

Class GTerm

```
java.lang.Object
  java.awt.Component
    java.awt.Container
      java.awt.Window
        java.awt.Frame
          javax.swing.JFrame
            GTerm
```

All Implemented Interfaces:

java.awt.event.KeyListener, java.awt.event.MouseListener, java.awt.image.ImageObserver,
java.awt.MenuContainer, java.io.Serializable, java.util.EventListener,
javax.accessibility.Accessible, javax.swing.RootPaneContainer, javax.swing.WindowConstants

```
public final class GTerm
extends javax.swing.JFrame
implements java.awt.event.KeyListener, java.awt.event.MouseListener
```

Version:

2020.08.25

GTerm allows you to create a GUI application using System.out.println-like statements.

Version History:

2020.02.29: Original version

2020.03.06: Added \n support for print and println. Added clear.

2020.03.10: Added textField, textArea, setTextInField, getTextInField, addButton support, repaint in clear.

2020.03.15: Does not exit on close; added close, addPasswordField, addList, addElementToList, removeElementFromList, getSelectedElementFromList

2020.03.21: Fixed non-removal in removeElementFromList, addList and addTextArea now has auto-scrollbars

2020.06.01: Lists of String type

2020.07.06: getElementFromList returns value of consistent type. Added getSelectedElementIndexFromList, setFilePath

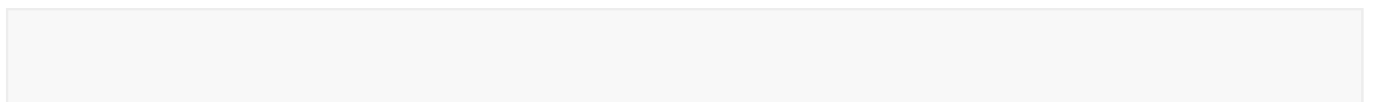
2020.08.25: Lists replaced with tables (\t formats data in to columns. Supports optional header row.). Added addTable, addRowToTable, clearRowsOfTable, getSelectedRowIndexFromTable, getSelectedRowFromTable. Exceptions thrown from invoked supplied methods are more readable. Added addImageIcon(BufferedImage), showErrorDialog(String), showWarningDialog(String). Title of showMessageDialog(String) says "information" instead of "message" (to match icon). addPasswordField, addTextArea and addTextField now return the text field index.

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See Also:

[Serialized Form](#)



Nested Class Summary

Nested classes/interfaces inherited from class `java.awt.Window`

`java.awt.Window.Type`

Nested classes/interfaces inherited from class `java.awt.Component`

`java.awt.Component.BaselineResizeBehavior`

Field Summary

Fields inherited from class `java.awt.Frame`

`ICONIFIED`, `MAXIMIZED_BOTH`, `MAXIMIZED_HORIZ`, `MAXIMIZED_VERT`, `NORMAL`

Fields inherited from class `java.awt.Component`

`BOTTOM_ALIGNMENT`, `CENTER_ALIGNMENT`, `LEFT_ALIGNMENT`, `RIGHT_ALIGNMENT`, `TOP_ALIGNMENT`

Fields inherited from interface `java.awt.image.ImageObserver`

`ABORT`, `ALLBITS`, `ERROR`, `FRAMEBITS`, `HEIGHT`, `PROPERTIES`, `SOMEBITS`, `WIDTH`

Fields inherited from interface `javax.swing.WindowConstants`

`DISPOSE_ON_CLOSE`, `DO_NOTHING_ON_CLOSE`, `EXIT_ON_CLOSE`, `HIDE_ON_CLOSE`

Constructor Summary

Constructors

Constructor	Description
<code>GTerm(int width, int height)</code>	GTerm constructor taking a width and a height suggestion for the window

Method Summary

All Methods

Instance Methods

Concrete Methods

Modifier and Type	Method	Description

Modifier and Type	Method	Description
void	addButton (java.lang.String buttonText, java.lang.Object handlingObject, java.lang.String handlingMethodName)	Adds a button.
void	addImageIcon (java.awt.image.BufferedImage image)	Adds a BufferedImage object at current x,y coordinates.
void	addImageIcon (java.lang.String imageFilename)	Adds an image at current x,y coordinates.
int	addPasswordField (java.lang.String defaultPassword, int widthInPixels)	Adds a single-line password text field.
int	addRowToTable (int indexOfTable, java.lang.String rowData)	Adds a row to an existing table.
int	addTable (int width, int height, java.lang.String columnNames)	Adds a list-like table.
int	addTextArea (java.lang.String defaultText, int widthInPixels, int heightInPixels)	Adds a multi-line, word-wrapping-capable, auto-scrolling text area.
int	addTextField (java.lang.String defaultText, int widthInPixels)	Adds a single-line text field.
void	clear()	Clears the GTerm like clearing a terminal.
void	clearRowsOfTable (int indexOfTable)	Clears added rows of an existing table.
void	close()	Closes this GTerm window but does not necessarily stop the program from running.
java.awt.Color	getColorFromDialog (java.lang.String message)	Shows a colour chooser.
java.lang.String	getFilePath()	Displays a file open dialog.
int	getIndexOfSelectedRowFromTable (int indexOfTable)	Retrieve the currently chosen row's index within an existing table.
java.lang.String	getInputString (java.lang.String message)	Allows the user to enter a String.
java.lang.String	getKey()	
int	getMouseX()	
int	getMouseY()	

Modifier and Type	Method	Description
java.lang.String	getPasswordFromDialog (java.lang.String message)	Shows a password entry dialog box and returns the password.
java.lang.String	getSelectedRowFromTable (int indexOfTable)	Retrieve the currently chosen row String from an existing table.
java.lang.String	getTextFromEntry (int textFieldIndex)	Access the text entered in a text field or a text area.
void	keyPressed (java.awt.event.KeyEvent e)	Do not use.
void	keyReleased (java.awt.event.KeyEvent e)	Do not use.
void	keyTyped (java.awt.event.KeyEvent e)	Do not use.
void	mouseClicked (java.awt.event.MouseEvent e)	
void	mouseEntered (java.awt.event.MouseEvent e)	
void	mouseExited (java.awt.event.MouseEvent e)	
void	mousePressed (java.awt.event.MouseEvent e)	
void	mouseReleased (java.awt.event.MouseEvent e)	
void	print (java.lang.String message)	Similar to System.out.print.
void	println (java.lang.String message)	Similar to System.out.println.
void	setBackgroundColor (int r, int g, int b)	Change the RGB background colour of the window.
void	setBackgroundColor (java.awt.Color backgroundColor)	Change the background colour of the window.
java.lang.String	setFilePath ()	Displays a file save dialog.
void	setFont (java.lang.String fontName, int fontStyle, int fontSize)	Change the font size, style and size used for text that will be added next.
void	setFontColor (int r, int g, int b)	Change the font colour used for text that will be added next.
void	setFontColor (java.awt.Color fontColor)	Change the font colour used for text that will be added next.

Modifier and Type	Method	Description
void	setFontName (java.lang.String fontName)	Change the font name used for text that will be added next.
void	setFontSize (int fontSize)	Change the font size used for text that will be added next.
void	setFontStyle (int fontStyle)	Change the font style for text that will be added next.
void	setTabSize (int tabSize)	Number of spaces used to replace a tab character by methods such as print and println.
void	setTextInEntry (int textFieldIndex, java.lang.String text)	Modify the text entered in a text field or a text area.
void	setXY (int x, int y)	Allows the change of placement within the window.
void	showErrorDialog (java.lang.String message)	Shows the supplied message to the user using an error message dialog box.
void	showHelp ()	Prints the version, credits and help file location.
void	showMessageDialog (java.lang.String message)	Shows the supplied message to the user using an information message dialog box.
void	showWarningDialog (java.lang.String message)	Shows the supplied message to the user using a warning message dialog box.

Methods inherited from class javax.swing.JFrame

getAccessibleContext, getContentPane, getDefaultCloseOperation, getGlassPane, getGraphics, getJMenuBar, getLayeredPane, getRootPane, getTransferHandler, isDefaultLookAndFeelDecorated, remove, repaint, setContentPane, setDefaultCloseOperation, setDefaultLookAndFeelDecorated, setGlassPane, setIconImage, setJMenuBar, setLayeredPane, setLayout, setTransferHandler, update

Methods inherited from class java.awt.Frame

addNotify, getExtendedState, getFrames, getIconImage, getMaximizedBounds, getMenuBar, getState, getTitle, isResizable, isUndecorated, remove, removeNotify, setBackground, setExtendedState, setMaximizedBounds, setMenuBar, setOpacity, setResizable, setShape, setState, setTitle, setUndecorated

Methods inherited from class java.awt.Window

addPropertyChangeListener, addPropertyChangeListener, addWindowFocusListener, addWindowListener, addWindowStateListener, createBufferStrategy, createBufferStrategy, dispose, getBackground, getBufferStrategy, getFocusableWindowState, getFocusCycleRootAncestor, getFocusOwner, getFocusTraversalKeys, getIconImages, getInputContext, getListeners, getLocale, getModalExclusionType, getMostRecentFocusOwner, getOpacity, getOwnedWindows, getOwner, getOwnerlessWindows, getShape, getToolkit, getType, getWarningString, getWindowFocusListeners, getWindowListeners, getWindows, getWindowStateListeners, isActive, isAlwaysOnTop, isAlwaysOnTopSupported, isAutoRequestFocus, isFocusableWindow, isFocusCycleRoot, isFocused, isLocationByPlatform, isOpaque, isShowing, isValidRoot, pack, paint, removeWindowFocusListener, removeWindowListener, removeWindowStateListener, setAlwaysOnTop, setAutoRequestFocus, setBounds, setBounds, setCursor, setFocusableWindowState, setFocusCycleRoot, setIconImages, setLocation, setLocation, setLocationByPlatform, setLocationRelativeTo, setMinimumSize, setModalExclusionType, setSize, setSize, setType, setVisible, toBack, toFront

Methods inherited from class java.awt.Container

add, add, add, add, add, add, addContainerListener, applyComponentOrientation, areFocusTraversalKeysSet, doLayout, findComponentAt, findComponentAt, getAlignmentX, getAlignmentY, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalPolicy, getInsets, getLayout, getMaximumSize, getMinimumSize, getMousePosition, getPreferredSize, invalidate, isAncestorOf, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, list, list, paintComponents, print, printComponents, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusTraversalKeys, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setFont, transferFocusDownCycle, validate

Methods inherited from class java.awt.Component

add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, checkImage, checkImage, contains, contains, createImage, createImage, createVolatileImage, createVolatileImage, dispatchEvent, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBaseline, getBaselineResizeBehavior, getBounds, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getFontMetrics, getForeground, getGraphicsConfiguration, getHeight, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocation, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getSize, getTreeLock, getWidth, getX, getY, hasFocus, imageUpdate, isBackgroundSet, isCursorSet, isDisplayable, isDoubleBuffered, isEnabled, isFocusable, isFocusOwner, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isValid, isVisible, list, list, list, paintAll, prepareImage,

prepareImage, printAll, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, revalidate, setComponentOrientation, setDropTarget, setEnabled, setFocusable, setFocusTraversalKeysEnabled, setForeground, setIgnoreRepaint, setLocale, setMaximumSize, setMixingCutoutShape, setName, setPreferredSize, toString, transferFocus, transferFocusBackward, transferFocusUpCycle

Methods inherited from class java.lang.Object

equals, getClass, hashCode, notify, notifyAll, wait, wait, wait

Methods inherited from interface java.awt.MenuContainer

getFont

Constructor Details

GTerm

```
public GTerm(int width,  
             int height)
```

GTerm constructor taking a width and a height suggestion for the window

Parameters:

width - Suggested width of content area as an int

height - Suggested height of content area as an int

Method Details

showHelp

```
public void showHelp()
```

Prints the version, credits and help file location.

getPasswordFromDialog

```
public java.lang.String getPasswordFromDialog(java.lang.String message)
```

Shows a password entry dialog box and returns the password. Note: Password stored as a String with convenience, not security, in mind. Has no connection with addPasswordField method.

Parameters:

message - The message that will be shown to the user.

Returns:

Returns the entered password or null if cancelled.

getColorFromDialog

```
public java.awt.Color getColorFromDialog(java.lang.String message)
```

Shows a colour chooser. Refer to documentation of javax.swing.JColorChooser's showDialog method for details.

Parameters:

message - The message that will be shown to the user.

Returns:

Returns the chosen colour or null if cancelled.

addTable

```
public int addTable(int width,  
                   int height,  
                   java.lang.String columnNames)
```

Adds a list-like table. Also see addRowToTable, getSelectedRowFromTable, getSelectedRowIndexFromTable and clearRowsOfTable methods.

Parameters:

width - Width in pixels

height - Height in pixels

columnNames - Tab-separated column names for header row. Use null for no header row.

Returns:

Returns the index of the table (use this when adding to, retrieving from, etc. this table.

addRowToTable

```
public int addRowToTable(int indexOfTable,  
                        java.lang.String rowData)
```

Adds a row to an existing table. Use addTable method to add a table first.

Parameters:

indexOfTable - Index of an existing table (see addTable)

rowData - Data for this row, optionally separated by '\t'. Automatically adds columns as needed.

Returns:

Returns the index of the row (e.g. can be used with getSelectedRowFromTable method, etc.)

clearRowsOfTable

```
public void clearRowsOfTable(int indexOfTable)
```

Clears added rows of an existing table. To remove a table or any other added component, use the clear method.

Parameters:

indexOfTable - Index of an existing table (see addTable)

getIndexOfSelectedRowFromTable

```
public int getIndexOfSelectedRowFromTable(int indexOfTable)
```

Retrieve the currently chosen row's index within an existing table.

Parameters:

indexOfTable - Index of an existing table (see addTable)

Returns:

Returns the index of the selected row or -1 if no row selected (e.g. can be used with getSelectedRowFromTable method, etc.)

getSelectedRowFromTable

```
public java.lang.String getSelectedRowFromTable(int indexOfTable)
```

Retrieve the currently chosen row String from an existing table.

Parameters:

indexOfTable - Index of an existing table (see addTable)

Returns:

Returns a String or -1 if no row selected

close

```
public void close()
```

Closes this GTerm window but does not necessarily stop the program from running. Use the clear method if necessary to redraw (with removed, re-arranged components).

setTextInEntry

```
public void setTextInEntry(int textFieldIndex,  
                           java.lang.String text)
```

Modify the text entered in a text field or a text area. Programmer must keep track of number of text areas currently visible. Indices reset to zero upon calls to the clear() method.

Parameters:

textFieldIndex - Index number of text field/area currently showing.

text - Text to be added

getTextFromEntry

```
public java.lang.String getTextFromEntry(int textFieldIndex)
```

Access the text entered in a text field or a text area. Programmer must keep track of number of text areas currently visible. Indices reset to zero upon calls to the clear() method.

Parameters:

textFieldIndex - Index number of text field/area currently showing.

Returns:

The text that is currently in the specified text element.

addPasswordField

```
public int addPasswordField(java.lang.String defaultPassword,  
                           int widthInPixels)
```

Adds a single-line password text field. (See also addTextField) Access its contents using getTextFromEntry method. Modify its contents using setTextInEntry method. Note: Password stored as a String with convenience, not security, in mind.

Parameters:

defaultPassword - Default text. Give an empty String to keep blank.

widthInPixels - Width in pixels

Returns:

Returns the index of this text component (to be used with getTextFromEntry, etc.)

addTextField

```
public int addTextField(java.lang.String defaultText,  
                       int widthInPixels)
```

Adds a single-line text field. (See also addTextArea and addPasswordField). Access its contents using getTextFromEntry method. Modify its contents using setTextInEntry method.

Parameters:

defaultText - Default text. Give an empty String to keep blank.

widthInPixels - Width in pixels

Returns:

Returns the index of this text component (to be used with getTextFromEntry, etc.)

addTextArea

```
public int addTextArea(java.lang.String defaultText,  
                      int widthInPixels,  
                      int heightInPixels)
```

Adds a multi-line, word-wrapping-capable, auto-scrolling text area. (See also `addTextField`) Access its contents using `getTextFromEntry` method. Modify its contents using `setTextInEntry` method.

Parameters:

`defaultText` - Default text. Give an empty String to keep blank.

`widthInPixels` - Width in pixels

`heightInPixels` - Height in pixels

Returns:

Returns the index of this text component (to be used with `getTextFromEntry`, etc.)

addButton

```
public void addButton(java.lang.String buttonText,  
                     java.lang.Object handlingObject,  
                     java.lang.String handlingMethodName)
```

Adds a button.

Parameters:

`buttonText` - Button text.

`handlingObject` - The object containing the method mentioned in `handlingMethodName`.

`handlingMethodName` - The method that will be called when the button is pressed.

clear

```
public void clear()
```

Clears the GTerm like clearing a terminal. To close with GTerm window, use the `close` method.

setFontName

```
public void setFontName(java.lang.String fontName)
```

Change the font name used for text that will be added next. Does not change fonts of previously added text.

Parameters:

`fontName` - A String describing a logical Font. Default is `Font.MONOSPACED`. See API for more <https://docs.oracle.com/javase/10/docs/api/java/awt/Font.html>

setFontSize

```
public void setFontSize(int fontSize)
```

Change the font size used for text that will be added next. Does not change size of previously added text.

Parameters:

fontSize - An int size. Default is 12.

setFontStyle

```
public void setFontStyle(int fontStyle)
```

Change the font style for text that will be added next. Does not change the style of previously added text.

Examples: setFontStyle(Font.BOLD), setFontStyle(Font.ITALIC), setFontStyle(Font.PLAIN), setFontStyle(Font.BOLD | Font.ITALIC)

Parameters:

fontStyle - One of the above statements (int)

setBackgroundColor

```
public void setBackgroundColor(java.awt.Color backgroundColor)
```

Change the background colour of the window. Default is Color.BLACK.

Parameters:

backgroundColor - For available colours, refer to <https://docs.oracle.com/javase/7/docs/api/java/awt/Color.html>

setBackgroundColor

```
public void setBackgroundColor(int r,  
                               int g,  
                               int b)
```

Change the RGB background colour of the window. Default is 0,0,0.

Parameters:

r - An int between 0-255 indicating the red value

g - An int between 0-255 indicating the green value

b - An int between 0-255 indicating the blue value

setFont

```
public void setFont(java.lang.String fontName,  
                    int fontStyle,  
                    int fontSize)
```

Change the font size, style and size used for text that will be added next. Does not change previously added text.

Parameters:

fontName - See documentation of setFontName method for details

fontStyle - See documentation of setFontStyle method for details

fontSize - See documentation of setFontSize method for details

setFontColor

```
public void setFontColor(java.awt.Color fontColor)
```

Change the font colour used for text that will be added next. Does not change colours of previously added text.

Parameters:

fontColor - For available colours, refer to

<https://docs.oracle.com/javase/7/docs/api/java/awt/Color.html>

setFontColor

```
public void setFontColor(int r,  
                        int g,  
                        int b)
```

Change the font colour used for text that will be added next. Does not change colours of previously added text.

Parameters:

r - An int between 0-255 indicating the red value

g - An int between 0-255 indicating the green value

b - An int between 0-255 indicating the blue value

setTabSize

```
public void setTabSize(int tabSize)
```

Number of spaces used to replace a tab character by methods such as print and println. Does not affect tables. Does not affect previously added text.

Parameters:

tabSize - An int between 0-255 indicating the blue value

showMessageDialog

```
public void showMessageDialog(java.lang.String message)
```

Shows the supplied message to the user using an information message dialog box.

Parameters:

message - The message String. If you want to display multiple variables, you will need to concatenate first.

showErrorDialog

```
public void showErrorDialog(java.lang.String message)
```

Shows the supplied message to the user using an error message dialog box.

Parameters:

message - The message String. If you want to display multiple variables, you will need to concatenate first.

showWarningDialog

```
public void showWarningDialog(java.lang.String message)
```

Shows the supplied message to the user using a warning message dialog box.

Parameters:

message - The message String. If you want to display multiple variables, you will need to concatenate first.

getInputString

```
public java.lang.String getInputString(java.lang.String message)
```

Allows the user to enter a String. Shows an input dialog box with the message String supplied as a prompt.

Parameters:

message - The message String. If you want to display multiple variables, you will need to concatenate first.

Returns:

Returns a String. If you need an int or double use Integer.parseInt or Double.parseDouble to convert the returned String.

getFilePath

```
public java.lang.String getFilePath()
```

Displays a file open dialog.

Returns:

Returns a String of the absolute path of the chosen file.

setFilePath

```
public java.lang.String setFilePath()
```

Displays a file save dialog.

Returns:

Returns a String of the absolute path of the chosen/entered file.

addImageIcon

```
public void addImageIcon(java.lang.String imageFilename)
```

Adds an image at current x,y coordinates. Supports GIF, JPEG and PNG. Can be used with `getFilePath` method as `gt.addImageIcon(gt.getFilePath())` Also see `setXY` method.

Parameters:

`imageFilename` - Path to a image file.

addImageIcon

```
public void addImageIcon(java.awt.image.BufferedImage image)
```

Adds a `BufferedImage` object at current x,y coordinates. Also see `setXY` method.

Parameters:

`image` - Existing `BufferedImage` object.

print

```
public void print(java.lang.String message)
```

Similar to `System.out.print`. Text is added at current X,Y coordinates. Also see `setXY` method.

Parameters:

`message` - String message to display.

println

```
public void println(java.lang.String message)
```

Similar to `System.out.println`. Text is added at current X,Y coordinates then cursor moves to "next line". Also see `setXY` method.

Parameters:

`message` - String message to display.

setXY

```
public void setXY(int x,  
                  int y)
```

Allows the change of placement within the window. Can be used with print, println, addImageIcon, etc. methods.

Parameters:

x - An int x value within the window

y - An int y value within the window

getMouseX

```
public int getMouseX()
```

Returns:

Returns the x coordinate of the mouse within the window. -1 if outside window.

getMouseY

```
public int getMouseY()
```

Returns:

Returns the y coordinate of the mouse within the window. -1 if outside window.

getKey

```
public java.lang.String getKey()
```

Returns:

Returns the character of the key that was most recently pressed.

keyReleased

```
public void keyReleased(java.awt.event.KeyEvent e)
```

Do not use. Internal method.

Specified by:

keyReleased in interface java.awt.event.KeyListener

keyTyped

```
public void keyTyped(java.awt.event.KeyEvent e)
```

Do not use. Internal method.

Specified by:

keyTyped in interface java.awt.event.KeyListener

keyPressed

```
public void keyPressed(java.awt.event.KeyEvent e)
```

Do not use. Internal method.

Specified by:

keyPressed in interface `java.awt.event.KeyListener`

mouseClicked

```
public void mouseClicked(java.awt.event.MouseEvent e)
```

Specified by:

mouseClicked in interface `java.awt.event.MouseListener`

mousePressed

```
public void mousePressed(java.awt.event.MouseEvent e)
```

Specified by:

mousePressed in interface `java.awt.event.MouseListener`

mouseReleased

```
public void mouseReleased(java.awt.event.MouseEvent e)
```

Specified by:

mouseReleased in interface `java.awt.event.MouseListener`

mouseEntered

```
public void mouseEntered(java.awt.event.MouseEvent e)
```

Specified by:

mouseEntered in interface `java.awt.event.MouseListener`

mouseExited

```
public void mouseExited(java.awt.event.MouseEvent e)
```

Specified by:

mouseExited in interface `java.awt.event.MouseListener`