part of this year's release train – the most in any Eclipse annual release so far! After several milestones and many, many hours

of testing, they'll bring forth complete versions of their lovingly-crafted projects for the entire Eclipse Foundation. JTJ joins in the celebrations by portraying some of the new features and projects – Happy Juno Day, Eclipse!

#19

Eclipse Juno

Eclipse 4

Powered by Best Practices

Code Recommenders

Leveraging Collective
Programming Knowledge

M2M at Eclipse

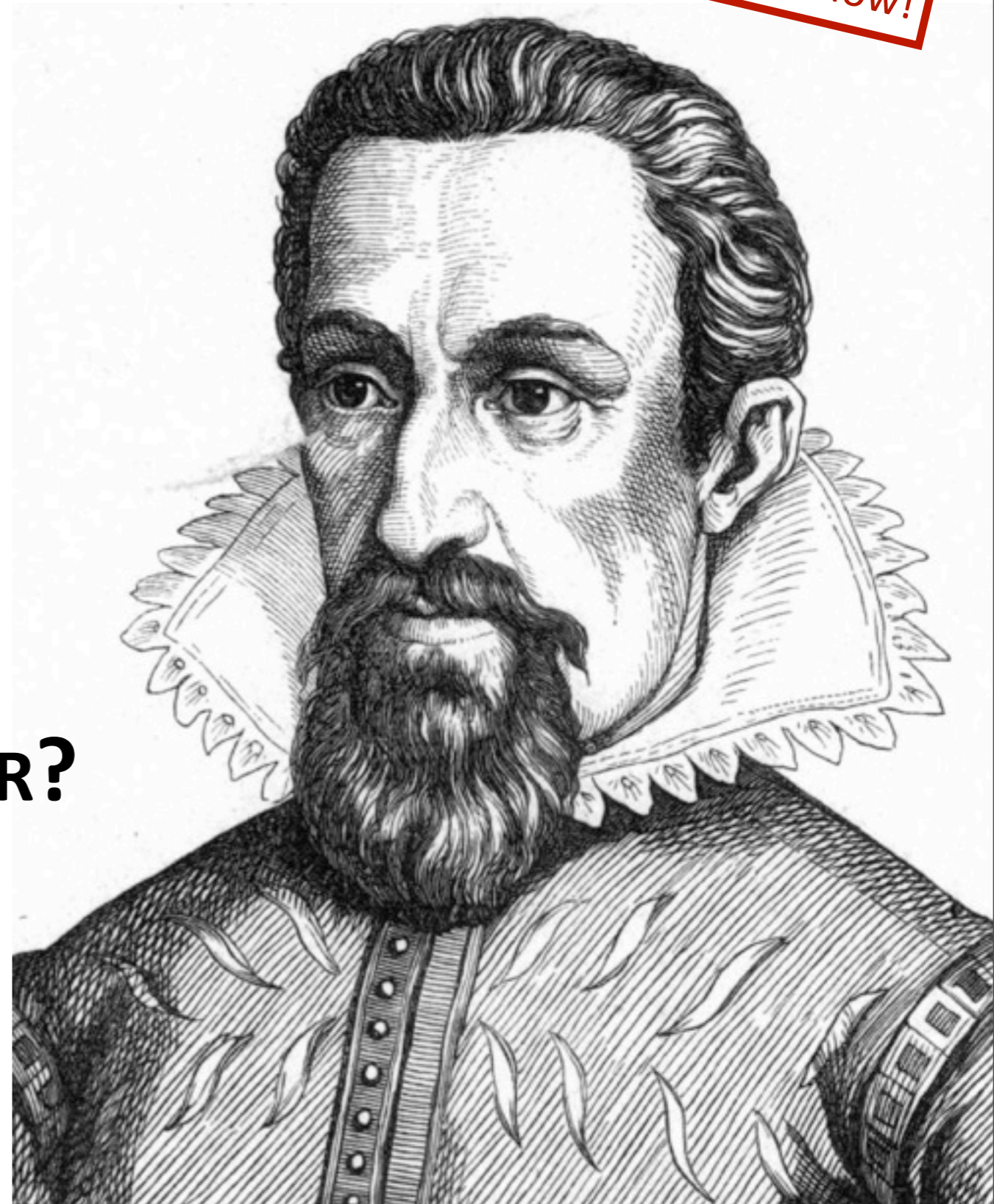
Connecting Machines



Attention: We are leaving "what's there" now!

"Rethinking your tool suite. Again."

WHAT'S PLANNED FOR KEPLER?





Precise

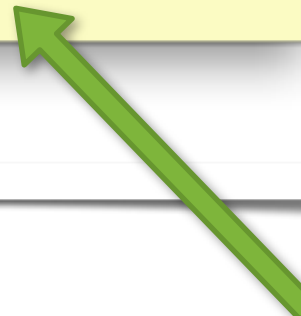
“Oh SWT - your style bits...”

RETHINKING ARGUMENT GUESSING

Oh SWT, your style bits...

```
@Override  
protected Control createControl(final Composite parent) {  
  
    textWidget = new Text(toolbar, SWT.BORDER);  
    textWidget.addListener(eventType, listener)  
}
```

eventType
0



Which event type, i.e., which int constant defined somewhere, should he insert here? 0?

ABORT : int	Collapse : int	CURSOR_HAN	ERROR : int	F10 : int	ICON : int	KEYPAD_4 : i	MouseExit : i	PAUSE : int	TAB : char
Activate : int	COLOR_BLACK	CURSOR_HELP	ERROR_CANNOT	F11 : int	ICON_CANCEL	KEYPAD_5 : i	MouseHorizontal	PAUSED : int	TIME : int
ALL : int	COLOR_BLUE	CURSOR_IBEAM	ERROR_CANNOT	F12 : int	ICON_ERROR	KEYPAD_6 : i	MouseHover	PHONETIC : i	TITLE : int
ALPHA : int	COLOR_CYAN	CURSOR_NO	ERROR_CANNOT	F13 : int	ICON_INFORMATION	KEYPAD_7 : i	MouseMove	POP_UP : int	TOGGLE : int
ALT : int	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F14 : int	ICON_QUESTION	KEYPAD_8 : i	MouseUp	PRIMARY_MOUSE	TOOL : int
APPLICATION	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F15 : int	ICON_SEARCH	KEYPAD_9 : i	MouseVertical	PRINT_SCREEN	TOP : int
Arm : int	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F16 : int	ICON_WARNING	KEYPAD_ADD	MouseWheel	PUSH : int	Touch : int
ARROW : int	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F17 : int	ICON_WORKING	KEYPAD_CR	Move : int	RADIO : int	TOUCHSTATE
ARROW_DOWN	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F18 : int	Iconify : int	KEYPAD_DEC	MOVEMENT_CLICK	READ_ONLY	TOUCHSTATE
ARROW_LEFT	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F19 : int	ID_ABOUT : int	KEYPAD_DIV	MOVEMENT_CLICK	Resize : int	TOUCHSTATE
ARROW_RIGHT	COLOR_DARK	CURSOR_SIZE	ERROR_CANNOT	F2 : int	ID_HIDE : int	KEYPAD_EQUAL	MOVEMENT_CLICK	RESIZE : int	TRAIL : int
ARROW_UP	COLOR_GRAY	CURSOR_SIZE	ERROR_CANNOT	F20 : int	ID_HIDE_OTHER	KEYPAD_MUL	MOVEMENT_CLICK	RETRY : int	TRANSPARENT
BACKGROUND	COLOR_GREEN	CURSOR_SIZE	ERROR_CANNOT	F3 : int	ID_PREFERENCE	KEYPAD_SUB	MOVEMENT_CLICK	RIGHT : int	TRANSPARENT
BALLOON : ir	COLOR_INFO	CURSOR_SIZE	ERROR_DEVICE	F4 : int	ID_QUIT : int	KeyUp : int	MOZILLA : int	RIGHT_TO_LEFT	TRANSPARENT
BAR : int	COLOR_INFO	CURSOR_SIZE	ERROR_FAILED	F5 : int	ID_SHOW_ALL	LAST_LINE_SELECTED	MULTI : int	ROMAN : int	TRANSPARENT
BEGINNING : int	COLOR_LIST	CURSOR_SIZE	ERROR_FAILED	F6 : int	IGNORE : int	LEAD : int	NATIVE : int	SAVE : int	TRANSPARENT
BITMAP : int	COLOR_LIST	CURSOR_SIZE	ERROR_FAILED	F7 : int	IMAGE_BITMAP	LEFT : int	NO : int	SCROLL_LINE	Traverse : int
BOLD : int	COLOR_LIST	CURSOR_UP	ERROR_FAILED	F8 : int	IMAGE_BITMAP	LEFT_TO_RIGHT	NO_BACKGROUND	SCROLL_LOCATION	TRAVERSE_ALL
BORDER : int	COLOR_LIST	CURSOR_WAIT	ERROR_FUNCTION	F9 : int	IMAGE_COPY	LF : char	NO_FOCUS	SCROLL_PAGE	TRAVERSE_ALL
BORDER_DASH	COLOR_MAG	DATE : int	ERROR_INVALID	FILL : int	IMAGE_DISABLE	LINE_CUSTOM	NO_MERGE_PARENT	SCROLLBAR	TRAVERSE_ESCAPE
BORDER_DOT	COLOR_RED	DBC : int	ERROR_INVALID	FILL_EVEN_ODD	IMAGE_GIF	LINE_DASH	NO_RADIO_GROUP	SEARCH : int	TRAVERSE_M
BORDER_SOLID	COLOR_TITLE	Deactivate : int	ERROR_INVALID	FILL_WINDING	IMAGE_GRAY	LINE_DASHDOT	NO_REDRAW	Segments : ir	TRAVERSE_NONE
BOTTOM : int	COLOR_TITLE	DEFAULT : int	ERROR_INVALID	FLAT : int	IMAGE_ICO	LINE_DASHDOT	NO_SCROLL	SELECTED : ir	TRAVERSE_PARENT
BREAK : int	COLOR_TITLE	DefaultSelect	ERROR_INVALID	FOCUSED : int	IMAGE_JPEG	LINE_DOT	NO_TRIM : int	Selection : int	TRAVERSE_PARENT
BS : char	COLOR_TITLE	DEFER : int	ERROR_INVALID	FocusIn : int	IMAGE_OS2	LINE_SOLID	None : int	SEPARATOR	TRAVERSE_RE
BUTTON1 : ir	COLOR_TITLE	Deiconify : int	ERROR_INVALID	FocusOut : int	IMAGE_PNG	LONG : int	NONE : int	SEPARATOR_	TRAVERSE_TAB
BUTTON2 : ir	COLOR_TITLE	DEL : char	ERROR_IO	FOREGROUND	IMAGE_TIFF	LOW : int	NORMAL : int	SetData : int	TRAVERSE_TAB
BUTTON3 : ir	COLOR_WHITE	DELIMITER_SINGLE	ERROR_ITEM	FULL_SELECT	IMAGE_UNDE	MAX : int	NULL : int	Settings : int	UNDERLINE_
BUTTON4 : ir	COLOR_WHITE	DIALOG_TRIM	ERROR_ITEM	Gesture : int	ImageComposit	MeasureItem	NUM_LOCK	SHADOW_ETC	UNDERLINE_
BUTTON5 : ir	COLOR_WHITE	Dispose : int	ERROR_MENU	GESTURE_BEGIN	INDETERMINA	MEDIUM : int	OFF : int	SHADOW_ETC	UNDERLINE_
BUTTON_MASTER	COLOR_WHITE	DM_FILL_BACKGROUND	ERROR_MENU	GESTURE_END	INHERIT_DEFAULT	MENU : int	OK : int	SHADOW_IN	UNDERLINE_
CALENDAR : int	COLOR_WHITE	DM_FILL_NONE	ERROR_MENU	GESTURE_MOVE	INHERIT_FORCE	MENU_KEYBO	ON : int	SHADOW_NONE	UNDERLINE_
CANCEL : int	COLOR_WHITE	DM_FILL_PREFERRED	ERROR_MENU	GESTURE_POINTER	INSERT : int	MENU_MOUSE	ON_TOP : int	SHADOW_OUT	UP : int
CAP_FLAT : ir	COLOR_WHITE	DM_UNSPECIFIED	ERROR_NO_CHILD	GESTURE_ROTATE	ITALIC : int	MenuDetect	OPEN : int	SHEET : int	V_SCROLL : ir
CAP_ROUND	COLOR_WHITE	DOUBLE_BUFFER	ERROR_NO_H	GESTURE_SCROLL	ITALIC	MIN : int	OpenDocument	SHELL_TRIM	Verify : int
CAP_SQUARE	COLOR_YELLOW	DOWN : int	ERROR_NO_M	H_SCROLL : int	JOIN_BEVEL	MIRRORED : int	OrientationC	SHIFT : int	VERTICAL : ir
CAPS_LOCK : int	COMMAND :	DRAW : int	ERROR_NOT_	HardKeyDown	JOIN_MITER	MOD1 : int	PAGE_DOWN	SHORT : int	VIRTUAL : int
CASCADE : ir	COMPOSITIO	DragDetect	ERROR_NULL	HardKeyUp	JOIN_ROUND	MOD2 : int	PAGE_UP : int	Show : int	WEBKIT : int
CENTER : int	COMPOSITIO	DRAW_DELIMIT	ERROR_THRE	Help : int	KEY_MASK : i	MOD3 : int	Paint : int	SIMPLE : int	WRAP : int
CHANGED : ir	COMPOSITIO	DRAW_MNEMON	ERROR_UNSP	HELP : int	KEYCODE_BIT	MOD4 : int	PaintItem : int	SINGLE : int	YES : int
CHECK : int	CONTROL : ir	DRAW_TAB	ERROR_UNSU	Hide : int	KEYPAD : int	MODELESS : i	PASSWORD :	Skin : int	error(int code
class : Class	CR : char	DRAW_TRANS	ERROR_UNSU	HIDE_SELECT	KEYPAD_0 : i	MODIFIER_M	PATH_CLOSE	SKIN_CLASS :	error(int code
CLIP_CHILDREN	CTRL : int	DROP_DOWN	ERROR_WIDG	HIGH : int	KEYPAD_1 : i	Modify : int	PATH_CUBIC	SKIN_ID : Stri	error(int code
CLIP_SIBLING	CURSOR_APP	EMBEDDED :	ESC : char	HORIZONTAL	KEYPAD_2 : i	MouseDown	PATH_LINE_T	SMOOTH : int	getMessage(S
Close : int	CURSOR_ARROW	END : int	Expand : int	HOT : int	KEYPAD_3 : i	MouseEnter	PATH_MOVE	SPACE : char	getMessage(S
CLOSE : int	CURSOR_CROSS	EraserItem : ir	F1 : int				PATH_QUAD	SYSTEM_MODAL	getPlatform()

ABORT : int	Collapse : int	CURSOR_HAN	ERROR : int	F10 : int	ICON : int	KEYPAD_4 : i	MouseExit : i	PAUSE : int	TAB : char
Activate : int	COLOR_BLA	CURSOR_HEL	ERROR_CANN	F11 : int	ICON_CANCE	KEYPAD_5 : i	MouseHorizo	PAUSED : int	TIME : int
ALL : int	COLOR_BUE	CURSOR_IBE	ERROR_CANN	F12 : int	ICON_ERROR	KEYPAD_6 : i	MouseHover	PHONETIC : i	TITLE : int
ALPHA : int	COLOR_CYA	CURSOR_NO	ERROR_CANN	F13 : int	ICON_INFORM	KEYPAD_7 : i	MouseMove	POP_UP : int	TOGGLE : int
ALT : int	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F14 : int	ICON_QUEST	KEYPAD_8 : i	MouseUp : int	PRIMARY_MO	TOOL : int
APPLICATION	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F15 : int	ICON_SEARCH	KEYPAD_9 : i	MouseVertic	PRINT_SCRE	TOP : int
Arm : int	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F16 : int	ICON_WARNI	KEYPAD_ADD	MouseWheel	PUSH : int	Touch : int
ARROW : int	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F17 : int	ICON_WORKI	KEYPAD_CR :	Move : int	RADIO : int	TOUCHSTATE
ARROW_DOW	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F18 : int	Iconify : int	KEYPAD_DEC	MOVEMENT_	READ_ONLY :	TOUCHSTATE
ARROW_LEFT	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F19 : int	ID_ABOUT : i	KEYPAD_DIVI	MOVEMENT_	Resize : int	TOUCHSTATE
ARROW_RIGH	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F2 : int	ID_HIDE : int	KEYPAD_EQU	MOVEMENT_	RESIZE : int	TRAIL : int
ARROW_UP :	COLOR_GRA	CURSOR_SIZE	ERROR_CANN	F20 : int	ID_HIDE_OT	KEYPAD_MUL	MOVEMENT_	RETRY : int	TRANSPAREN
BACKGROUN	COLOR_GREE	CURSOR_SIZE	ERROR_CANN	F3 : int	ID_PREFEREN	KEYPAD_SUB	MOVEMENT_	RIGHT : int	TRANSPAREN
BALLOON : ir	COLOR_INFO	CURSOR_SIZE	ERROR_DEVIC	F4 : int	ID_QUIT : int	KeyUp : int	MOZILLA : int	RIGHT_TO_LE	TRANSPAREN
BAR : int	COLOR_INFO	CURSOR_SIZE	ERROR_FAILE	F5 : int	ID_SHOW_AL	LAST_LINE_ST	MULTI : int	ROMAN : int	TRANSPAREN
BEGINNING :	COLOR_LIST_	CURSOR_SIZE	ERROR_FAILE	F6 : int	IGNORE : int	LEAD : int	NATIVE : int	SAVE : int	TRANSPAREN
BITMAP : int	COLOR_LIST_	CURSOR_SIZE	ERROR_FAILE	F7 : int	IMAGE_BMP :	LEFT : int	NO : int	SCROLL_LINE	Traverse : int
BOLD : int	COLOR_LIST_	CURSOR_UPA	ERROR_FUNC	F8 : int	IMAGE_BMP_I	LEFT_TO_RIG	NO_BACKGRO	SCROLL_LOC	TRAVERSE_AI
BORDER : int	COLOR_LIST_	CURSOR_WAI	ERROR_GRAP	F9 : int	IMAGE_COPY	LF : char	NO_FOCUS :	SCROLL_PAG	TRAVERSE_AI
BORDER_DAS	COLOR_MAG	DATE : int	ERROR_INVAI	FILL : int	IMAGE_DISAE	LINE_CUSTOM	NO_MERGE_P	SCROLLBAR_	TRAVERSE_ES
BORDER_DOT	COLOR_RED	DBC : int	ERROR_INVAI	FILL_EVEN_O	IMAGE_GIF : i	LINE_DASH :	NO_RADIO_G	SEARCH : int	TRAVERSE_M
BORDER_SOL	COLOR_TITL	Deactivate : i	ERROR_INVAI	FILL_WINDIN	IMAGE_GRAY	LINE_DASHD	NO_REDRAW	Segments : ir	TRAVERSE_N
BOTTOM : int	COLOR_TITL	DEFAULT : in	ERROR_INVAI	FLAT : int	IMAGE_ICO :	LINE_DASHD	NO_SCROLL :	SELECTED : ir	TRAVERSE_PA
BREAK : int	COLOR_TITL	DefaultSelect	ERROR_INVAI	FOCUSED : in	IMAGE_JPEG :	LINE_DOT : ir	NO_TRIM : in	Selection : in	TRAVERSE_PA
BS : char	COLOR_TITL	DEFER : int	ERROR_INVAI	FocusIn : int	IMAGE_OS2_I	LONG : int	NO_TRIM : in	SEPARATOR :	TRAVERSE_RE
BUTTON1 : ir	COLOR_TITL	Deiconify : in	ERROR_INVAI	FocusOut : in	IMAGE_PNG :	LOW : int	NONE : int	SEPARATOR_	TRAVERSE_TA
BUTTON2 : ir	COLOR_TITL	DEL : char	ERROR_IO : ir	FOREGROUND	IMAGE_TIFF :	MAX : int	NORMAL : int	SetData : int	TRAVERSE_TA
BUTTON3 : ir	COLOR_WHIT	DELIMITER_S	ERROR_ITEM_	FULL_SELECT	IMAGE_UNDE	MEASUREITEM	NULL : int	Settings : int	UNDERLINE_I
BUTTON4 : ir	COLOR_WIDC	DIALOG_TRIM	ERROR_ITEM_	Gesture : int	IME_COMPOSIT	MEDIUM : int	NUM_LOCK :	SHADOW_ETC	UNDERLINE_E
BUTTON5 : ir	COLOR_WIDC	Dispose : int	ERROR_MENU	GESTURE_BEC	INDETERMINA	MENU : int	OFF : int	SHADOW_ETC	UNDERLINE_I
BUTTON_MA	COLOR_WIDC	DM_FILL_BAC	ERROR_MENU	GESTURE_ENI	INHERIT_DEF	MENU_KEYRC	OK : int	SHADOW_IN	UNDERLINE_S
CALENDAR :	COLOR_WIDC	DM_FILL_NO	ERROR_MENU	GESTURE_MA	INHERIT_FOP		ON : int	SHADOW_NO	UNDERLINE_S

SWT.<^Space>? 454

ABORT : int	Collapse : int	CURSOR_HAN	ERROR : int	F10 : int	ICON : int	KEYPAD_4 : i	MouseExit : i	PAUSE : int	TAB : char
Activate : int	COLOR_BLA	CURSOR_HEL	ERROR_CANN	F11 : int	ICON_CANCE	KEYPAD_5 : i	MouseHorizo	PAUSED : int	TIME : int
ALL : int	COLOR_BLUE	CURSOR_IBE	ERROR_CANN	F12 : int	ICON_ERROR	KEYPAD_6 : i	MouseHover	PHONETIC : i	TITLE : int
ALPHA : int	COLOR_CYAN	CURSOR_NO	ERROR_CANN	F13 : int	ICON_INFORM	KEYPAD_7 : i	MouseMove	POP_UP : int	TOGGLE : int
ALT : int	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F14 : int	ICON_QUEST	KEYPAD_8 : i	MouseUp : int	PRIMARY_MO	TOOL : int
APPLICATION	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F15 : int	ICON_SEARCH	KEYPAD_9 : i	MouseVertica	PRINT_SCRE	TOP : int
Arm : int	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F16 : int	ICON_WARNI	KEYPAD_ADD	MouseWheel	PUSH : int	Touch : int
ARROW : int	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F17 : int	ICON_WORKI	KEYPAD_CR :	Move : int	RADIO : int	TOUCHSTATE
ARROW_DOW	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F18 : int	Iconify : int	KEYPAD_DEC	MOVEMENT_	READ_ONLY :	TOUCHSTATE
ARROW_LEFT	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F19 : int	ID_ABOUT : i	KEYPAD_DIVI	MOVEMENT_	Resize : int	TOUCHSTATE
ARROW_RIGH	COLOR_DAR	CURSOR_SIZE	ERROR_CANN	F2 : int	ID_HIDE : int	KEYPAD_EQU	MOVEMENT_	RESIZE : int	TRAIL : int
ARROW_UP :	COLOR_GRAY	CURSOR_SIZE	ERROR_CANN	F20 : int	ID_HIDE_OT	KEYPAD_MUL	MOVEMENT_	RETRY : int	TRANSPAREN
BACKGROUN	COLOR_GREE	CURSOR_SIZE	ERROR_CANN	F3 : int	ID_PREFEREN	KEYPAD_SUB	MOVEMENT_	RIGHT : int	TRANSPAREN
BALLOON : ir	COLOR_INFO	CURSOR_SIZE	ERROR_DEVIC	F4 : int	ID_QUIT : int	KeyUp : int	MOZILLA : int	RIGHT_TO_LE	TRANSPAREN
BAR : int	COLOR_INFO	CURSOR_SIZE	ERROR_FAILE	F5 : int	ID_SHOW_AL	LAST_LINE_ST	MULTI : int	ROMAN : int	TRANSPAREN
BEGINNING :	COLOR_LIST_	CURSOR_SIZE	ERROR_FAILE	F6 : int	IGNORE : int	LEAD : int	NATIVE : int	SAVE : int	TRANSPAREN
BITMAP : int	COLOR_LIST_	CURSOR_SIZE	ERROR_FAILE	F7 : int	IMAGE_BMP :	LEFT : int	NO : int	SCROLL_LINE	Traverse : int
BOLD : int	COLOR_LIST_	CURSOR_UPA	ERROR_FUNC	F8 : int	IMAGE_BMP_I	LEFT_TO_RIG	NO_BACKGRO	SCROLL_LOC	TRAVERSE_AI
BORDER : int	COLOR_LIST_	CURSOR_WAI	ERROR_GRAP	F9 : int	IMAGE_COPY	LF : char	NO_FOCUS :	SCROLL_PAG	TRAVERSE_AI
BORDER_DAS	COLOR_MAG	DATE : int	ERROR_INVAI	FILL : int	IMAGE_DISAB	LINE_CUSTOM	NO_MERGE_P	SCROLLBAR_	TRAVERSE_ES
BORDER_DOT	COLOR_RED	DBC : int	ERROR_INVAI	FILL_EVEN_O	IMAGE_GIF : i	LINE_DASH :	NO_RADIO_G	SEARCH : int	TRAVERSE_M
BORDER_SOL	COLOR_TITLE	Deactivate : i	ERROR_INVAI	FILL_WINDIN	IMAGE_GRAY	LINE_DASHD	NO_REDRAW	Segments : ir	TRAVERSE_N
BOTTOM : int	COLOR_TITLE	DEFAULT : in	ERROR_INVAI	FLAT : int	IMAGE_ICO :	LINE_DASHD	NO_SCROLL :	SELECTED : ir	TRAVERSE_PA
BREAK : int	COLOR_TITLE	DefaultSelect	ERROR_INVAI	FOCUSED : in	IMAGE_JPEG :	LINE_DOT : ir	NO_TRIM : in	Selection : in	TRAVERSE_PA
BS : char	COLOR_TITLE	DEFER : int	ERROR_INVAI	FocusIn : int	IMAGE_OS2_I	LONG : int	NO_TRIM : in	SEPARATOR :	TRAVERSE_RE
BUTTON1 : ir	COLOR_TITLE	Deiconify : in	ERROR_INVAI	FocusOut : in	IMAGE_PNG :	LOW : int	NONE : int	SEPARATOR_	TRAVERSE_TA
BUTTON2 : ir	COLOR_TITLE	DEL : char	ERROR_IO : ir	FOREGROUND	IMAGE_TIFF :	MAX : int	NORMAL : int	SetData : int	TRAVERSE_TA
BUTTON3 : ir	COLOR_WHIT	DELIMITER_S	ERROR_ITEM_	FULL_SELECT	IMAGE_UNDE	MEASUREITEM	NULL : int	Settings : int	UNDERLINE_I
BUTTON4 : ir	COLOR_WIDC	DIALOG_TRIM	ERROR_ITEM_	Gesture : int	IME_COMPOSIT	MEDIUM : int	NUM_LOCK :	SHADOW_ETC	UNDERLINE_E
BUTTON5 : ir	COLOR_WIDC	Dispose : int	ERROR_MENU	GESTURE_BEC	INDETERMIN	MENU : int	OFF : int	SHADOW_ETC	UNDERLINE_I
BUTTON_MA	COLOR_WIDC	DM_FILL_BAC	ERROR_MENU	GESTURE_ENI	INHERIT_DEF	MENU_KEYRC	OK : int	SHADOW_IN	UNDERLINE_S
CALENDAR :	COLOR_WIDC	DM_FILL_NO	ERROR_MENU	GESTURE_MA	INHERIT_FOP		ON : int	SHADOW_NO	UNDERLINE_S

SWT.<^Space>? 454 ± 3

What you'd like to see is...

```
Text text =new Text(toolbar, SWT.BORDER);
```

```
text.addListener(SWT.Modify, this);
```

- SWT.Modify
- SWT.KeyUp
- SWT.Traverse
- SWT.Activate
- SWT.Deactivate
- SWT.KeyDown
- SWT.DefaultSelection
- eventType
- ▲ index
- 0

e4 Annotation Recommender

```
public class AboutHandler {
```

```
public void execute(@Named(IServiceConstants.ACTIVE_SHELL) Shell shell) {
```

@ Add @Execute to method - 88%

📁 Rename in file (⌘2 R)

📁 Rename in workspace (⌘ R)

“Why ~~is~~ was Google Codesearch not ‘google for code search’?”

RETHINKING CODE SEARCH



1 **NEW** DEFINITION IS ADDED ON **URBAN**

1,600+ **READS ON Scribd**

13,000+ **HOURS MUSIC** STREAMING ON **PANDORA**

12,000+ **NEW ADS** POSTED ON **craigslist**

370,000+ **MINUTES** VOICE CALLS ON **skype**

98,000+ **TWEETS**

20,000+ **NEW** POSTS ON **tumblr**

13,000+ **iPhone** APPLICATIONS DOWNLOADED

QUESTIONS ASKED ON THE INTERNET...

100+ **Answers.com**
40+ **YAHOO! ANSWERS**

25+ **HOURS** TOTAL DURATION



600+ **NEW** VIDEOS

70+ **DOMAINS** REGISTERED

60+ **NEW** BLOGS

1,500+ **BLOG** POSTS

168 **MILLION** EMAILS ARE SENT

694,445 **SEARCH** QUERIES

1,700+ **Firefox** DOWNLOADS

695,000+ **facebook** STATUS UPDATES

50+ **WORDPRESS** DOWNLOADS

6,600+ **NEW** PICTURES ARE UPLOADED ON **flickr**

79,364 **WALL** POSTS

510,040 **COMMENTS**

How many request per minutes do
code search engines have?



20

Number for koders.com in 2009 according to “Analyzing and mining a code search engine usage log”
<http://dx.doi.org/10.1007/s10664-010-9144-6> 20



"Templates meet Social and Machine Learning!"

RETHINKING CODE SNIPPETS

Eclipse Java Templates

<input checked="" type="checkbox"/> @author	Javadoc	author name	
<input checked="" type="checkbox"/> 	Javadoc	 	
<input checked="" type="checkbox"/> <code>	Javadoc	<code> </code>	
<input checked="" type="checkbox"/> <i>	Javadoc	<i> </i>	
<input checked="" type="checkbox"/> <pre>			
<input checked="" type="checkbox"/> addlistener			
<input checked="" type="checkbox"/> arrayadd			
<input checked="" type="checkbox"/> arraymerge			
<input checked="" type="checkbox"/> Browser			
<input checked="" type="checkbox"/> Button			
<input checked="" type="checkbox"/> cast			
<input checked="" type="checkbox"/> catch			
<input checked="" type="checkbox"/> Combo			
<input checked="" type="checkbox"/> Composite			
<input checked="" type="checkbox"/> DateTime			
<input checked="" type="checkbox"/> do			
<input checked="" type="checkbox"/> else			
<input checked="" type="checkbox"/> elseif			
<input checked="" type="checkbox"/> execute			
<input checked="" type="checkbox"/> ExpandBar			
<input checked="" type="checkbox"/> ExpandItem			
<input checked="" type="checkbox"/> fall-through			
<input checked="" type="checkbox"/> false			
<input checked="" type="checkbox"/> for			
<input checked="" type="checkbox"/> ifelse	Java statements	if else statement	
<input checked="" type="checkbox"/> Image	SWT statements	new Image	
<input checked="" type="checkbox"/> instanceof	Java statements	dynamic type test and cast	
<input checked="" type="checkbox"/> Label	SWT statements	new Label	
<input checked="" type="checkbox"/> lazy			
<input checked="" type="checkbox"/> Link			
<input checked="" type="checkbox"/> List			
<input checked="" type="checkbox"/> main			
<input checked="" type="checkbox"/> mainloop			
<input checked="" type="checkbox"/> new			
<input checked="" type="checkbox"/> nls			
<input checked="" type="checkbox"/> null			
<input checked="" type="checkbox"/> private_method			
<input checked="" type="checkbox"/> private_static_method			
<input checked="" type="checkbox"/> protected_method			
<input checked="" type="checkbox"/> public_method			
<input checked="" type="checkbox"/> runnable			
<input checked="" type="checkbox"/> SashForm			
<input checked="" type="checkbox"/> Scale			
<input checked="" type="checkbox"/> Scale	SWT statements	new Scale	
<input checked="" type="checkbox"/> ScrolledComposite	SWT statements	new ScrolledComposite	
<input checked="" type="checkbox"/> Shell	SWT statements	new Shell	
<input checked="" type="checkbox"/> Spinner	SWT statements	new Spinner	
<input checked="" type="checkbox"/> static_final	Java type members	static final field	
<input checked="" type="checkbox"/> StyledText	SWT statements	new StyledText	
<input checked="" type="checkbox"/> StyleRange	SWT statements	new StyleRange for a StyledText	
<input checked="" type="checkbox"/> switch	Java statements	switch case statement	
<input checked="" type="checkbox"/> synchronized	Java statements	synchronized block	
<input checked="" type="checkbox"/> syserr	Java statements	print to standard error	
<input checked="" type="checkbox"/> sysout	Java statements	print to standard out	
<input checked="" type="checkbox"/> systrace	Java statements	print current method to standard out	
<input checked="" type="checkbox"/> TabFolder	SWT statements	new TabFolder	
<input checked="" type="checkbox"/> TabItem	SWT statements	new TabItem for a TabFolder	

42x Java Templates.
35x SWT Templates.

<input checked="" type="checkbox"/> TreeItem	SWT statements	new TreeItem for a Tree	
<input checked="" type="checkbox"/> true	Javadoc	<code>>true</code>	
<input checked="" type="checkbox"/> try	Java statements	try catch block	
<input checked="" type="checkbox"/> while	Java statements	iterate with enumeration	
<input checked="" type="checkbox"/> while	Java statements	iterate with iterator	
<input checked="" type="checkbox"/> while	Java statements	while loop with condition	

The rise of code snippet repositories

SNIPPLR CODE 2.0

all code snippets

github:gist

New C

A



Kodejava

Goog

JExamples

Java Examples in Open Source Code 

We analyze the source code of production Java open source projects such as Ant, Tomcat and Spring and load that analysis into a java examples database designed for easy searching. You enter the name of a Java API Class you want to see example invocations of and

and many more...

Snipmatch: Community provided, searchable templates...

```
public void snipmatch() {
```

```
    File file = new File("");
```

```
} file|
```

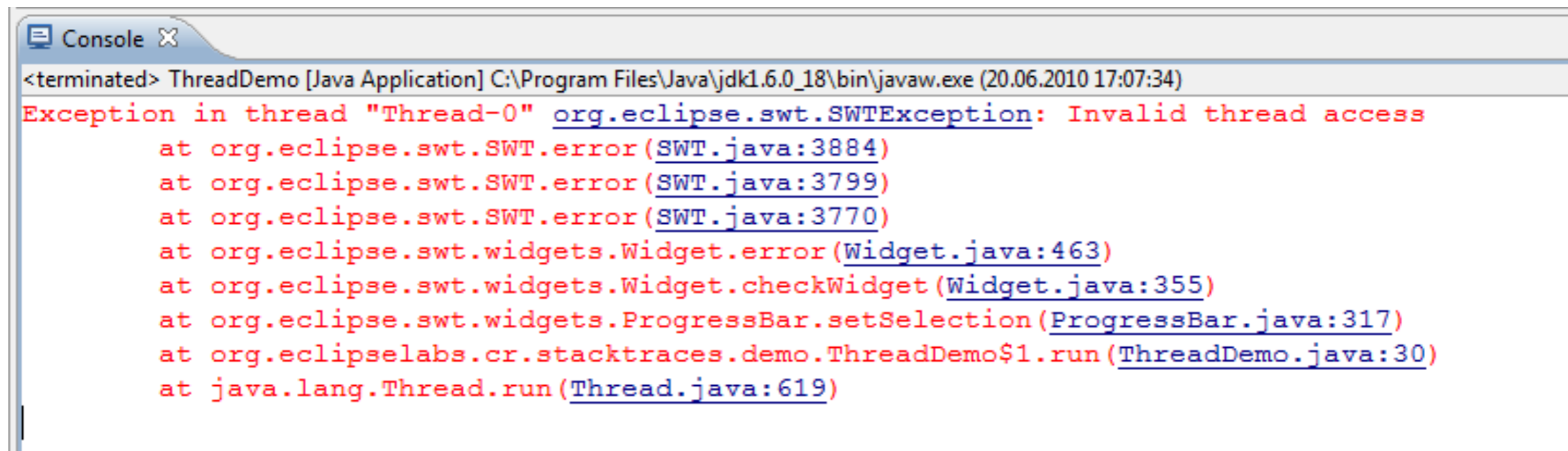
- move file at <filePathString> to folder <dirPathString>
- move <fileObject> to folder <dirPathString>
- copy <fileObject> to <stringPath>
- copy file at <oldStringPath> to <newStringPath>
- read all text from <fileObject> to string
- read lines in <fileObject> into an array
- overwrite file <fileObject> with string <text>
- append string <text> to end of <fileObject>
- read list of files in folder <pathString>
- rename <fileObject> to <newFileName>

```
File file2 = new File(filePathString);  
file2.renameTo(new File(dirPathString + File.separator +  
file2.getName()));
```

“People who ‘bought’ this `NullPointerException` typically fixed this by...”

RETHINKING STACKTRACE SEARCH


But what if you get this?



```
Console X
<terminated> ThreadDemo [Java Application] C:\Program Files\Java\jdk1.6.0_18\bin\javaw.exe (20.06.2010 17:07:34)
Exception in thread "Thread-0" org.eclipse.swt.SWTException: Invalid thread access
    at org.eclipse.swt.SWT.error(SWT.java:3884)
    at org.eclipse.swt.SWT.error(SWT.java:3799)
    at org.eclipse.swt.SWT.error(SWT.java:3770)
    at org.eclipse.swt.widgets.Widget.error(Widget.java:463)
    at org.eclipse.swt.widgets.Widget.checkWidget(Widget.java:355)
    at org.eclipse.swt.widgets.ProgressBar.setSelection(ProgressBar.java:317)
    at org.eclipselabs.cr.stacktraces.demo.ThreadDemo$1.run(ThreadDemo.java:30)
    at java.lang.Thread.run(Thread.java:619)
```

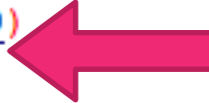
Debugging – the old way

```
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```




Debugging – the old way

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Google

Exception in thread "Thread-0" org.eclipse.s... Suche

Ungefähr 940 Ergebnisse (0,09 Sekunden) [Erweiterte Suche](#)

 **Alles**
▾ Mehr

Das Web
[Seiten auf Deutsch](#)
[Seiten aus Deutschland](#)
▾ Mehr Optionen

[Invalid Thread access - Java @ tutorials.de: Forum & Hilfe](#)
11 Einträge - 2 Autoren - Letzter Eintrag: 6. Aug. 2008
isDisposed() { //-> Exception in thread "Thread-0" org.eclipse.swt.SWTException:
Invalid thread access //label.setText(System. ...
[www.tutorials.de/.../208390-invalid-thread-access.html](#) - Im Cache - Ähnliche

[\[news.eclipse.newcomer\] Re: SWT Threads](#) - [Diese Seite übersetzen]
6 Jul 2005 ... Exception in thread "Thread-0" org.eclipse.swt.SWTException: Invalid
thread access. In other words if I change my code in LongRunningThread ...
[dev.eclipse.org/newlists/...eclipse.../msg03346.html](#) - Im Cache - Ähnliche

[\[SWT\] Countdown-Label -> SWTException \[Archiv\] - mrunix.de](#)
7. Mai 2005 ... Exception in thread "Thread-0" org.eclipse.swt.SWTException: Invalid
thread access at org.eclipse.swt.SWT.error(SWT.java:2860) ...
[www.mrunix.de > ... > Programmieren > Java-Forum](#) - Im Cache - Ähnliche

[SWT GUI, Observer pattern und Invalid thread access](#)
15. Juni 2006 ... Exception in thread "Thread-0" org.eclipse.swt.SWTException: Invalid
thread access at org.eclipse.swt.SWT.error(SWT.java:2942) ...
[newsgroups.derkeiler.com > ... > 2006-06](#) - Im Cache - Ähnliche

[SWT Threads - DevX.com Forums](#) - [Diese Seite übersetzen]
3 Einträge - 3 Autoren - Letzter Eintrag: 13. Juli 2005
Exception in thread "Thread-0" org.eclipse.swt.SWTException: Invalid thread access. If
I hard code the user name and password in my code ...
[forums.devx.com > DevX Developer Forums > Java](#) - Im Cache - Ähnliche

[Java Development Tools - SWT anomaly: org.eclipse.swt](#)
... - [Diese Seite übersetzen]
Exception in thread "Thread-0" org.eclipse.swt.SWTException: Invalid thread access.
At org.eclipse.swt.SWT.error (SWT.java: 2942). At org.eclipse.swt. ...
[www.anyang-window.com.cn/swt-anomaly-orgclipseswtswtexception-invalid-thread-
access/](#) - Im Cache - Ähnliche

But more often we get...

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InvalidArgumentException: "org.eclipse.jface.IllegalStat

[Erweiterte Suche](#)

 **Alles**

▼ Mehr

Das Web

[Seiten auf Deutsch](#)

[Seiten aus
Deutschland](#)

▼ Mehr Optionen

Es wurden keine mit Ihrer Suchanfrage - **InvalidArgumentException:**
"org.eclipse.jface.IllegalState" - übereinstimmenden Dokumente gefunden.

Vorschläge:

- Vergewissern Sie sich, dass alle Wörter richtig geschrieben sind.
- Probieren Sie andere Suchbegriffe.
- Probieren Sie allgemeinere Suchbegriffe.
- Probieren Sie weniger Suchbegriffe.

How can we fix that?

Don't stacktraces share some commonalities?

```
org.eclipse.swt.SWTException: Invalid thread access
  at org.eclipse.swt.SWT.error(SWT.java:3884)
  at org.eclipse.swt.SWT.error(SWT.java:3799)
  at org.eclipse.swt.SWT.error(SWT.java:3770)
  at org.eclipse.swt.widgets.Widget.error(Widget.java:463)
  at org.eclipse.swt.widgets.Widget.checkWidget(Widget.java:355)
  at org.eclipse.swt.widgets.ProgressBar.setSelection(ProgressBar.java:317)
  at org.eclipselabs.cr.stacktraces.demo.ThreadDemo$1.run(Unknown Source)
  at java.lang.Thread.run(Thread.java:619)
```

How can we fix that?

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at java.lang.Thread.run(Thread.java:619)
```

How about “stacktrace recommenders”?

stacktraces.recommenders

vandyk.st.informatik.tu-darmstadt.de:8090/stacktraces/query/2

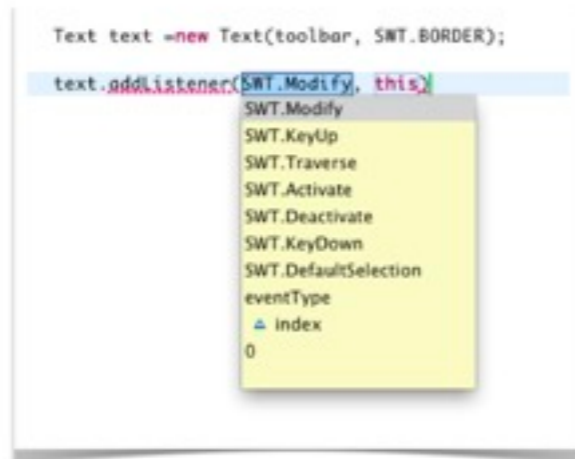
stacktraces.recommenders

You were searching for:
java.lang.NullPointerException
at org.eclipse.jdt.internal.codeassist.CompletionEngine.findLocalMethods(CompletionEngine.java:8613)
at org.eclipse.jdt.internal.codeassist.CompletionEngine.findMethods(CompletionEngine.java:9916)
at org.eclipse.jdt.internal.codeassist.CompletionEngine.findVariablesAndMethods(CompletionEngine.java:11717)
at org.eclipse.jdt.internal.codeassist.CompletionEngine.completionOnSingleNameReference(CompletionEngine.java:3209)
at org.eclipse.jdt.internal.codeassist.CompletionEngine.complete(CompletionEngine.java:1674)
at org.eclipse.jdt.internal.codeassist.CompletionEngine.complete(CompletionEngine.java:1898)
at org.eclipse.jdt.internal.core.Openable.codeComplete(Openable.java:130)
at org.eclipse.jdt.internal.core.CompilationUnit.codeComplete(CompilationUnit.java:357)
at org.eclipse.jdt.internal.core.CompilationUnit.codeComplete(CompilationUnit.java:345)
at org.eclipse.jdt.internal.ui.text.java.JavaCompletionProposalComputer.internalComputeCompletionProposals(JavaCompletionProposalComputer.java:244)
at org.eclipse.jdt.internal.ui.text.java.JavaCompletionProposalComputer.computeCompletionProposals(JavaCompletionProposalComputer.java:206)

Search Query	Description	Link	Recommendations
NPE when triggering content assist on annotation	Created attachment 216722 location in source, for illustration	https://bugs.eclipse.org/bugs/show_bug.cgi?id=381461	7.98819
Assertion Failure using keyboard-shortcut to open key dialog	Version: 4.2.0 Build id: I20120514-1900 Cmd-Shift-L Cmd-Shift-L doesn't work: !ENTRY org.eclipse.e4.ui.workbench 4 0 2012-05-15 18:23:36.499 !MESSAGE !STACK 0	https://bugs.eclipse.org/bugs/show_bug.cgi?id=379618	4.42846
NPE when attempting to create keybinding for empty binding contexts	Version: 4.2.0 Build id: I20120524-2100	https://bugs.eclipse.org/bugs/show_bug.cgi?id=380676	3.97773

4 Tool Candidates for Eclipse Kepler

1 Arguments & Annotation Recommender

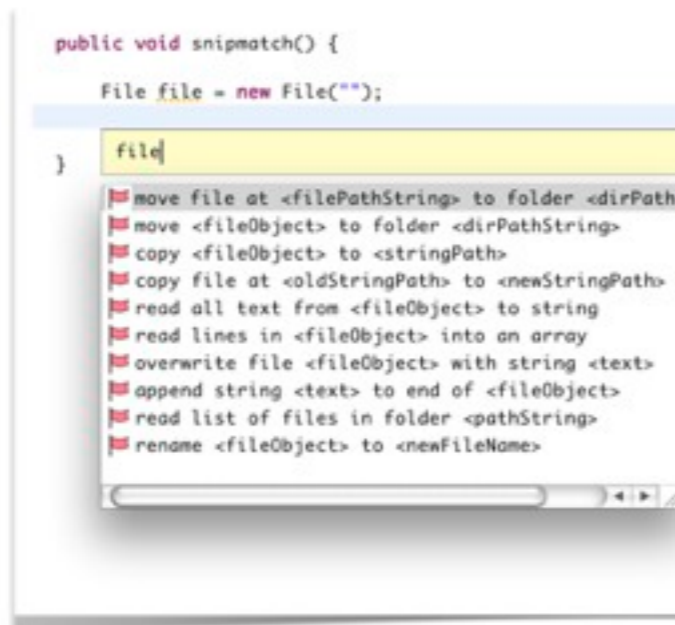


2 Code Search

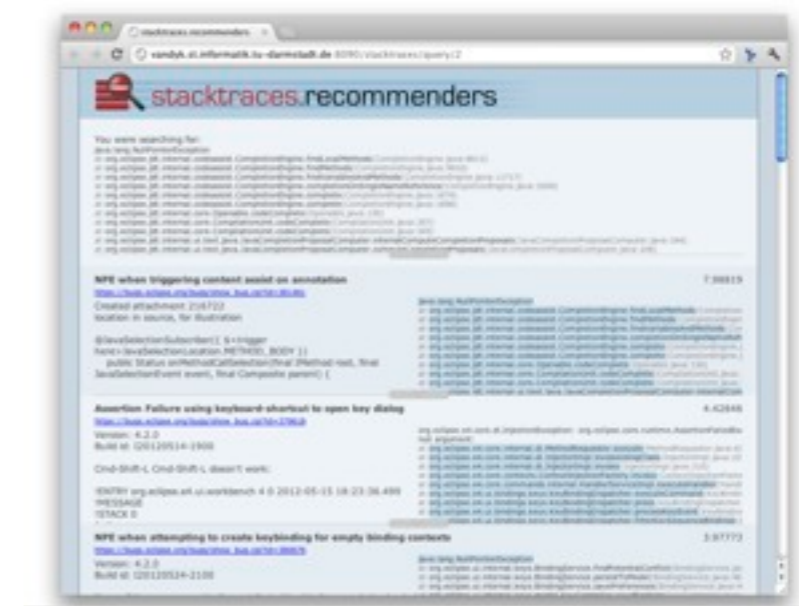


5 One of these!

3 Code Snippet Mining



4 Stacktrace Search





<http://eclipse.org/recommenders/>

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google+: +Marcel Bruch 33