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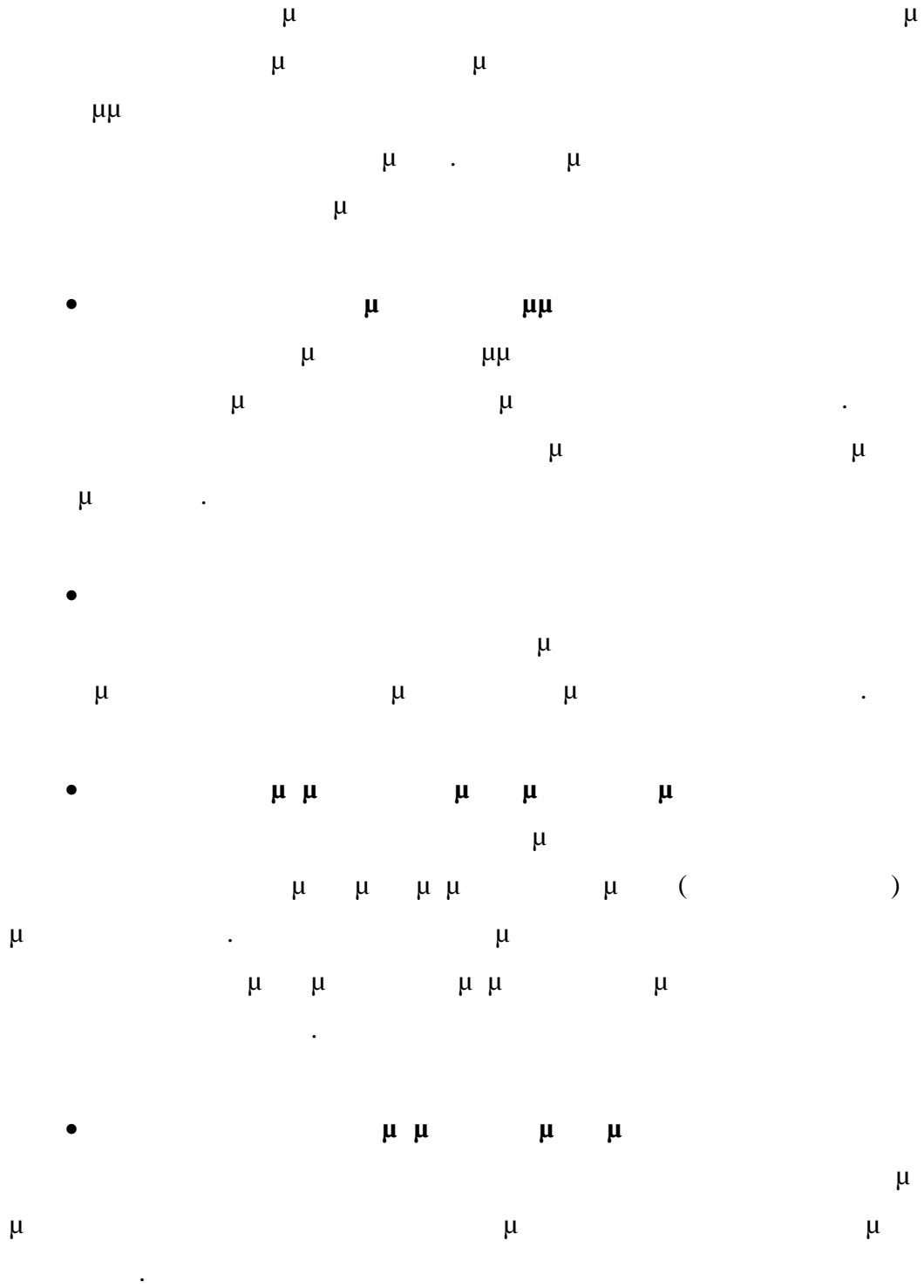
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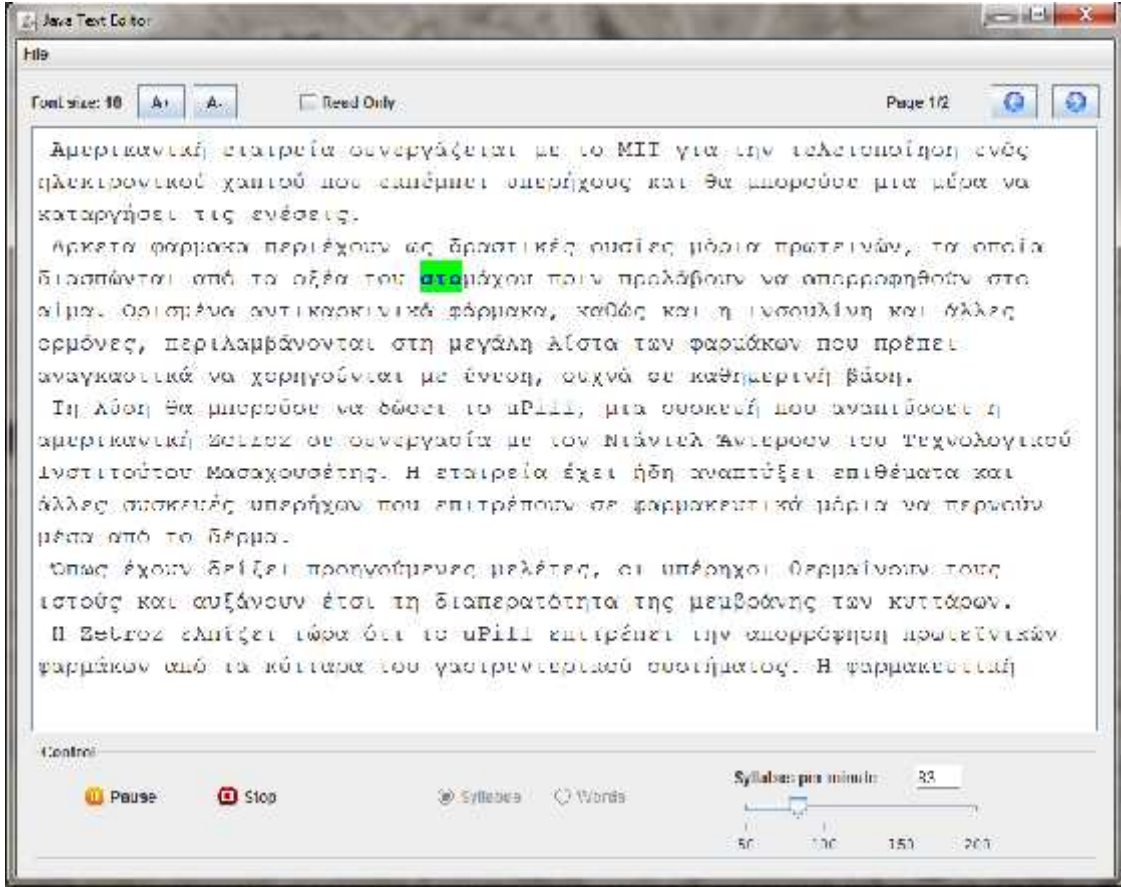


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μμ μ Java μ μ
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(μ , GUI).
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Java.

3.2.

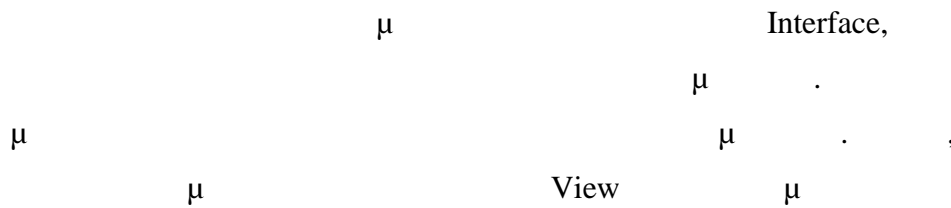
– **MVC**

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μ MVC (Model-
View-Controller) Java. μ
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(Model), μ (View)
μ μ GUI

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- Model



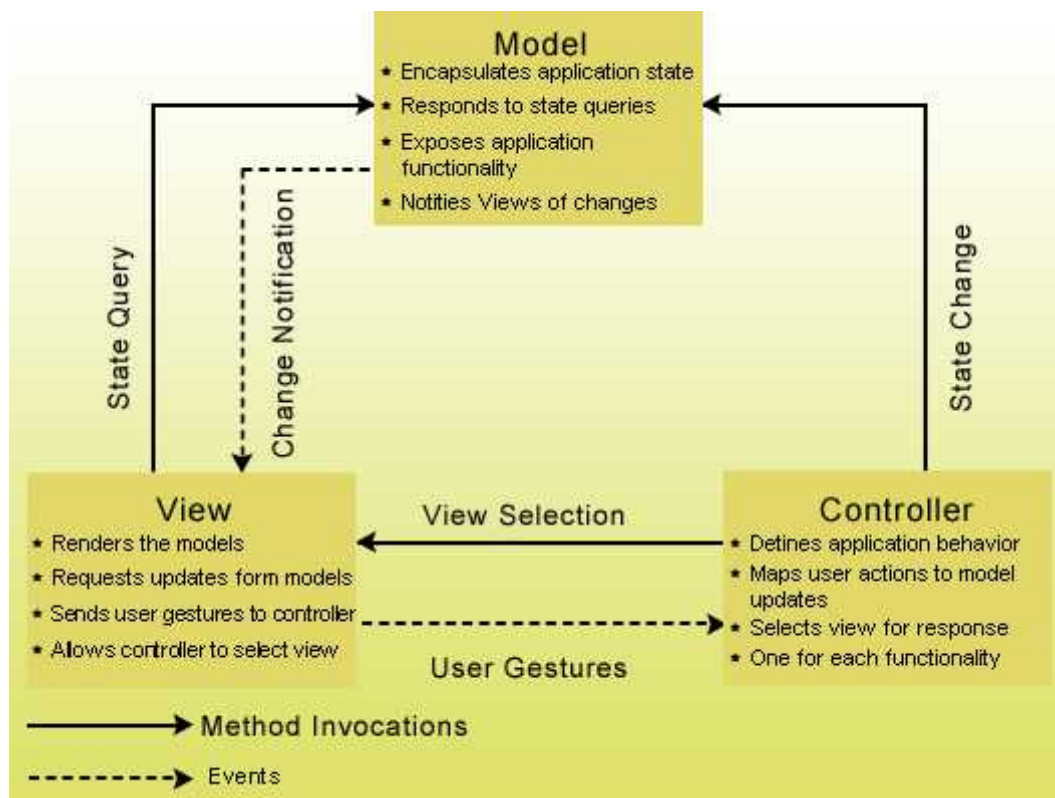
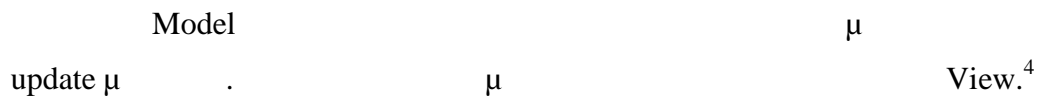
- View

Interface

Model View

- Controller

Model.



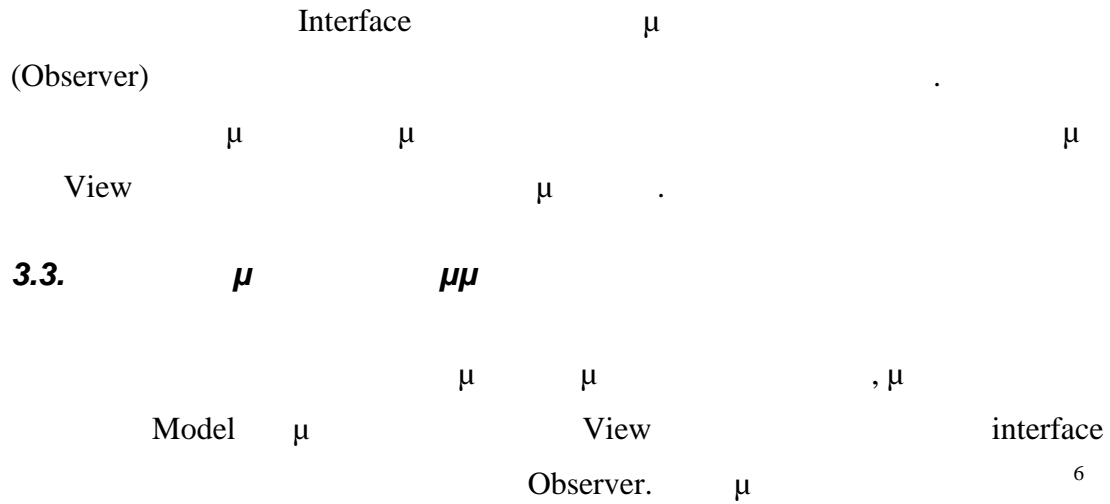
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⁴ <http://www.math.ntua.gr/~mikebekos/courses/java-patterns/system/mvc.pdf>

⁵ <http://www.roseindia.net/tutorial/java/jdbc/javamvcdesignpattern.html>



fonts.model

Class FontSize

- java.lang.Object
 - fonts.model.FontSize

```

public class FontSize
extends java.lang.Object
  
```

- **Constructor Summary**
 - Constructors
 - Constructor and Description**

[FontSize\(\)](#)

- **Method Summary**

Methods

Modifier and Type **Method and Description**

int [getNextBiggerFontSize\(\)](#)

int [getNextSmallerFontSize\(\)](#)

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- - **Constructor Detail**
 - **FontSize**

```
public FontSize()
```
 - **Method Detail**
 - **getNextBiggerFontSize**

```
public int getNextBiggerFontSize()
Returns: the next bigger font size
```
 - **getNextSmallerFontSize**

```
public int getNextSmallerFontSize()
Returns: the next smaller font size
```

fonts.view

Class FontsControlPanel

- java.lang.Object
 - - java.awt.Component
 - - java.awt.Container
 - - javax.swing.JComponent
 - javax.swing.JPanel
 - fonts.view.FontsControlPanel
 - All Implemented Interfaces:
 - java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible

```
public class FontsControlPanel
extends javax.swing.JPanel
```

- - **Nested Class Summary**

Nested Classes

Modifier and Type	Class and Description
static interface	<u>FontsControlPanel.Owner</u>

- **Constructor Summary**

Constructors

Constructor and Description

[FontsControlPanel](#)([FontsControlPanel.Owner](#) owner)
Creates new form FontsControlPanel

-
- **Constructor Detail**
 - ***FontsControlPanel***

```
public FontsControlPanel(FontsControlPanel.Owner owner)
```

Creates new form FontsControlPanel

Parameters: owner -

fonts.view

Interface FontsControlPanel.Owner

- Enclosing class:
[FontsControlPanel](#)

```
public static interface FontsControlPanel.Owner
```

-
- **Method Summary**

Methods

Modifier and Type	Method and Description
void	changeFontSize (int newSize) Changes the size of the Font

-
- **Method Detail**
 - ***changeFontSize***

```
void changeFontSize(int newSize)
```

Changes the size of the Font

Parameters: newSize – The new Font size

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pagination

Class Paginator

- java.lang.Object
 - - pagination.Paginator

```
public class Paginator
  extends java.lang.Object
```

- - **Constructor Summary**
- Constructors
- Constructor and Description**
- [Paginator\(\)](#)
- **Method Summary**

Methods

Modifier and Type	Method and Description
protected java.lang.String	getWrappedText (javax.swing.text.JTextComponent c)
java.util.List<java.lang.String>	splitInPages (javax.swing.JTextPane editPane)

-
- **Constructor Detail**
 - **Paginator**

```
public Paginator()
```

- **Method Detail**
 - **getWrappedText**

```
protected java.lang.String getWrappedText(javax.swing.text.JTextComponent c)
```

Parameters: c - The inserted text

Returns: The stake in multiple lines using '\n'

- **splitInPages**

```
public java.util.List<java.lang.String> splitInPages(javax.swing.JTextPane editPane)
```

Parameters: editPane – The text to be splitted

Returns: A list of String where each String represents a page

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Start/Pause/Stop

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Syllabus/Word

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MVC

Model μ μ

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highlighter.model

Class SyllabusText

- java.lang.Object
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 - highlighter.model.SyllabusText

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```
public class SyllabusText
extends java.lang.Object
```

- - **Constructor Summary**

Constructors

Constructor and Description

```
SyllabusText(int firstCharacterIndex,  
int lastCharacterIndex)
```

- **Method Summary**

Methods

Modifier and Type	Method and Description
boolean	containsIndex (int index) Determining whether the given index exists
int	getFirstCharacterIndex () Gets the First Character Index
int	getLastCharacterIndex () Gets the Last Character Index
void	setFirstCharacterIndex (int firstCharacterIndex) Sets the First Character Index
void	setLastCharacterIndex (int lastCharacterIndex) Sets the Last Character Index

- - **Constructor Detail**
 - ***SyllabusText***
 - ```
public SyllabusText(int firstCharacterIndex,
int lastCharacterIndex)
```

Parameters: firstCharacterIndex - lastCharacterIndex -
  - **Method Detail**
    - ***getFirstCharacterIndex***
    - ```
public int getFirstCharacterIndex()
```

Gets the First Character Index

Returns: firstCharacterIndex

- **setFirstCharacterIndex**

```
public void setFirstCharacterIndex(int firstCharacterIndex)
```

Sets the First Character Index

Parameters: firstCharacterIndex -

- **getLastCharacterIndex**

```
public int getLastCharacterIndex()
```

Gets the Last Character Index

Returns: lastCharacterIndex

- **setLastCharacterIndex**

```
public void setLastCharacterIndex(int lastCharacterIndex)
```

Sets the Last Character Index

Parameters: lastCharacterIndex -

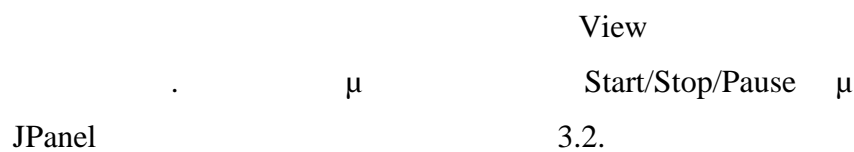
- **containsIndex**

```
public boolean containsIndex(int index)
```

Determining whether the given index exists

Parameters: index -

Returns: True in case that index exist in this, else false



highlighter.view

Class HighlighterControlStartPauseStopPanel

- java.lang.Object
 - java.awt.Component
 - java.awt.Container
 - javax.swing.JComponent
 - javax.swing.JPanel
 - highlighter.view.HighlighterControlStartPauseStopPanel
- All Implemented Interfaces: java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible

```
public class HighlighterControlStartPauseStopPanel
extends javax.swing.JPanel
```

The HighlighterControlStartPauseStopPanel class represents the Start-Pause-Stop Panel .

- **Constructor Summary**

Constructors

Constructor and Description

[HighlighterControlStartPauseStopPanel](#) ([Processor](#) processor , [HighlighterControlHighlightingModePanel](#) modePanel)

- **Method Summary**

Methods

Modifier and Type

Method and Description

void	dispose() Called when the panel will not be used anymore, which means that the thread should be destroyed
void	start() Called when the Start or Pause button pressed
void	stop() Called when the Stop Button pressed

- - **Constructor Detail**
 - **HighlighterControlStartPauseStopPanel**
 - `public HighlighterControlStartPauseStopPanel(Processor processor, HighlighterControlHighlightingModePanel modePanel)`
- Parameters: processor - modePanel -

○ **Method Detail**

- **dispose**

`public void dispose()`

Called when the panel will not be used anymore, this means that the thread should be destroyed

- **stop**

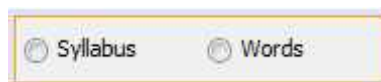
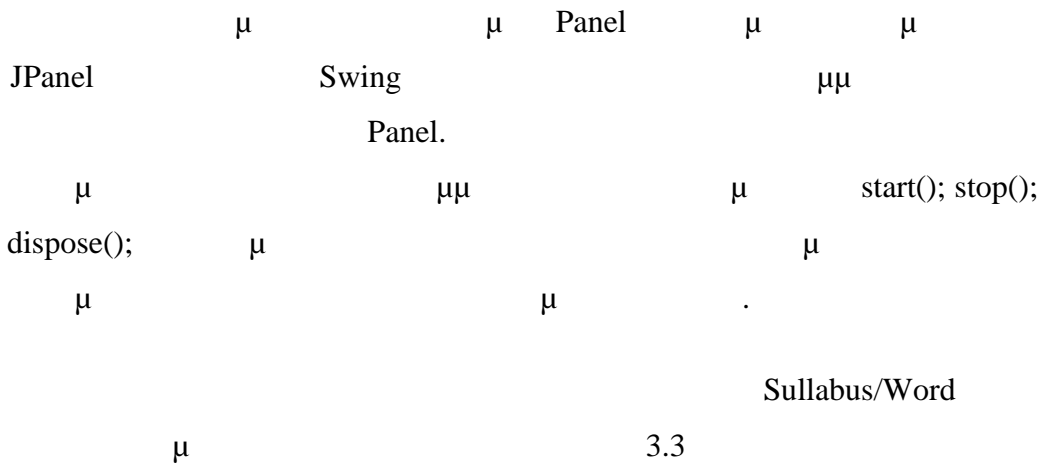
`public void stop()`

Called when the Stop Button pressed

- **start**

`public void start()`

Called when the Start or Pause button pressed



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Syllabus/Word

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highlighter.view

Class HighlighterControlHighlightingModePanel

- java.lang.Object
 - - java.awt.Component
 - java.awt.Container
 - javax.swing.JComponent
 - javax.swing.JPanel
 - highlighter.view.HighlighterControlHighlightingModePanel
- All Implemented Interfaces:
java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible

```
public class HighlighterControlHighlightingModePanel
extends javax.swing.JPanel
```

The HighlighterControlHighlightingModePanel class represents the Highlighting Mode Panel .

○ Field Summary

Fields

Modifier and Type	Field and Description
javax.swing.JRadioButton	SyllabusRadio
javax.swing.JRadioButton	WordRadio

○ Constructor Summary

Constructors

Constructor and Description

[HighlighterControlHighlightingModePanel](#)
([Processor](#) processor)

- o **Method Summary**

Methods

**Modifier
and Type**

Method and Description

void [changeProcessingMode](#)([Processor.ProcessMode](#) mode)
Change the Highlighting Mode of the Processor

-
- o **Field Detail**

- **SyllabusRadio**

public javax.swing.JRadioButton SyllabusRadio

- **WordRadio**

public javax.swing.JRadioButton WordRadio

- o **Constructor Detail**

- **HighlighterControlHighlightingModePanel**

public HighlighterControlHighlightingModePanel
([Processor](#) processor)

Parameters: processor -

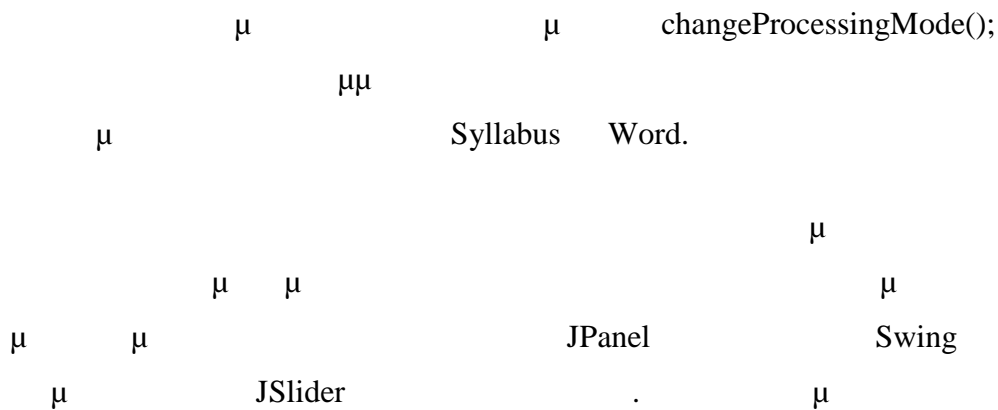
- o **Method Detail**

- **changeProcessingMode**

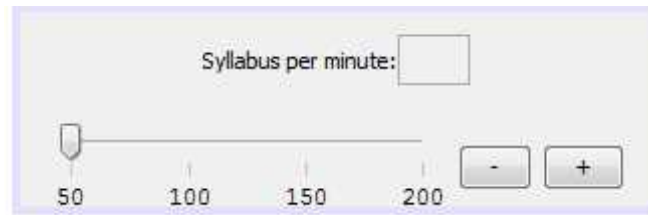
public void changeProcessingMode
([Processor.ProcessMode](#) mode)

Change the Highlighting Mode of the Processor

Parameters: mode - Syllabus or Word



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highlighter.view

Class HighlighterControlSliderPanel

- java.lang.Object
 - - java.awt.Component
 - - java.awt.Container
 - - javax.swing.JComponent
 - - javax.swing.JPanel
 - - highlighter.view.HighlighterControlSliderPanel
 - All Implemented Interfaces:
 - java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible

```
public class HighlighterControlSliderPanel
extends javax.swing.JPanel
```

The HighlighterControlSliderPanel class represents the Slider Panel .

See Also:

- **Constructor Summary**

Constructors

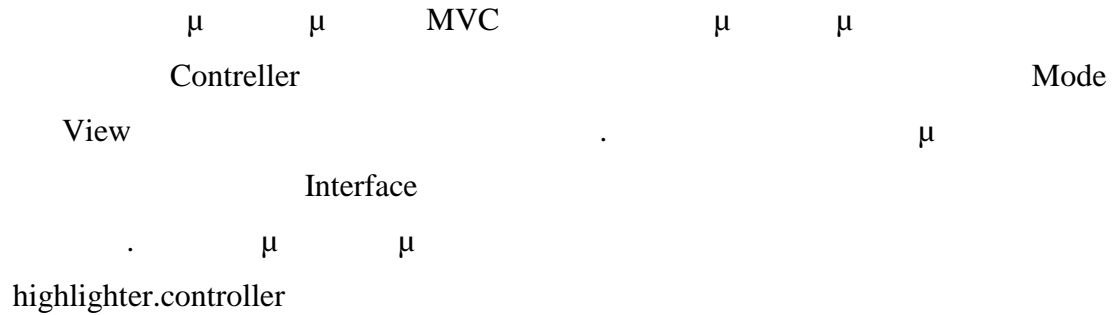
Constructor and Description

[HighlighterControlSliderPanel](#) ([Processor](#) processor)

- - **Constructor Detail**
 - ***HighlighterControlSliderPanel***

```
public HighlighterControlSliderPanel(Processor processor)
```

Parameters: processor -



Class Helper

- java.lang.Object
 - - highlighter.controller.Helper

```
public class Helper
extends java.lang.Object
```

- - **Constructor Summary**

Constructors

Constructor and Description

[Helper](#)()

- **Method Summary**

Methods

**Modifier
and
Type**

Method and Description

static
int [getNumberOfSyllabus](#)(java.lang.String word)

static
int [getSyllabusStartIndex](#)(java.lang.String syllabus,
java.lang.String fullText, int startingIndex)

```

static void initSyllabus(java.util.List<SyllabusText>
    syllabusSimple,
    java.util.List<SyllabusText> syllabusWords,
    java.lang.String fullText)

```

-
- **Constructor Detail**
 - **Helper**

```
public Helper()
```

- **Method Detail**
 - **initSyllabus**

```

public static void initSyllabus(java.util.List
<SyllabusText> syllabusSimple,
    java.util.List<SyllabusText> syllabusWords,
    java.lang.String fullText)
Parameters: syllabusSimple - syllabusWords - fullText -

```

- **getNumberOfSyllabus**

```

public static int getNumberOfSyllabus
(java.lang.String word)
Parameters: word -
Returns: the number of syllabus for the given word

```

- **getSyllabusStartIndex**

```

public static int getSyllabusStartIndex
(java.lang.String syllabus,
    java.lang.String fullText, int startingIndex)
Parameters: syllabus - fullText - startingIndex -
Returns: the first index of the given syllabus

```



highlighter.controller

Class Processor

- java.lang.Object
 - - highlighter.controller.Processor

- All Implemented Interfaces:
java.lang.Runnable, java.util.EventListener, javax.swing.event.CaretListener,
javax.swing.event.DocumentListener

```
public class Processor
extends java.lang.Object
implements java.lang.Runnable, javax.swing.event.CaretListener,
javax.swing.event.DocumentListener
```

The Processor class controls Highlighting

- - **Nested Class Summary**

Nested Classes

| Modifier and Type | Class and Description |
|-------------------|--|
| static interface | <u>Processor.Owner</u> |
| static interface | <u>Processor.PaginableOwner</u>
This interface should be implemented in that the owner support pagination |
| static class | <u>Processor.ProcessMode</u>
States of the Highlight Mode Button |
| static class | <u>Processor.State</u>
States of the Highlight Start-Pause-Stop Button |

- **Method Summary**

Methods

| Modifier and Type | Method and Description |
|--|--|
| void | <u>caretUpdate</u>
(javax.swing.event.CaretEvent ce)
Handle the case that the Caret's position was changed |
| void | <u>changedUpdate</u>
(javax.swing.event.DocumentEvent de) |
| void | <u>changeState</u> (<u>Processor.State</u> newState) |
| static <u>Processor</u> | <u>getInstance</u> (<u>Processor.Owner</u> owner, javax.swing.JTextPane textPane) |
| int | <u>getSyllabusPerMinute</u> () |
| <u>Processor.ProcessMode</u> | <u>getThreadMode</u> () |
| <u>Processor.State</u> | <u>getThreadState</u> () |

| | |
|-------------------------------|---|
| protected
java.lang.String | <u>highlightNextItem()</u>
Highlights the next item |
| void | <u>insertUpdate</u>
(javax.swing.event.DocumentEvent de) |
| void | <u>removeUpdate</u>
(javax.swing.event.DocumentEvent de) |
| void | <u>resetCaretPosition()</u>
Resets the caret Position in the text |
| void | <u>run()</u> |
| void | <u>setOwner</u> (<u>Processor.Owner</u> owner) |
| void | <u>setSyllabusPerMinute</u>
(int syllabusPerMinute) |
| void | <u>setTextPane</u>
(javax.swing.JTextPane textPane) |
| void | <u>setThreadMode</u>
(<u>Processor.ProcessMode</u> processMode) |

-

- **Method Detail**

- **setOwner**

```
public void setOwner(Processor.Owner owner)
Parameters: owner -
```

- **resetCaretPosition**

```
public void resetCaretPosition()
```

Resets the caret Position in the text

- **setTextPane**

```
public void setTextPane(javax.swing.JTextPane
textPane)
```

Parameters: textPane -

- **getSyllabusPerMinute**

```
public int getSyllabusPerMinute()
```

Returns: syllabusPerMinute

- **setSyllabusPerMinute**

```
public void setSyllabusPerMinute(int syllabusPerMin
ute)
```

Parameters: syllabusPerMinute -

- ***setThreadMode***

```
public void setThreadMode(Processor.ProcessMode processMode)
```

Parameters: processMode -

- ***getThreadMode***

```
public Processor.ProcessMode getThreadMode()
```

Returns: The thread's process mode

- ***getThreadState***

```
public Processor.State getThreadState()
```

Returns: The Thread's state

- ***changeState***

```
public void changeState(Processor.State newState)
```

Parameters: newState -

- ***insertUpdate***

```
public void insertUpdate(javax.swing.event.DocumentEvent de)
```

Specified by: insertUpdate in

interface javax.swing.event.DocumentListener

- ***removeUpdate***

```
public void removeUpdate(javax.swing.event.DocumentEvent de)
```

Specified by: removeUpdate in

interface javax.swing.event.DocumentListener

- ***changedUpdate***

```
public void changedUpdate(javax.swing.event.DocumentEvent de)
```

Specified by: changedUpdate in

interface javax.swing.event.DocumentListener

- ***caretUpdate***

```
public void caretUpdate(javax.swing.event.CaretEvent ce)
```

Handle the case that the Caret's position was changed

Specified by: caretUpdate in

interface javax.swing.event.CaretListener

Parameters: ce -

- **run**

```
public void run()
```

Specified by: run in interface `java.lang.Runnable`

- **highlightNextItem**

```
protected java.lang.String highlightNextItem()
```

Highlights the next item

Returns: The text that was highlighted or null in case that nothing was highlighted

- **getInstance**

```
public static Processor getInstance  
(Processor.Owner owner, javax.swing.JTextPane  
textPane)
```

Parameters: owner - textPane -

Returns: The Processor that will be used for the specified owner and textPane

μ Interface μ

highlighter.controller

Interface Processor.Owner

- All Known Subinterfaces:
[Processor.PaginableOwner](#)
Enclosing class:
[Processor](#)

```
public static interface Processor.Owner
```

-
- **Method Summary**

| Methods | |
|-------------------|--|
| Modifier and Type | Method and Description |
| void | <u>notifyOnProcessingFinished()</u>
otify the owner that the highlighting process was completed |

-
- **Method Detail**
 - ***notifyOnProcessingFinished***

```
void notifyOnProcessingFinished()  
    otify the owner that the highlighting process was completed
```

highlighter.controller

Interface Processor.PaginableOwner

- All Superinterfaces:
[Processor.Owner](#)
 Enclosing class:
[Processor](#)

```
public static interface Processor.PaginableOwner  
    extends Processor.Owner
```

This interface should be implemented in that the owner support pagination

-
- **Method Summary**

| Methods | |
|-------------------|---|
| Modifier and Type | Method and Description |
| boolean | <u>hasNextPage()</u> |
| void | <u>showNextPage()</u>
Move to the next page, if there is any |

- **Methods inherited from interface `highlighter.controller.Processor.Owner`**

[`notifyOnProcessingFinished`](#)

- - **Method Detail**

- ***hasNextPage***

`boolean hasNextPage()`

Returns: true in case that there is another page to highlight

- ***showNextPage***

`void showNextPage()`

Move to the next page, if there is any

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|------------------|---------------|---|---|------|
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| Start/Pause?Stop | Syllabus/Word | | μ | Enum |
| Java | | | | |

highlighter.controller

Enum `Processor.ProcessMode`

- `java.lang.Object`
 - - `java.lang.Enum`<[`Processor.ProcessMode`](#)>
 - - `highlighter.controller.Processor.ProcessMode`
 - All Implemented Interfaces:
 - `java.io.Serializable`, `java.lang.Comparable`<[`Processor.ProcessMode`](#)>
- Enclosing class:
[`Processor`](#)

```
public static enum Processor.ProcessMode
extends java.lang.Enum<Processor.ProcessMode>
```

States of the Highlight Mode Button

- - **Enum Constant Summary**

Enum Constants

Enum Constant and Description

[SYLLABUS](#)

[WORD](#)

- **Method Summary**

Methods

| Modifier and Type | Method and Description |
|--|---|
| static
Processor.ProcessMode | valueOf (java.lang.String name)
Returns the enum constant of this type with the specified name. |
| static
Processor.ProcessMode [] | values ()
Returns an array containing the constants of this enum type, in the order they are declared. |

- - **Enum Constant Detail**

- **SYLLABUS**

```
public static final Processor.ProcessMode SYLLABUS
```

- **WORD**

```
public static final Processor.ProcessMode WORD
```

- **Method Detail**

- **values**

```
public static Processor.ProcessMode[] values()  
Returns an array containing the constants of this enum type, in the order they are declared.
```

- **valueOf**

```
public static Processor.ProcessMode valueOf  
(java.lang.String name)
```

Returns the enum constant of this type with the specified name. The string must match *exactly* an identifier used to declare an enum constant in this type. (Extraneous whitespace characters are not permitted.)

Parameters: name - the name of the enum constant to be returned.
Returns: the enum constant with the specified name
Throws: `java.lang.IllegalArgumentException` - if this enum type has no constant with the specified name
`java.lang.NullPointerException` - if the argument is null

highlighter.controller

Enum Processor.State

- `java.lang.Object`
 - - `java.lang.Enum`<[Processor.State](#)>
 - - `highlighter.controller.Processor.State`
- All Implemented Interfaces:
`java.io.Serializable`, `java.lang.Comparable`<[Processor.State](#)>
Enclosing class:
[Processor](#)

```
public static enum Processor.State
extends java.lang.Enum<Processor.State>
```

States of the Highlight Start-Pause-Stop Button

- - **Enum Constant Summary**

Enum Constants

Enum Constant and Description

[PAUSED](#)

[STARTED](#)

[STOPPED](#)

- **Method Summary**

Methods

Modifier and Type

Method and Description

static

[Processor.State](#)

[valueOf](#)(`java.lang.String` name)

Returns the enum constant of this type with the specified name.

`static Processor.State[] values()`
Returns an array containing the constants of this enum type, in the order they are declared.

- - **Enum Constant Detail**

- - - **STARTED**

- - - `public static final Processor.State STARTED`

- - - **PAUSED**

- - - `public static final Processor.State PAUSED`

- - - **STOPPED**

- - - `public static final Processor.State STOPPED`

- - **Method Detail**

- - - **values**

- - - `public static Processor.State[] values()`
Returns an array containing the constants of this enum type, in the order they are declared.

- - - **valueOf**

- - - `public static Processor.State valueOf(
java.lang.String name)`

- - - Returns the enum constant of this type with the specified name. The string must match *exactly* an identifier used to declare an enum constant in this type. (Extraneous whitespace characters are not permitted.)

- - - Parameters: name - the name of the enum constant to be returned.

- - - Returns: the enum constant with the specified name

- - - Throws: `java.lang.IllegalArgumentException` - if this enum type has no constant with the specified name

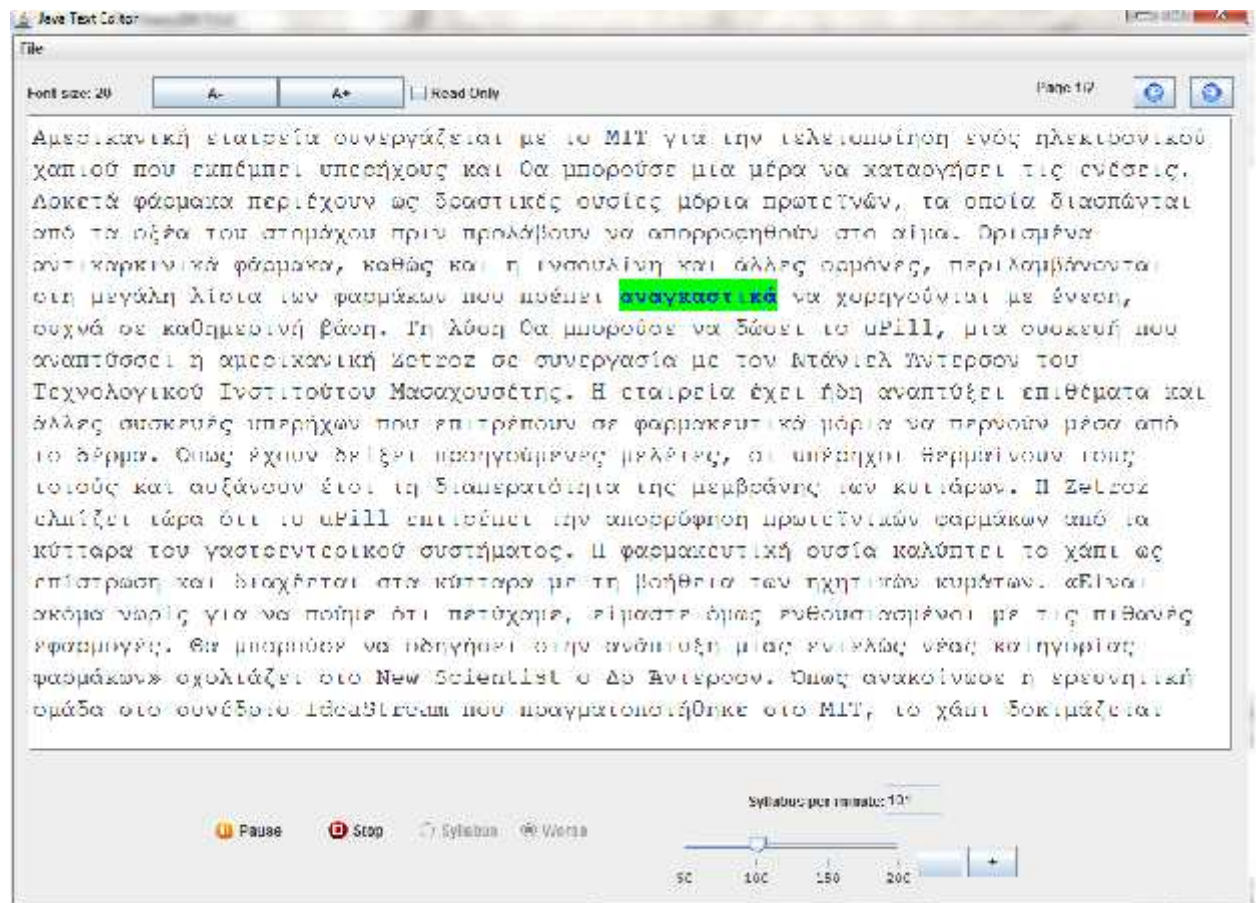
- - - `java.lang.NullPointerException` - if the argument is null

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4: μ

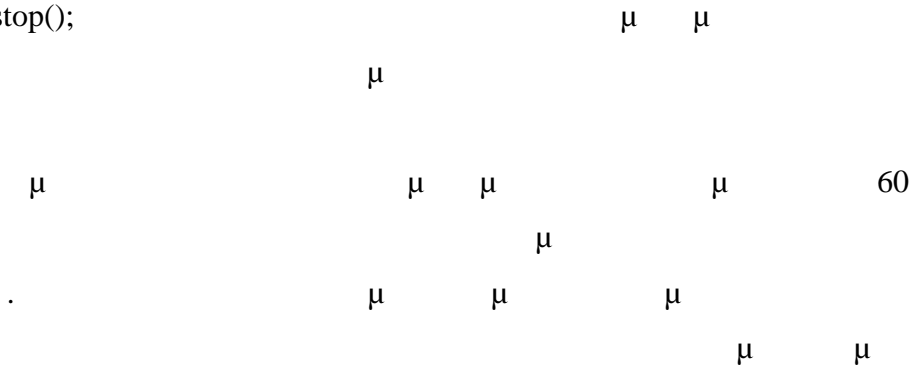
4.1. μ

μ μ μ
- . μ μ μ
μ (HighlighterLibrary) μ
μ
μ 4.1 μ
μ μ μ μ μ μ μ
μ .

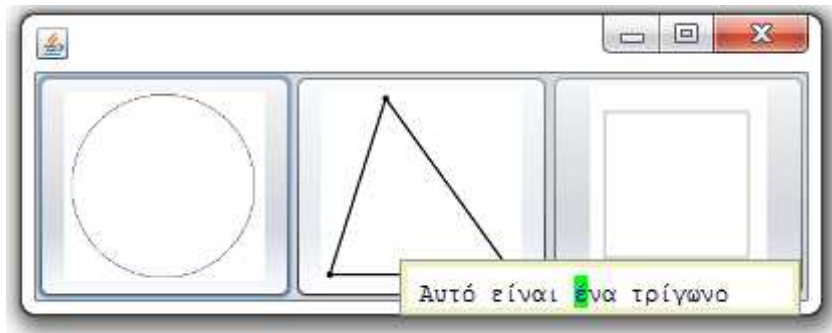


4.1: μ μ

- stop();

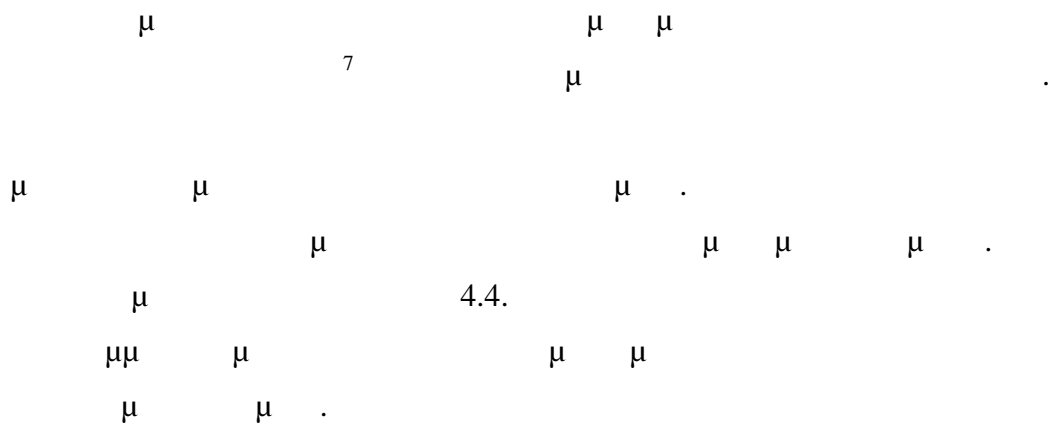


4.3



4.3: μ μ . μ

4.3.



4.4.

⁷ <http://www.ntua.gr/history2.html>

μ μ $\mu\mu$
 $\mu\mu$ μ .

 μ μ $\mu\mu$
 μ () μ $\mu\mu$
 μ μ . μ $\mu\mu$
 μ μ μ μ μ μ μ
 μ , , μ μ μ μ
. μ μ

6: B

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