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Факультет інформатики та обчислювальної техніки

Кафедра обчислювальної техніки

Курсова робота

На тему:

*«Розробка програм с графічним інтерфейсом користувача»*

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**Зміст**

1. Вступ 3

2. Технічне завдання 4

3. Проектування інтерфейсу користувача 5

4. Розробка програмного забезпечення 13

5. Висновки 56

6. Література 57

*Додаток А*. Код програми. 58

1. **Вступ**

*Мета роботи* - розробка програми відображення табличних даних у вигляді діаграми, вивчення принципів побудови програм с графічним інтерфейсом.

В якості вхідних даних виступає таблиця, що знаходиться у CSV-файлі. Тип діаграми - *лінійна*; значення – координати точок, серії яких утворюють лінії.

Дана програма є простою в опануванні і може бути використана для побудови простих діаграм, коли великі програмні комплекси використовувати недоцільно.

1. **Технічне завдання**

*Програма візуалізації має містити наступну функціональність:*

1. можливість завантаження/збереження даних у табличний формі в форматі CSV
2. синтаксичний розбір і перевірка формату CSV з відбудовою внутрішньої моделі даних, в разі помилок – формування виключення та інформування користувача про нього (Exception)
3. інтерфейс користувача (на основі компонентів бібліотеки SWING), який містить дві основні області – табличну і графічну, а також допоміжні компоненти – меню, панелі, кнопки, діалоги, тощо. Таблична область містить дані, що завантажені з CSV-файлу, а графічна – їй інтерпретацію у вигляді діаграми згідно варіанту (наведеному нижче)
4. можливість редагування даних (модифікація елемента, вставка/видалення елемента) в табличній області (згідно варіанту нижче) з синхронною зміною графічної області
5. можливість збереження результату графічної інтерпретації – діаграми у вигляді файлу формату JPEG.
6. можливість гнучко змінювати параметри налаштувань (колір діаграм,координатної сітки, масштабування і т.п.)

*Вимоги до реалізації:*

1. мова програмування Java з використанням бібліотеки SWING
2. заборонено використовувати спеціалізовані компоненти для побудови діаграм
3. інтерфейс користувача має забезпечувати доступ до всієї функціональності програми;
4. проект має бути повністю задокументований за допомогою JavaDoc
5. проект має повністю відповідати правилам CheckStyle

**3.Проектування інтерфейсу користувача**

В основу програми покладений шаблон MVC (Model, View, Controller). Модель - TableModel, представлення –DiagramDrawer, MyFrame, контролер – Controller

Основне вікно програми використовується для створення і редагування лінійних діаграм.

**Початковий опис потоку подій роботи з програмою побудови діаграм:**

1. Прецедент починається, коли користувач запускає програму.

2. Користувач створює нову діаграму, або відкриває раніше збережену відкриттям CSV файлу

3. Користувач може виконати одну с наступних дій:

1. Зберегти діаграму
2. Зберегти діаграму у JPEG
3. Зберегти копію діаграми
4. Відредагувати відкриту діаграму
5. Змінити налаштування програми

4. Прецедент закінчується, коли користувач завершує роботу з програмою.

**Розробка орієнтирів:**

1. Прецедент починається, коли користувач запускає програму.

2. Користувач створює нову діаграму, імпортувавши csv-файл.

3. Користувач може виконати одну с наступних дій:

1. Зберегти діаграму
2. Зберегти діаграму у JPEG
3. Зберегти копію діаграми [Користувач може зберігати ту ж діаграму з іншим іменем]
4. Відредагувати відкриту діаграму [Користувач може видаляти елементи діаграми, їх змінювати та створювати нові, налаштовувати зовнішній вигляд діаграми]
5. Змінити налаштування програми [Користувач може визначити кольори координатної сітки,осей координат; також він має змогу змінити масштаб, визначити відображення координатної сітки]

4. Прецедент закінчується, коли користувач завершує роботу з програмою.

**Розробка атрибутів:**

1. Прецедент починається, коли користувач запускає програму.

2. Користувач створює нову діаграму, імпортувавши csv-файл.

3. Користувач може виконати одну с наступних дій:

1. Зберегти діаграму {Перезапис вихідного файлу у форматі csv }
2. Зберегти діаграму у JPEG {Збереження у JPEG}
3. Зберегти копію діаграми {Користувач задає ім’я нового файлу }
4. Відредагувати відкриту діаграму {Користувач вносить зміни у відкриту діаграму}
5. Змінити налаштування програми {Користувач змінює параметри (налаштування) программи}

4. Прецедент закінчується, коли користувач завершує роботу з програмою.

**Розробка інтенсивності використання:**

1. Прецедент починається, коли користувач запускає програму.

2. Користувач створює нову діаграму, імпортувавши csv-файл. (часто)

3. Користувач може виконати одну с наступних дій:

1. Зберегти діаграму (найбільш часто)
2. Зберегти діаграму у JPEG (середньо)
3. Зберегти копію діаграми (середньо)
4. Відредагувати відкриту діаграму (найбільш часто)
5. Змінити налаштування програми (нечасто)

4. Прецедент закінчується, коли користувач завершує роботу з програмою.

**Результуючий опис подій прикладу:**

1. Прецедент починається, коли користувач запускає програму.

2. Користувач створює нову діаграму, імпортувавши csv-файл.

3. Користувач може виконати одну с наступних дій:

1. Зберегти діаграму{Перезапис вихідного файлу у форматі csv} (найбільш часто)
2. Зберегти діаграму у JPEG {Збереження у JPEG} (середньо)
3. Зберегти копію діаграми [Користувач може зберігати ту ж діаграму з іншим іменем] {Користувач задає ім’я нового файлу без розширення, яке встановлюється як csv}(середньо)
4. Відредагувати відкриту діаграму [Користувач може видаляти елементи діаграми, їх змінювати та створювати нові, налаштовувати зовнішній вигляд діаграми] {Користувач підтверджує або ні внесення змін в налаштування даіграми}(найбільш часто)
5. Змінити налаштування програми [Користувач може видаляти елементи діаграми, їх змінювати та створювати нові, налаштовувати зовнішній вигляд діаграми](нечасто)

4. Прецедент закінчується, коли користувач завершує роботу з програмою.

Головне вікно

Пункт меню Point

Пункт меню Options

Користувач

Графічна область

Пункт меню New

Пункт меню Open

Пункт меню Close

Пункт меню Table

Пункт меню Exit

Пункт меню Save

Пункт меню Save as..

Пункт меню Import to Jpeg

Діалог збереження/ відкриття

Пункт менAdd

Пункт меню Insert

Пункт меню Remove

Пункт меню Add Chain

Пункт меню Remove Chain

Пункт меню Color

Таблична область

**Діаграма граничних класів**

Рис. 3.1 Діаграма граничних класів

**Доповнення опису ілюстрованого сценарія об’єктами діаграм**

1. Прецедент починається, коли користувач запускає програму.

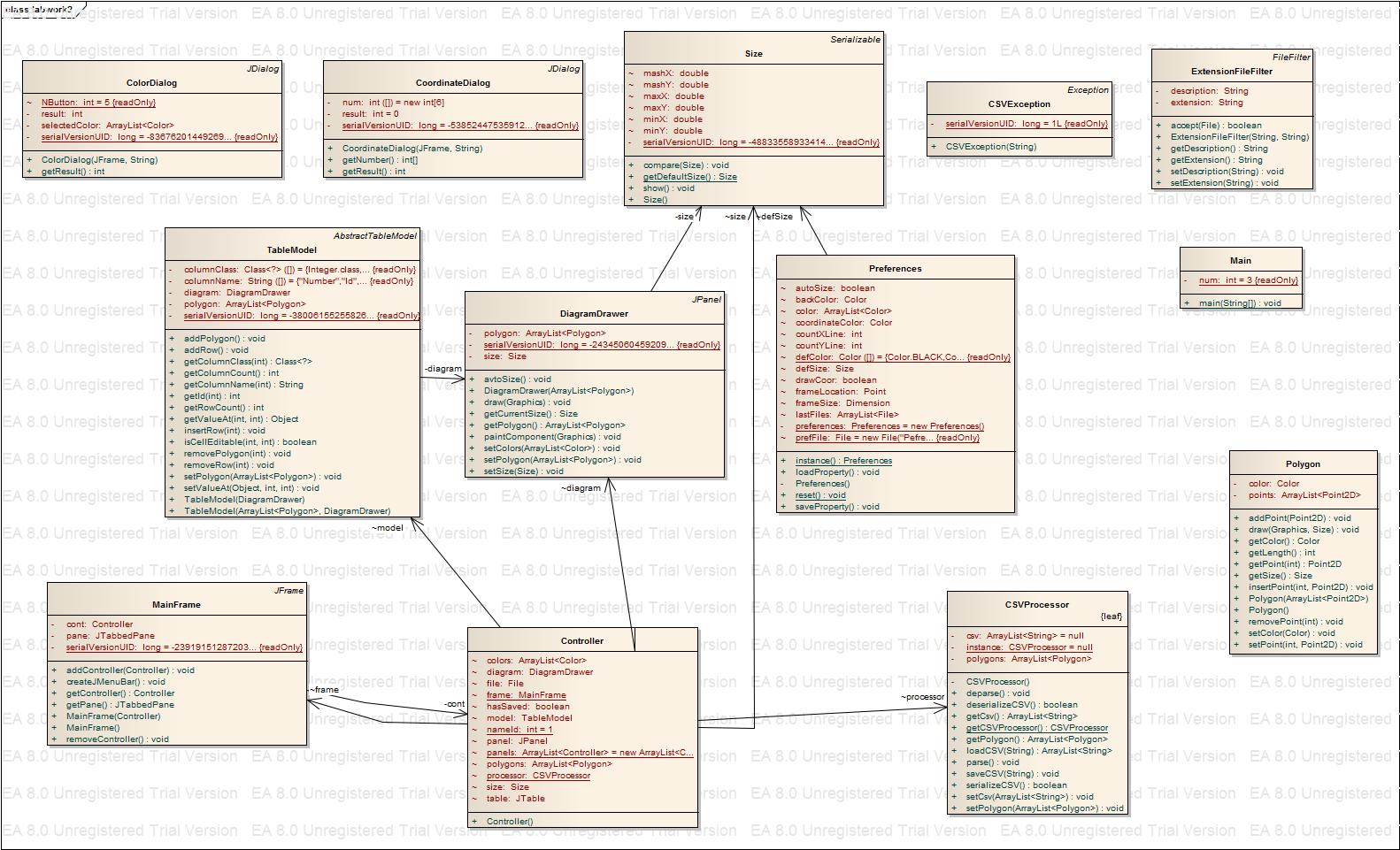
2. Користувач створює нову діаграму, імпортувавши csv-файл. < Пункт Table>, < Пункт New>

3. Користувач може виконати одну с наступних дій:

1. Зберегти діаграму{Перезапис вихідного файлу у форматі csv} (найбільш часто) < Пункт Table>, <Кнопка Save>
2. Зберегти діаграму у JPEG {Збереження у JPEG} (середньо) < Пункт Table>, <Пункт Import to JPEG>
3. Зберегти копію діаграми [Користувач може зберігати ту ж діаграму з іншим іменем (середньо) < Пункт Table> < Пункт Save As..>
4. Відредагувати відкриту діаграму [Користувач може видаляти елементи діаграми, їх змінювати та створювати нові, налаштовувати зовнішній вигляд діаграми](найбільш часто) < Пункт Point>, < Пункт Add>, < Пункт Insert>, < Пункт Remove>, < Пункт Add Chain>, < Пункт Remove Chain> , < Пункт Color>,
5. Змінити налаштування програми [Користувач може видаляти елементи діаграми, їх змінювати та створювати нові, налаштовувати зовнішній вигляд діаграми](нечасто) < Пункт Options>, < Пункт Default Colors>, < Пункт Back Color>, < Пункт Coordinate Color>, < Пункт Coordinate>, < Пункт Autosize> , < Пункт Draw Coordinate>, <Пункт Reset>

4. Прецедент закінчується, коли користувач завершує роботу з програмою.

**UML діаграма класів, реалізуючи потрібну структуру**



|  |  |
| --- | --- |
| Вікно MainFrame | MainFrame **extends** JFrame |
| Пункт меню New | javax.swing.JMenuItem ; |
| Пункт меню Open |
| Пункт меню Close |
| Пункт меню Save As.. |
| Пункт меню Save |
| Пункт меню SaveCSV |
| Пункт меню Import to JPEG |
| Пункт меню Exit |
| Пункт меню Coordinate |
| Пункт меню Coordinate color |
| Пункт меню Default Colors |
| Пункт меню Reset |
| Пункт меню Color |
| Пункт меню Add Chain |
| Пункт меню Remove Chain |
| Пункт меню Remove |
| Пункт меню Add |
| Пункт меню Insert |
| Таблиця | javax.swing.AbstractTableModel |
| Графічна область | DiagramDrawer extends javax.swing.JPanel; |
| Пункт меню Table | javax.swing.JMenu ; |
| Пункт меню Point | javax.swing.JMenu ;  ColorDialog **extends** javax.swing .JDialog{ |
| Пункт меню Options |
| Вікно Default Colors |
| Вікно Background Colors | javax.swing .JColorChooser |
| Вікно Coordinate Color | javax.swing .JColorChooser |
| Autosize->Yes\NO | javax.swing .JRadioButtonMenuItem |
| Draw Coordinate->Yes\NO | javax.swing .JRadioButtonMenuItem |
| Вікно Select Size | javax.swing.MainFrame |
|  |  |

**4.Розробка програмного забезпечення**

**Скріншоти програми**

Графічний інтерфейс програми досить простий для опанування. Процес створення та редагування діаграм є інтуїтивно зрозумілим та простим. В цьому можна переконатись на скріншотах нижче.

Пункт меню Table в основному відповідає за роботу з файлами( там можна знайти пункти Open, New, Save, Save As, Import to JPEG та пункт виходу Exit)

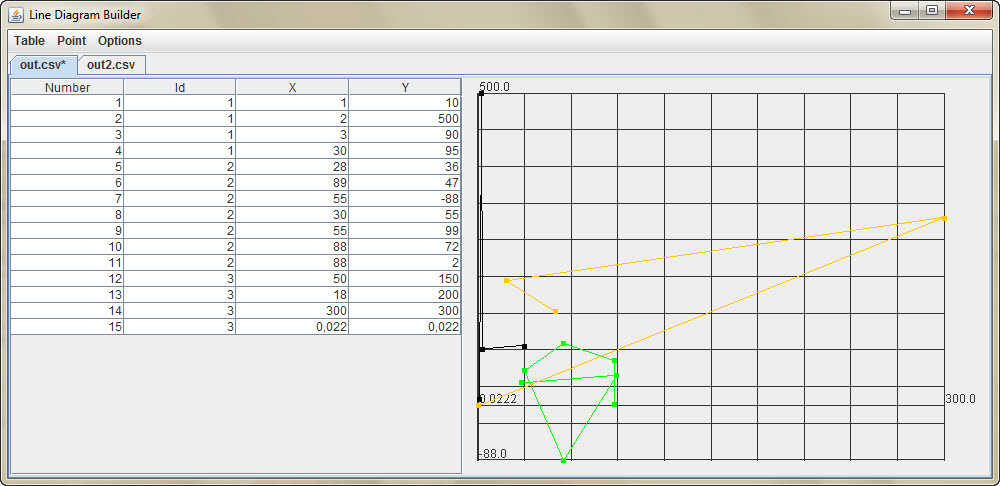


Рис. 3.2. Вигляд головного вікна програми

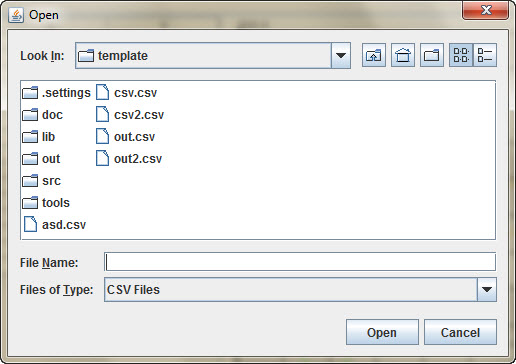


Рис. 3.3. Діалог відкриття CSV файлу

Пункт меню Point використовується для редагування графічної області через зміну табличної (додавання, видалення точок/ліній, зміна їх кольору)

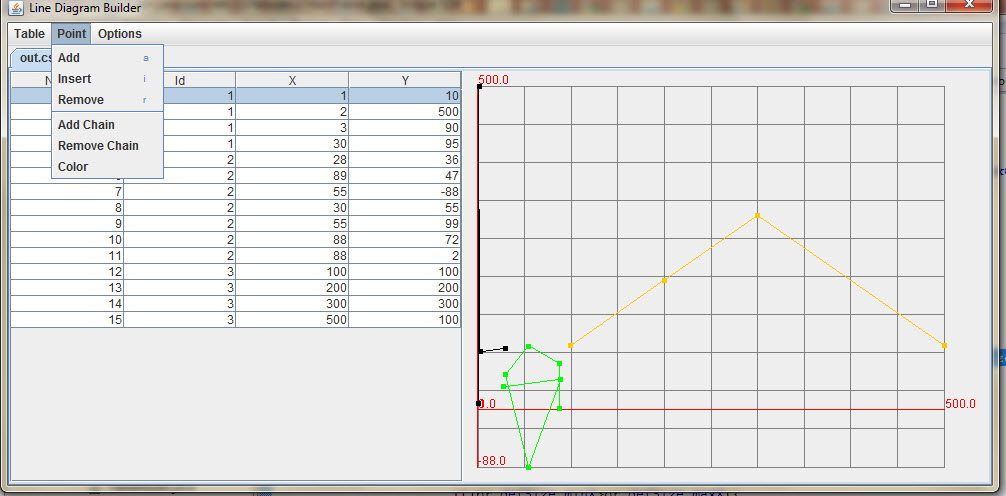


Рис.3.4. Використання меню для редагування діаграми

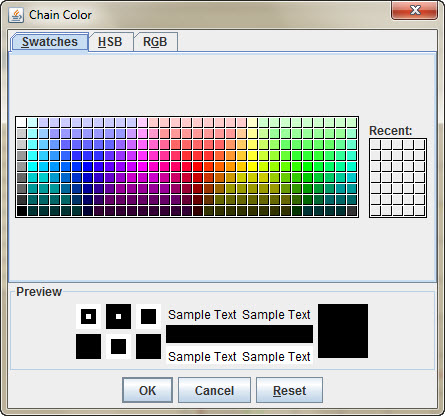


Рис.3.5. Діалог вибору кольору для лінії

Пункт меню Options використовується для зміни налаштувань програми ( редагування стандартних кольорів, масштабу, використання координатної сітки та осей координат та інше)

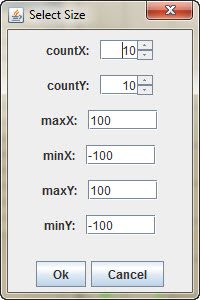
. 

Рис.3.6 Вікно вибору масштабу та розміру координатної сітки

**Javadoc**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **[Package](file:///D:\\workspace\\template\\doc\\com\\lab111\\labwork2\\package-summary.html)** | Class | [**Use**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-use.html) | [**Tree**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-tree.html) | [**Deprecated**](file:///D:\workspace\template\doc\deprecated-list.html) | [**Index**](file:///D:\workspace\template\doc\index-files\index-1.html) | [**Help**](file:///D:\workspace\template\doc\help-doc.html) | | |  |
| PREV PACKAGE   NEXT PACKAGE | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/package-summary.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-summary.html) |

## Package com.lab111.labwork2

|  |  |
| --- | --- |
| **Class Summary** | |
| [**ColorDialog**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html) | Class represented the dialog for select default colors |
| [**Controller**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) | Class-controller |
| [**CoordinateDialog**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html) | Class represented dialog for load diagram scale and size |
| [**CSVProcessor**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) | Class for CSV. |
| [**DiagramDrawer**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) | panel on which to draw the diagram |
| [**ExtensionFileFilter**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html) | Filter for csv files |
| [**Main**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html) | test class |
| [**MainFrame**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html) | Main frame of the interface There is all functionality here |
| [**Polygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html) | class that present polygon |
| [**Preferences**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html) | class for Options which will loaded for program |
| [**Size**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | class that represented the size and scale in diagram using for drawing the polygons |
| [**TableModel**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) | model of tabel extends abstract table model |

|  |  |
| --- | --- |
| **Exception Summary** | |
| [**CSVException**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html) | class for Exceptions |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **[Package](file:///D:\\workspace\\template\\doc\\com\\lab111\\labwork2\\package-summary.html)** | Class | [**Use**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-use.html) | [**Tree**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-tree.html) | [**Deprecated**](file:///D:\workspace\template\doc\deprecated-list.html) | [**Index**](file:///D:\workspace\template\doc\index-files\index-1.html) | [**Help**](file:///D:\workspace\template\doc\help-doc.html) | | |  |
| PREV PACKAGE   NEXT PACKAGE | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/package-summary.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-summary.html) |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | [**Package**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-summary.html) | Class | Use | **Tree** | [**Deprecated**](file:///D:\workspace\template\doc\deprecated-list.html) | [**Index**](file:///D:\workspace\template\doc\index-files\index-1.html) | [**Help**](file:///D:\workspace\template\doc\help-doc.html) | | |  |
| PREV   NEXT | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/package-tree.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-tree.html) |

## Hierarchy For Package com.lab111.labwork2

## Class Hierarchy

* java.lang.Object
  + javax.swing.table.AbstractTableModel (implements java.io.Serializable, javax.swing.table.TableModel)
    - com.lab111.labwork2.[**TableModel**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html)
  + java.awt.Component (implements java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable)
    - java.awt.Container
      * javax.swing.JComponent (implements java.io.Serializable)
        + javax.swing.JPanel (implements javax.accessibility.Accessible)

com.lab111.labwork2.[**DiagramDrawer**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html)

* + - * java.awt.Window (implements javax.accessibility.Accessible)
        + java.awt.Dialog

javax.swing.JDialog (implements javax.accessibility.Accessible, javax.swing.RootPaneContainer, javax.swing.WindowConstants)

com.lab111.labwork2.[**ColorDialog**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html)

com.lab111.labwork2.[**CoordinateDialog**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html)

* + - * + java.awt.Frame (implements java.awt.MenuContainer)

javax.swing.JFrame (implements javax.accessibility.Accessible, javax.swing.RootPaneContainer, javax.swing.WindowConstants)

com.lab111.labwork2.[**MainFrame**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html)

* + com.lab111.labwork2.[**Controller**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html)
  + com.lab111.labwork2.[**CSVProcessor**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html)
  + javax.swing.filechooser.FileFilter
    - com.lab111.labwork2.[**ExtensionFileFilter**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html)
  + com.lab111.labwork2.[**Main**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html)
  + com.lab111.labwork2.[**Polygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)
  + com.lab111.labwork2.[**Preferences**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html)
  + com.lab111.labwork2.[**Size**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) (implements java.io.Serializable)
  + java.lang.Throwable (implements java.io.Serializable)
    - java.lang.Exception
      * com.lab111.labwork2.[**CSVException**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html)

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| PREV CLASS   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/ColorDialog.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html) |
| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#nested_classes_inherited_from_class_javax.swing.JDialog) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#field_summary) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#method_summary) | DETAIL: [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#field_detail) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#method_detail) |

## com.lab111.labwork2 Class ColorDialog

java.lang.Object

extended by java.awt.Component

extended by java.awt.Container

extended by java.awt.Window

extended by java.awt.Dialog

extended by javax.swing.JDialog

extended by **com.lab111.labwork2.ColorDialog**

**All Implemented Interfaces:**

java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible, javax.swing.RootPaneContainer, javax.swing.WindowConstants

public class **ColorDialog**

extends javax.swing.JDialog

Class represented the dialog for select default colors

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.ColorDialog)

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| --- |
| **Nested Class Summary** |

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| --- |
| **Nested classes/interfaces inherited from class javax.swing.JDialog** |
| javax.swing.JDialog.AccessibleJDialog |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Dialog** |
| java.awt.Dialog.AccessibleAWTDialog, java.awt.Dialog.ModalExclusionType, java.awt.Dialog.ModalityType |

|  |
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| **Nested classes/interfaces inherited from class java.awt.Window** |
| java.awt.Window.AccessibleAWTWindow |

|  |
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| **Nested classes/interfaces inherited from class java.awt.Container** |
| java.awt.Container.AccessibleAWTContainer |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Component** |
| java.awt.Component.AccessibleAWTComponent, java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy |

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| **Field Summary** | |
| (package private) static int | [**NButton**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#NButton)            success of selecting the color |

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| --- |
| **Fields inherited from class javax.swing.JDialog** |
| accessibleContext, rootPane, rootPaneCheckingEnabled |

|  |
| --- |
| **Fields inherited from class java.awt.Dialog** |
| DEFAULT\_MODALITY\_TYPE |

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| --- |
| **Fields inherited from class java.awt.Component** |
| BOTTOM\_ALIGNMENT, CENTER\_ALIGNMENT, LEFT\_ALIGNMENT, RIGHT\_ALIGNMENT, TOP\_ALIGNMENT |

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| **Fields inherited from interface javax.swing.WindowConstants** |
| DISPOSE\_ON\_CLOSE, DO\_NOTHING\_ON\_CLOSE, EXIT\_ON\_CLOSE, HIDE\_ON\_CLOSE |

|  |
| --- |
| **Fields inherited from interface java.awt.image.ImageObserver** |
| ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH |

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| **Constructor Summary** | |
| [**ColorDialog**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#ColorDialog%28javax.swing.JFrame,%20java.lang.String%29)(javax.swing.JFrame owner, java.lang.String title)            constructor |  |

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| **Method Summary** | |
| int | [**getResult**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#getResult%28%29)()            return success of operation |

|  |
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| **Methods inherited from class javax.swing.JDialog** |
| addImpl, createRootPane, dialogInit, getAccessibleContext, getContentPane, getDefaultCloseOperation, getGlassPane, getGraphics, getJMenuBar, getLayeredPane, getRootPane, getTransferHandler, isDefaultLookAndFeelDecorated, isRootPaneCheckingEnabled, paramString, processWindowEvent, remove, repaint, setContentPane, setDefaultCloseOperation, setDefaultLookAndFeelDecorated, setGlassPane, setJMenuBar, setLayeredPane, setLayout, setRootPane, setRootPaneCheckingEnabled, setTransferHandler, update |

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| **Methods inherited from class java.awt.Dialog** |
| addNotify, getModalityType, getTitle, hide, isModal, isResizable, isUndecorated, setModal, setModalityType, setResizable, setTitle, setUndecorated, setVisible, show, toBack |

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| **Methods inherited from class java.awt.Window** |
| addPropertyChangeListener, addPropertyChangeListener, addWindowFocusListener, addWindowListener, addWindowStateListener, applyResourceBundle, applyResourceBundle, createBufferStrategy, createBufferStrategy, dispose, getBufferStrategy, getFocusableWindowState, getFocusCycleRootAncestor, getFocusOwner, getFocusTraversalKeys, getGraphicsConfiguration, getIconImages, getInputContext, getListeners, getLocale, getModalExclusionType, getMostRecentFocusOwner, getOwnedWindows, getOwner, getOwnerlessWindows, getToolkit, getWarningString, getWindowFocusListeners, getWindowListeners, getWindows, getWindowStateListeners, isActive, isAlwaysOnTop, isAlwaysOnTopSupported, isFocusableWindow, isFocusCycleRoot, isFocused, isLocationByPlatform, isShowing, pack, paint, postEvent, processEvent, processWindowFocusEvent, processWindowStateEvent, removeNotify, removeWindowFocusListener, removeWindowListener, removeWindowStateListener, reshape, setAlwaysOnTop, setBounds, setBounds, setCursor, setFocusableWindowState, setFocusCycleRoot, setIconImage, setIconImages, setLocationByPlatform, setLocationRelativeTo, setMinimumSize, setModalExclusionType, setSize, setSize, toFront |

|  |
| --- |
| **Methods inherited from class java.awt.Container** |
| add, add, add, add, add, addContainerListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getAlignmentX, getAlignmentY, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalPolicy, getInsets, getLayout, getMaximumSize, getMinimumSize, getMousePosition, getPreferredSize, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, print, printComponents, processContainerEvent, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusTraversalKeys, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setFont, transferFocusBackward, transferFocusDownCycle, validate, validateTree |

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| **Methods inherited from class java.awt.Component** |
| action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, bounds, checkImage, checkImage, coalesceEvents, contains, contains, createImage, createImage, createVolatileImage, createVolatileImage, disable, disableEvents, dispatchEvent, enable, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBaseline, getBaselineResizeBehavior, getBounds, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getFontMetrics, getForeground, getHeight, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocation, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getSize, getTreeLock, getWidth, getX, getY, gotFocus, handleEvent, hasFocus, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isDoubleBuffered, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isOpaque, isPreferredSizeSet, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, prepareImage, prepareImage, printAll, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processKeyEvent, processMouseEvent, processMouseMotionEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resize, resize, setBackground, setComponentOrientation, setDropTarget, setEnabled, setFocusable, setFocusTraversalKeysEnabled, setForeground, setIgnoreRepaint, setLocale, setLocation, setLocation, setMaximumSize, setName, setPreferredSize, show, size, toString, transferFocus, transferFocusUpCycle |

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| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait |

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| **Field Detail** |

### NButton

static final int **NButton**

success of selecting the color

**See Also:**

[Constant Field Values](file:///D:\workspace\template\doc\constant-values.html#com.lab111.labwork2.ColorDialog.NButton)

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| **Constructor Detail** |

### ColorDialog

public **ColorDialog**(javax.swing.JFrame owner,

java.lang.String title)

constructor

**Parameters:**

owner - frame

title - title of frame

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| **Method Detail** |

### getResult

public int **getResult**()

return success of operation

**Returns:**

result

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| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#nested_classes_inherited_from_class_javax.swing.JDialog) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#field_summary) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#method_summary) | DETAIL: [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#field_detail) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html#method_detail) |

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## com.lab111.labwork2 Class Controller

java.lang.Object

extended by **com.lab111.labwork2.Controller**

public class **Controller**

extends java.lang.Object

Class-controller

**Author:**

click

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| **Field Summary** | |
| (package private)  java.util.ArrayList<java.awt.Color> | [**colors**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#colors)            list of colors |
| (package private)  [DiagramDrawer](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) | [**diagram**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#diagram)            diagram |
| (package private)  java.io.File | [**file**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#file)            source file |
| (package private) static [MainFrame](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html) | [**frame**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#frame)            main frame |
| (package private)  boolean | [**hasSaved**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#hasSaved)            sign saving |
| (package private)  [TableModel](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) | [**model**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#model)            model of tabel |
| (package private) static int | [**nameId**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#nameId)            identficator that adding to new files |
| (package private)  javax.swing.JPanel | [**panel**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#panel)            panel for graphics |
| (package private) static java.util.ArrayList<[Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html)> | [**panels**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#panels)            list opened panels |
| (package private)  java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> | [**polygons**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#polygons)            list of polygons |
| (package private) static [CSVProcessor](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) | [**processor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#processor)            processor for work with files |
| (package private)  [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**size**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#size)            size for drawing |
| (package private)  javax.swing.JTable | [**table**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#table)            table- swing object |

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| **Constructor Summary** | |
| [**Controller**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html#Controller%28%29)()            empty constructor |  |

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| **Method Summary** |

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| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

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| **Field Detail** |

### polygons

java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> **polygons**

list of polygons

### size

[Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) **size**

size for drawing

### colors

java.util.ArrayList<java.awt.Color> **colors**

list of colors

### file

java.io.File **file**

source file

### diagram

[DiagramDrawer](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) **diagram**

diagram

### model

[TableModel](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) **model**

model of tabel

### table

javax.swing.JTable **table**

table- swing object

### panel

javax.swing.JPanel **panel**

panel for graphics

### hasSaved

boolean **hasSaved**

sign saving

### panels

static java.util.ArrayList<[Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html)> **panels**

list opened panels

### nameId

static int **nameId**

identficator that adding to new files

### processor

static [CSVProcessor](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) **processor**

processor for work with files

### frame

static [MainFrame](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html) **frame**

main frame

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| **Constructor Detail** |

### Controller

public **Controller**()

empty constructor

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\ColorDialog.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Controller.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) |
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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/CoordinateDialog.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html) |
| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#nested_classes_inherited_from_class_javax.swing.JDialog) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#fields_inherited_from_class_javax.swing.JDialog) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#method_detail) |

## com.lab111.labwork2 Class CoordinateDialog

java.lang.Object

extended by java.awt.Component

extended by java.awt.Container

extended by java.awt.Window

extended by java.awt.Dialog

extended by javax.swing.JDialog

extended by **com.lab111.labwork2.CoordinateDialog**

**All Implemented Interfaces:**

java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible, javax.swing.RootPaneContainer, javax.swing.WindowConstants

public class **CoordinateDialog**

extends javax.swing.JDialog

Class represented dialog for load diagram scale and size

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.CoordinateDialog)

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| **Nested Class Summary** |

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| --- |
| **Nested classes/interfaces inherited from class javax.swing.JDialog** |
| javax.swing.JDialog.AccessibleJDialog |

|  |
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| **Nested classes/interfaces inherited from class java.awt.Dialog** |
| java.awt.Dialog.AccessibleAWTDialog, java.awt.Dialog.ModalExclusionType, java.awt.Dialog.ModalityType |

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| **Nested classes/interfaces inherited from class java.awt.Window** |
| java.awt.Window.AccessibleAWTWindow |

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| **Nested classes/interfaces inherited from class java.awt.Container** |
| java.awt.Container.AccessibleAWTContainer |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Component** |
| java.awt.Component.AccessibleAWTComponent, java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy |

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| **Field Summary** |

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| **Fields inherited from class javax.swing.JDialog** |
| accessibleContext, rootPane, rootPaneCheckingEnabled |

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| **Fields inherited from class java.awt.Dialog** |
| DEFAULT\_MODALITY\_TYPE |

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| --- |
| **Fields inherited from class java.awt.Component** |
| BOTTOM\_ALIGNMENT, CENTER\_ALIGNMENT, LEFT\_ALIGNMENT, RIGHT\_ALIGNMENT, TOP\_ALIGNMENT |

|  |
| --- |
| **Fields inherited from interface javax.swing.WindowConstants** |
| DISPOSE\_ON\_CLOSE, DO\_NOTHING\_ON\_CLOSE, EXIT\_ON\_CLOSE, HIDE\_ON\_CLOSE |

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| --- |
| **Fields inherited from interface java.awt.image.ImageObserver** |
| ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH |

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| **Constructor Summary** | |
| [**CoordinateDialog**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#CoordinateDialog%28javax.swing.JFrame,%20java.lang.String%29)(javax.swing.JFrame owner, java.lang.String title) |  |

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| **Method Summary** | |
| int[] | [**getNumber**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#getNumber%28%29)()            return the selected value |
| int | [**getResult**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#getResult%28%29)()            return the success of operation |

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| **Methods inherited from class javax.swing.JDialog** |
| addImpl, createRootPane, dialogInit, getAccessibleContext, getContentPane, getDefaultCloseOperation, getGlassPane, getGraphics, getJMenuBar, getLayeredPane, getRootPane, getTransferHandler, isDefaultLookAndFeelDecorated, isRootPaneCheckingEnabled, paramString, processWindowEvent, remove, repaint, setContentPane, setDefaultCloseOperation, setDefaultLookAndFeelDecorated, setGlassPane, setJMenuBar, setLayeredPane, setLayout, setRootPane, setRootPaneCheckingEnabled, setTransferHandler, update |

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| **Methods inherited from class java.awt.Dialog** |
| addNotify, getModalityType, getTitle, hide, isModal, isResizable, isUndecorated, setModal, setModalityType, setResizable, setTitle, setUndecorated, setVisible, show, toBack |

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| **Methods inherited from class java.awt.Window** |
| addPropertyChangeListener, addPropertyChangeListener, addWindowFocusListener, addWindowListener, addWindowStateListener, applyResourceBundle, applyResourceBundle, createBufferStrategy, createBufferStrategy, dispose, getBufferStrategy, getFocusableWindowState, getFocusCycleRootAncestor, getFocusOwner, getFocusTraversalKeys, getGraphicsConfiguration, getIconImages, getInputContext, getListeners, getLocale, getModalExclusionType, getMostRecentFocusOwner, getOwnedWindows, getOwner, getOwnerlessWindows, getToolkit, getWarningString, getWindowFocusListeners, getWindowListeners, getWindows, getWindowStateListeners, isActive, isAlwaysOnTop, isAlwaysOnTopSupported, isFocusableWindow, isFocusCycleRoot, isFocused, isLocationByPlatform, isShowing, pack, paint, postEvent, processEvent, processWindowFocusEvent, processWindowStateEvent, removeNotify, removeWindowFocusListener, removeWindowListener, removeWindowStateListener, reshape, setAlwaysOnTop, setBounds, setBounds, setCursor, setFocusableWindowState, setFocusCycleRoot, setIconImage, setIconImages, setLocationByPlatform, setLocationRelativeTo, setMinimumSize, setModalExclusionType, setSize, setSize, toFront |

|  |
| --- |
| **Methods inherited from class java.awt.Container** |
| add, add, add, add, add, addContainerListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getAlignmentX, getAlignmentY, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalPolicy, getInsets, getLayout, getMaximumSize, getMinimumSize, getMousePosition, getPreferredSize, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, print, printComponents, processContainerEvent, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusTraversalKeys, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setFont, transferFocusBackward, transferFocusDownCycle, validate, validateTree |

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| **Methods inherited from class java.awt.Component** |
| action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, bounds, checkImage, checkImage, coalesceEvents, contains, contains, createImage, createImage, createVolatileImage, createVolatileImage, disable, disableEvents, dispatchEvent, enable, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBaseline, getBaselineResizeBehavior, getBounds, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getFontMetrics, getForeground, getHeight, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocation, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getSize, getTreeLock, getWidth, getX, getY, gotFocus, handleEvent, hasFocus, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isDoubleBuffered, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isOpaque, isPreferredSizeSet, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, prepareImage, prepareImage, printAll, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processKeyEvent, processMouseEvent, processMouseMotionEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resize, resize, setBackground, setComponentOrientation, setDropTarget, setEnabled, setFocusable, setFocusTraversalKeysEnabled, setForeground, setIgnoreRepaint, setLocale, setLocation, setLocation, setMaximumSize, setName, setPreferredSize, show, size, toString, transferFocus, transferFocusUpCycle |

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| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait |

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| **Constructor Detail** |

### CoordinateDialog

public **CoordinateDialog**(javax.swing.JFrame owner,

java.lang.String title)

|  |
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| **Method Detail** |

### getResult

public int **getResult**()

return the success of operation

**Returns:**

result

### getNumber

public int[] **getNumber**()

return the selected value

**Returns:**

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/CoordinateDialog.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html) |
| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#nested_classes_inherited_from_class_javax.swing.JDialog) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#fields_inherited_from_class_javax.swing.JDialog) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html#method_detail) |

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| SUMMARY: NESTED | FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#methods_inherited_from_class_java.lang.Throwable) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#constructor_detail) | METHOD |

## com.lab111.labwork2 Class CSVException

java.lang.Object

extended by java.lang.Throwable

extended by java.lang.Exception

extended by **com.lab111.labwork2.CSVException**

**All Implemented Interfaces:**

java.io.Serializable

public class **CSVException**

extends java.lang.Exception

class for Exceptions

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.CSVException)

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| **Constructor Summary** | |
| [**CSVException**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#CSVException%28java.lang.String%29)(java.lang.String string)            throwing the exception message |  |

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| **Method Summary** |

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| --- |
| **Methods inherited from class java.lang.Throwable** |
| fillInStackTrace, getCause, getLocalizedMessage, getMessage, getStackTrace, initCause, printStackTrace, printStackTrace, printStackTrace, setStackTrace, toString |

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| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait |

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| **Constructor Detail** |

### CSVException

public **CSVException**(java.lang.String string)

throwing the exception message

**Parameters:**

string -

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CoordinateDialog.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/CSVException.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#methods_inherited_from_class_java.lang.Throwable) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html#constructor_detail) | METHOD |

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| SUMMARY: NESTED | FIELD | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#method_summary) | DETAIL: FIELD | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#method_detail) |

## com.lab111.labwork2 Class CSVProcessor

java.lang.Object

extended by **com.lab111.labwork2.CSVProcessor**

public final class **CSVProcessor**

extends java.lang.Object

Class for CSV.

**Author:**

click

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| **Method Summary** | |
| void | [**deparse**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#deparse%28%29)()            method deparsing polygons to strings |
| boolean | [**deserializeCSV**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#deserializeCSV%28%29)()            deserialize serialized.dat . |
| java.util.ArrayList<java.lang.String> | [**getCsv**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#getCsv%28%29)()            csv getter. |
| static [CSVProcessor](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) | [**getCSVProcessor**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#getCSVProcessor%28%29)()            Singleton getter. |
| java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> | [**getPolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#getPolygon%28%29)() |
| java.util.ArrayList<java.lang.String> | [**loadCSV**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#loadCSV%28java.lang.String%29)(java.lang.String path)            Load CSV from file. |
| void | [**parse**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#parse%28%29)()            method for parsing data into the list of string processed data writes into the list and output to the monitor |
| void | [**saveCSV**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#saveCSV%28java.lang.String%29)(java.lang.String path)            Save csv to file. |
| boolean | [**serializeCSV**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#serializeCSV%28%29)()            serialize serialized.dat . |
| void | [**setCsv**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#setCsv%28java.util.ArrayList%29)(java.util.ArrayList<java.lang.String> csv)            setter for csv agregate. |
| void | [**setPolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#setPolygon%28java.util.ArrayList%29)(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list) |

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| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

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| **Method Detail** |

### getCSVProcessor

public static [CSVProcessor](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) **getCSVProcessor**()

Singleton getter.

**Returns:**

CSVProcessor

### getCsv

public java.util.ArrayList<java.lang.String> **getCsv**()

csv getter.

**Returns:**

csv agregate

### setCsv

public void **setCsv**(java.util.ArrayList<java.lang.String> csv)

setter for csv agregate.

**Parameters:**

csv - arraylist of Strings

### loadCSV

public java.util.ArrayList<java.lang.String> **loadCSV**(java.lang.String path)

throws java.io.FileNotFoundException

Load CSV from file.

**Parameters:**

path - - path to file

**Returns:**

Arraylist

**Throws:**

java.io.FileNotFoundException - when file not exsist

### saveCSV

public void **saveCSV**(java.lang.String path)

throws java.io.IOException

Save csv to file.

**Parameters:**

path - to file

**Throws:**

java.io.IOException - if file can not be loaded

### serializeCSV

public boolean **serializeCSV**()

serialize serialized.dat .

**Returns:**

boolean success of operation

### deserializeCSV

public boolean **deserializeCSV**()

deserialize serialized.dat .

**Returns:**

boolean success of operation

### parse

public void **parse**()

throws [CSVException](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html)

method for parsing data into the list of string processed data writes into the list and output to the monitor

**Throws:**

[CSVException](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html) - throwing when data does not mach format or there are unnecessary data in csv or there aren't all data fields

### deparse

public void **deparse**()

method deparsing polygons to strings

### getPolygon

public java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> **getPolygon**()

**Returns:**

list of polygons

### setPolygon

public void **setPolygon**(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)

**Parameters:**

list - of polyogns

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVException.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/CSVProcessor.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html) |
| SUMMARY: NESTED | FIELD | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#method_summary) | DETAIL: FIELD | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html#method_detail) |

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/DiagramDrawer.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) |
| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#nested_classes_inherited_from_class_javax.swing.JPanel) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#fields_inherited_from_class_javax.swing.JComponent) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#method_detail) |

## com.lab111.labwork2 Class DiagramDrawer

java.lang.Object

extended by java.awt.Component

extended by java.awt.Container

extended by javax.swing.JComponent

extended by javax.swing.JPanel

extended by **com.lab111.labwork2.DiagramDrawer**

**All Implemented Interfaces:**

java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible

public class **DiagramDrawer**

extends javax.swing.JPanel

panel on which to draw the diagram

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.DiagramDrawer)

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| **Nested Class Summary** |

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| --- |
| **Nested classes/interfaces inherited from class javax.swing.JPanel** |
| javax.swing.JPanel.AccessibleJPanel |

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| --- |
| **Nested classes/interfaces inherited from class javax.swing.JComponent** |
| javax.swing.JComponent.AccessibleJComponent |

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| --- |
| **Nested classes/interfaces inherited from class java.awt.Container** |
| java.awt.Container.AccessibleAWTContainer |

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| **Nested classes/interfaces inherited from class java.awt.Component** |
| java.awt.Component.AccessibleAWTComponent, java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy |

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| **Field Summary** |

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| **Fields inherited from class javax.swing.JComponent** |
| accessibleContext, listenerList, TOOL\_TIP\_TEXT\_KEY, ui, UNDEFINED\_CONDITION, WHEN\_ANCESTOR\_OF\_FOCUSED\_COMPONENT, WHEN\_FOCUSED, WHEN\_IN\_FOCUSED\_WINDOW |

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| **Fields inherited from class java.awt.Component** |
| BOTTOM\_ALIGNMENT, CENTER\_ALIGNMENT, LEFT\_ALIGNMENT, RIGHT\_ALIGNMENT, TOP\_ALIGNMENT |

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| **Fields inherited from interface java.awt.image.ImageObserver** |
| ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH |

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| **Constructor Summary** | |
| [**DiagramDrawer**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#DiagramDrawer%28java.util.ArrayList%29)(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)            constructor |  |

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| **Method Summary** | |
| void | [**avtoSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#avtoSize%28%29)()            calculate the size for all polygons |
| void | [**draw**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#draw%28java.awt.Graphics%29)(java.awt.Graphics g)            drawing the diagram |
| [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**getCurrentSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#getCurrentSize%28%29)()            get size |
| java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> | [**getPolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#getPolygon%28%29)()            return polygon |
| void | [**paintComponent**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#paintComponent%28java.awt.Graphics%29)(java.awt.Graphics g)            override paint component |
| void | [**setColors**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#setColors%28java.util.ArrayList%29)(java.util.ArrayList<java.awt.Color> list)            set the color of all polygons |
| void | [**setPolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#setPolygon%28java.util.ArrayList%29)(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)            set the list of polygons |
| void | [**setSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#setSize%28com.lab111.labwork2.Size%29)([Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) s)            set the size for drawing |

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| **Methods inherited from class javax.swing.JPanel** |
| getAccessibleContext, getUI, getUIClassID, paramString, setUI, updateUI |

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| **Methods inherited from class javax.swing.JComponent** |
| addAncestorListener, addNotify, addVetoableChangeListener, computeVisibleRect, contains, createToolTip, disable, enable, firePropertyChange, firePropertyChange, firePropertyChange, fireVetoableChange, getActionForKeyStroke, getActionMap, getAlignmentX, getAlignmentY, getAncestorListeners, getAutoscrolls, getBaseline, getBaselineResizeBehavior, getBorder, getBounds, getClientProperty, getComponentGraphics, getComponentPopupMenu, getConditionForKeyStroke, getDebugGraphicsOptions, getDefaultLocale, getFontMetrics, getGraphics, getHeight, getInheritsPopupMenu, getInputMap, getInputMap, getInputVerifier, getInsets, getInsets, getListeners, getLocation, getMaximumSize, getMinimumSize, getNextFocusableComponent, getPopupLocation, getPreferredSize, getRegisteredKeyStrokes, getRootPane, getSize, getToolTipLocation, getToolTipText, getToolTipText, getTopLevelAncestor, getTransferHandler, getVerifyInputWhenFocusTarget, getVetoableChangeListeners, getVisibleRect, getWidth, getX, getY, grabFocus, isDoubleBuffered, isLightweightComponent, isManagingFocus, isOpaque, isOptimizedDrawingEnabled, isPaintingForPrint, isPaintingTile, isRequestFocusEnabled, isValidateRoot, paint, paintBorder, paintChildren, paintImmediately, paintImmediately, print, printAll, printBorder, printChildren, printComponent, processComponentKeyEvent, processKeyBinding, processKeyEvent, processMouseEvent, processMouseMotionEvent, putClientProperty, registerKeyboardAction, registerKeyboardAction, removeAncestorListener, removeNotify, removeVetoableChangeListener, repaint, repaint, requestDefaultFocus, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resetKeyboardActions, reshape, revalidate, scrollRectToVisible, setActionMap, setAlignmentX, setAlignmentY, setAutoscrolls, setBackground, setBorder, setComponentPopupMenu, setDebugGraphicsOptions, setDefaultLocale, setDoubleBuffered, setEnabled, setFocusTraversalKeys, setFont, setForeground, setInheritsPopupMenu, setInputMap, setInputVerifier, setMaximumSize, setMinimumSize, setNextFocusableComponent, setOpaque, setPreferredSize, setRequestFocusEnabled, setToolTipText, setTransferHandler, setUI, setVerifyInputWhenFocusTarget, setVisible, unregisterKeyboardAction, update |

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| **Methods inherited from class java.awt.Container** |
| add, add, add, add, add, addContainerListener, addImpl, addPropertyChangeListener, addPropertyChangeListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalKeys, getFocusTraversalPolicy, getLayout, getMousePosition, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusCycleRoot, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setLayout, transferFocusBackward, transferFocusDownCycle, validate, validateTree |

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| **Methods inherited from class java.awt.Component** |
| action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, bounds, checkImage, checkImage, coalesceEvents, contains, createImage, createImage, createVolatileImage, createVolatileImage, disableEvents, dispatchEvent, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusCycleRootAncestor, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getForeground, getGraphicsConfiguration, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputContext, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocale, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getToolkit, getTreeLock, gotFocus, handleEvent, hasFocus, hide, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isPreferredSizeSet, isShowing, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processMouseWheelEvent, remove, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, resize, resize, setBounds, setBounds, setComponentOrientation, setCursor, setDropTarget, setFocusable, setFocusTraversalKeysEnabled, setIgnoreRepaint, setLocale, setLocation, setLocation, setName, setSize, setSize, show, show, size, toString, transferFocus, transferFocusUpCycle |

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| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait |

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| **Constructor Detail** |

### DiagramDrawer

public **DiagramDrawer**(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)

constructor

**Parameters:**

list - list of Polygons

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| **Method Detail** |

### paintComponent

public void **paintComponent**(java.awt.Graphics g)

override paint component

**Overrides:**

paintComponent in class javax.swing.JComponent

### draw

public void **draw**(java.awt.Graphics g)

drawing the diagram

**Parameters:**

g - graphic context

### setPolygon

public void **setPolygon**(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)

set the list of polygons

**Parameters:**

list - of polygons

### getPolygon

public java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> **getPolygon**()

return polygon

**Returns:**

polygon

### setSize

public void **setSize**([Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) s)

set the size for drawing

**Parameters:**

s - size

### getCurrentSize

public [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) **getCurrentSize**()

get size

**Returns:**

розмір

### avtoSize

public void **avtoSize**()

calculate the size for all polygons

### setColors

public void **setColors**(java.util.ArrayList<java.awt.Color> list)

set the color of all polygons

**Parameters:**

list -

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\CSVProcessor.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/DiagramDrawer.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) |
| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#nested_classes_inherited_from_class_javax.swing.JPanel) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#fields_inherited_from_class_javax.swing.JComponent) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html#method_detail) |

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| SUMMARY: NESTED | FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#method_detail) |

## com.lab111.labwork2 Class ExtensionFileFilter

java.lang.Object

extended by javax.swing.filechooser.FileFilter

extended by **com.lab111.labwork2.ExtensionFileFilter**

public class **ExtensionFileFilter**

extends javax.swing.filechooser.FileFilter

Filter for csv files

**Author:**

click

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| **Constructor Summary** | |
| [**ExtensionFileFilter**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#ExtensionFileFilter%28java.lang.String,%20java.lang.String%29)(java.lang.String exten, java.lang.String desc)            Constructor |  |

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| **Method Summary** | |
| boolean | [**accept**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#accept%28java.io.File%29)(java.io.File f)            check the file with the filter |
| java.lang.String | [**getDescription**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#getDescription%28%29)() |
| java.lang.String | [**getExtension**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#getExtension%28%29)()            return extension of the file |
| void | [**setDescription**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#setDescription%28java.lang.String%29)(java.lang.String aDescription)            set a description |
| void | [**setExtension**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html#setExtension%28java.lang.String%29)(java.lang.String extension)            set the extension |

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| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

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| **Constructor Detail** |

### ExtensionFileFilter

public **ExtensionFileFilter**(java.lang.String exten,

java.lang.String desc)

Constructor

**Parameters:**

exten - extension of the file

desc - description of the file

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| **Method Detail** |

### setExtension

public void **setExtension**(java.lang.String extension)

set the extension

**Parameters:**

extension -

### getExtension

public java.lang.String **getExtension**()

return extension of the file

**Returns:**

extension

### setDescription

public void **setDescription**(java.lang.String aDescription)

set a description

**Parameters:**

aDescription -

### getDescription

public java.lang.String **getDescription**()

**Specified by:**

getDescription in class javax.swing.filechooser.FileFilter

**Returns:**

description

### accept

public boolean **accept**(java.io.File f)

check the file with the filter

**Specified by:**

accept in class javax.swing.filechooser.FileFilter

**Parameters:**

f - target file

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/ExtensionFileFilter.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html) |
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## com.lab111.labwork2 Class Main

java.lang.Object

extended by **com.lab111.labwork2.Main**

public class **Main**

extends java.lang.Object

test class

**Author:**

click

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| **Constructor Summary** | |
| [**Main**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html#Main%28%29)() |  |

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| **Method Summary** | |
| static void | [**main**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html#main%28java.lang.String[]%29)(java.lang.String[] args) |

|  |
| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

|  |
| --- |
| **Constructor Detail** |

### Main

public **Main**()

|  |
| --- |
| **Method Detail** |

### main

public static void **main**(java.lang.String[] args)

throws java.lang.ClassNotFoundException,

java.io.IOException

**Parameters:**

args -

**Throws:**

java.lang.ClassNotFoundException

java.io.IOException

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\ExtensionFileFilter.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Main.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html#method_detail) |

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/MainFrame.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html) |
| SUMMARY: [NESTED](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#nested_classes_inherited_from_class_javax.swing.JFrame) | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#fields_inherited_from_class_javax.swing.JFrame) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#method_detail) |

## com.lab111.labwork2 Class MainFrame

java.lang.Object

extended by java.awt.Component

extended by java.awt.Container

extended by java.awt.Window

extended by java.awt.Frame

extended by javax.swing.JFrame

extended by **com.lab111.labwork2.MainFrame**

**All Implemented Interfaces:**

java.awt.image.ImageObserver, java.awt.MenuContainer, java.io.Serializable, javax.accessibility.Accessible, javax.swing.RootPaneContainer, javax.swing.WindowConstants

public class **MainFrame**

extends javax.swing.JFrame

Main frame of the interface There is all functionality here

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.MainFrame)

|  |
| --- |
| **Nested Class Summary** |

|  |
| --- |
| **Nested classes/interfaces inherited from class javax.swing.JFrame** |
| javax.swing.JFrame.AccessibleJFrame |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Frame** |
| java.awt.Frame.AccessibleAWTFrame |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Window** |
| java.awt.Window.AccessibleAWTWindow |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Container** |
| java.awt.Container.AccessibleAWTContainer |

|  |
| --- |
| **Nested classes/interfaces inherited from class java.awt.Component** |
| java.awt.Component.AccessibleAWTComponent, java.awt.Component.BaselineResizeBehavior, java.awt.Component.BltBufferStrategy, java.awt.Component.FlipBufferStrategy |

|  |
| --- |
| **Field Summary** |

|  |
| --- |
| **Fields inherited from class javax.swing.JFrame** |
| accessibleContext, EXIT\_ON\_CLOSE, rootPane, rootPaneCheckingEnabled |

|  |
| --- |
| **Fields inherited from class java.awt.Frame** |
| CROSSHAIR\_CURSOR, DEFAULT\_CURSOR, E\_RESIZE\_CURSOR, HAND\_CURSOR, ICONIFIED, MAXIMIZED\_BOTH, MAXIMIZED\_HORIZ, MAXIMIZED\_VERT, MOVE\_CURSOR, N\_RESIZE\_CURSOR, NE\_RESIZE\_CURSOR, NORMAL, NW\_RESIZE\_CURSOR, S\_RESIZE\_CURSOR, SE\_RESIZE\_CURSOR, SW\_RESIZE\_CURSOR, TEXT\_CURSOR, W\_RESIZE\_CURSOR, WAIT\_CURSOR |

|  |
| --- |
| **Fields inherited from class java.awt.Component** |
| BOTTOM\_ALIGNMENT, CENTER\_ALIGNMENT, LEFT\_ALIGNMENT, RIGHT\_ALIGNMENT, TOP\_ALIGNMENT |

|  |
| --- |
| **Fields inherited from interface javax.swing.WindowConstants** |
| DISPOSE\_ON\_CLOSE, DO\_NOTHING\_ON\_CLOSE, HIDE\_ON\_CLOSE |

|  |
| --- |
| **Fields inherited from interface java.awt.image.ImageObserver** |
| ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH |

|  |  |
| --- | --- |
| **Constructor Summary** | |
| [**MainFrame**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#MainFrame%28%29)()            empty constructor |  |
| [**MainFrame**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#MainFrame%28com.lab111.labwork2.Controller%29)([Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) c)            constructor |  |

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| **Method Summary** | |
| void | [**addController**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#addController%28com.lab111.labwork2.Controller%29)([Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) c)            adding new controller |
| void | [**createJMenuBar**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#createJMenuBar%28%29)()            creating menu -Table --New --Open --Close --Save --Save As.. |
| [Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) | [**getController**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#getController%28%29)()            getter for controller |
| javax.swing.JTabbedPane | [**getPane**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#getPane%28%29)()            getting the panel |
| void | [**removeController**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html#removeController%28%29)()            deleting controller |

|  |
| --- |
| **Methods inherited from class javax.swing.JFrame** |
| addImpl, createRootPane, frameInit, getAccessibleContext, getContentPane, getDefaultCloseOperation, getGlassPane, getGraphics, getJMenuBar, getLayeredPane, getRootPane, getTransferHandler, isDefaultLookAndFeelDecorated, isRootPaneCheckingEnabled, paramString, processWindowEvent, remove, repaint, setContentPane, setDefaultCloseOperation, setDefaultLookAndFeelDecorated, setGlassPane, setIconImage, setJMenuBar, setLayeredPane, setLayout, setRootPane, setRootPaneCheckingEnabled, setTransferHandler, update |

|  |
| --- |
| **Methods inherited from class java.awt.Frame** |
| addNotify, getCursorType, getExtendedState, getFrames, getIconImage, getMaximizedBounds, getMenuBar, getState, getTitle, isResizable, isUndecorated, remove, removeNotify, setCursor, setExtendedState, setMaximizedBounds, setMenuBar, setResizable, setState, setTitle, setUndecorated |

|  |
| --- |
| **Methods inherited from class java.awt.Window** |
| addPropertyChangeListener, addPropertyChangeListener, addWindowFocusListener, addWindowListener, addWindowStateListener, applyResourceBundle, applyResourceBundle, createBufferStrategy, createBufferStrategy, dispose, getBufferStrategy, getFocusableWindowState, getFocusCycleRootAncestor, getFocusOwner, getFocusTraversalKeys, getGraphicsConfiguration, getIconImages, getInputContext, getListeners, getLocale, getModalExclusionType, getMostRecentFocusOwner, getOwnedWindows, getOwner, getOwnerlessWindows, getToolkit, getWarningString, getWindowFocusListeners, getWindowListeners, getWindows, getWindowStateListeners, hide, isActive, isAlwaysOnTop, isAlwaysOnTopSupported, isFocusableWindow, isFocusCycleRoot, isFocused, isLocationByPlatform, isShowing, pack, paint, postEvent, processEvent, processWindowFocusEvent, processWindowStateEvent, removeWindowFocusListener, removeWindowListener, removeWindowStateListener, reshape, setAlwaysOnTop, setBounds, setBounds, setCursor, setFocusableWindowState, setFocusCycleRoot, setIconImages, setLocationByPlatform, setLocationRelativeTo, setMinimumSize, setModalExclusionType, setSize, setSize, setVisible, show, toBack, toFront |

|  |
| --- |
| **Methods inherited from class java.awt.Container** |
| add, add, add, add, add, addContainerListener, applyComponentOrientation, areFocusTraversalKeysSet, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getAlignmentX, getAlignmentY, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getComponentZOrder, getContainerListeners, getFocusTraversalPolicy, getInsets, getLayout, getMaximumSize, getMinimumSize, getMousePosition, getPreferredSize, insets, invalidate, isAncestorOf, isFocusCycleRoot, isFocusTraversalPolicyProvider, isFocusTraversalPolicySet, layout, list, list, locate, minimumSize, paintComponents, preferredSize, print, printComponents, processContainerEvent, remove, removeAll, removeContainerListener, setComponentZOrder, setFocusTraversalKeys, setFocusTraversalPolicy, setFocusTraversalPolicyProvider, setFont, transferFocusBackward, transferFocusDownCycle, validate, validateTree |

|  |
| --- |
| **Methods inherited from class java.awt.Component** |
| action, add, addComponentListener, addFocusListener, addHierarchyBoundsListener, addHierarchyListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addMouseWheelListener, bounds, checkImage, checkImage, coalesceEvents, contains, contains, createImage, createImage, createVolatileImage, createVolatileImage, disable, disableEvents, dispatchEvent, enable, enable, enableEvents, enableInputMethods, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, firePropertyChange, getBackground, getBaseline, getBaselineResizeBehavior, getBounds, getBounds, getColorModel, getComponentListeners, getComponentOrientation, getCursor, getDropTarget, getFocusListeners, getFocusTraversalKeysEnabled, getFont, getFontMetrics, getForeground, getHeight, getHierarchyBoundsListeners, getHierarchyListeners, getIgnoreRepaint, getInputMethodListeners, getInputMethodRequests, getKeyListeners, getLocation, getLocation, getLocationOnScreen, getMouseListeners, getMouseMotionListeners, getMousePosition, getMouseWheelListeners, getName, getParent, getPeer, getPropertyChangeListeners, getPropertyChangeListeners, getSize, getSize, getTreeLock, getWidth, getX, getY, gotFocus, handleEvent, hasFocus, imageUpdate, inside, isBackgroundSet, isCursorSet, isDisplayable, isDoubleBuffered, isEnabled, isFocusable, isFocusOwner, isFocusTraversable, isFontSet, isForegroundSet, isLightweight, isMaximumSizeSet, isMinimumSizeSet, isOpaque, isPreferredSizeSet, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, prepareImage, prepareImage, printAll, processComponentEvent, processFocusEvent, processHierarchyBoundsEvent, processHierarchyEvent, processInputMethodEvent, processKeyEvent, processMouseEvent, processMouseMotionEvent, processMouseWheelEvent, removeComponentListener, removeFocusListener, removeHierarchyBoundsListener, removeHierarchyListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removeMouseWheelListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, requestFocus, requestFocus, requestFocusInWindow, requestFocusInWindow, resize, resize, setBackground, setComponentOrientation, setDropTarget, setEnabled, setFocusable, setFocusTraversalKeysEnabled, setForeground, setIgnoreRepaint, setLocale, setLocation, setLocation, setMaximumSize, setName, setPreferredSize, show, size, toString, transferFocus, transferFocusUpCycle |

|  |
| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait |

|  |
| --- |
| **Methods inherited from interface java.awt.MenuContainer** |
| getFont, postEvent |

|  |
| --- |
| **Constructor Detail** |

### MainFrame

public **MainFrame**([Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) c)

constructor

**Parameters:**

c - Controller

### MainFrame

public **MainFrame**()

empty constructor

|  |
| --- |
| **Method Detail** |

### addController

public void **addController**([Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) c)

adding new controller

**Parameters:**

c - controller

### removeController

public void **removeController**()

deleting controller

### getController

public [Controller](file:///D:\workspace\template\doc\com\lab111\labwork2\Controller.html) **getController**()

getter for controller

**Returns:**

controller

### getPane

public javax.swing.JTabbedPane **getPane**()

getting the panel

**Returns:**

panel

### createJMenuBar

public void **createJMenuBar**()

creating menu -Table --New --Open --Close --Save --Save As.. --Import to JPEG --Exit -Point --Add --Insert --Remove --Add Chain --Remove Chain --Color -Options --Default Colors --Back Color --Coordinate Color --Coordinate --Autosize --Draw Coordinate --Reset

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Main.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/MainFrame.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html) |
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| SUMMARY: NESTED | FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#method_detail) |

## com.lab111.labwork2 Class Polygon

java.lang.Object

extended by **com.lab111.labwork2.Polygon**

public class **Polygon**

extends java.lang.Object

class that present polygon

**Author:**

click

|  |  |
| --- | --- |
| **Constructor Summary** | |
| [**Polygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#Polygon%28%29)()            constructor with empty parameters |  |
| [**Polygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#Polygon%28java.util.ArrayList%29)(java.util.ArrayList<java.awt.geom.Point2D> points)            constructor |  |

|  |  |
| --- | --- |
| **Method Summary** | |
| void | [**addPoint**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#addPoint%28java.awt.geom.Point2D%29)(java.awt.geom.Point2D p)            adding the point into the end |
| void | [**draw**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#draw%28java.awt.Graphics,%20com.lab111.labwork2.Size%29)(java.awt.Graphics g, [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) s)            drawing sequence of points |
| java.awt.Color | [**getColor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#getColor%28%29)()            getter for color |
| int | [**getLength**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#getLength%28%29)()            getter the the length |
| java.awt.geom.Point2D | [**getPoint**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#getPoint%28int%29)(int i)            getter for some point |
| [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**getSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#getSize%28%29)()            return the size of polygon |
| void | [**insertPoint**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#insertPoint%28int,%20java.awt.geom.Point2D%29)(int i, java.awt.geom.Point2D p)            insert Point with index |
| void | [**removePoint**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#removePoint%28int%29)(int i)            removing the Point with index.. |
| void | [**setColor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#setColor%28java.awt.Color%29)(java.awt.Color c)            set the color of sequenece |
| void | [**setPoint**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#setPoint%28int,%20java.awt.geom.Point2D%29)(int i, java.awt.geom.Point2D p)            setter the point with index |

|  |
| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

|  |
| --- |
| **Constructor Detail** |

### Polygon

public **Polygon**(java.util.ArrayList<java.awt.geom.Point2D> points)

constructor

**Parameters:**

points - list of points

### Polygon

public **Polygon**()

constructor with empty parameters

|  |
| --- |
| **Method Detail** |

### getSize

public [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) **getSize**()

return the size of polygon

**Returns:**

size

### draw

public void **draw**(java.awt.Graphics g,

[Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) s)

drawing sequence of points

**Parameters:**

g - graphic context

s - Size size

### setColor

public void **setColor**(java.awt.Color c)

set the color of sequenece

**Parameters:**

c - color

### getColor

public java.awt.Color **getColor**()

getter for color

**Returns:**

color

### getLength

public int **getLength**()

getter the the length

**Returns:**

length

### getPoint

public java.awt.geom.Point2D **getPoint**(int i)

getter for some point

**Parameters:**

i - index

**Returns:**

point

### setPoint

public void **setPoint**(int i,

java.awt.geom.Point2D p)

setter the point with index

**Parameters:**

i - index

p - point

### addPoint

public void **addPoint**(java.awt.geom.Point2D p)

adding the point into the end

**Parameters:**

p - point

### removePoint

public void **removePoint**(int i)

removing the Point with index..

**Parameters:**

i - index

### insertPoint

public void **insertPoint**(int i,

java.awt.geom.Point2D p)

insert Point with index

**Parameters:**

i - index

p - point

|  |  |  |  |  |  |  |  |  |  |
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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\MainFrame.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Polygon.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html#method_detail) |

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Preferences.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html) |
| SUMMARY: NESTED | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#field_summary) | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#method_summary) | DETAIL: [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#field_detail) | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#method_detail) |

## com.lab111.labwork2 Class Preferences

java.lang.Object

extended by **com.lab111.labwork2.Preferences**

public class **Preferences**

extends java.lang.Object

class for Options which will loaded for program

**Author:**

click

|  |  |
| --- | --- |
| **Field Summary** | |
| (package private)  boolean | [**autoSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#autoSize)            automatic calculate size |
| (package private)  java.awt.Color | [**backColor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#backColor)            color of grid |
| (package private)  java.util.ArrayList<java.awt.Color> | [**color**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#color)            list of colors |
| (package private)  java.awt.Color | [**coordinateColor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#coordinateColor)            color of coordinates |
| (package private)  int | [**countXLine**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#countXLine)            number of grid lines on the OX |
| (package private)  int | [**countYLine**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#countYLine)            number of grid lines on the OY |
| (package private) static java.awt.Color[] | [**defColor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#defColor)            default Colors |
| (package private)  [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**defSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#defSize)            manual size |
| (package private)  boolean | [**drawCoor**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#drawCoor)            drawing the coordinate |
| (package private)  java.awt.Point | [**frameLocation**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#frameLocation)            position of the frame |
| (package private)  java.awt.Dimension | [**frameSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#frameSize)            size of frame |
| (package private)  java.util.ArrayList<java.io.File> | [**lastFiles**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#lastFiles)            last files |
| (package private) static java.io.File | [**prefFile**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#prefFile)            file with Options |

|  |  |
| --- | --- |
| **Method Summary** | |
| static [Preferences](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html) | [**instance**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#instance%28%29)()            instantiation |
| void | [**loadProperty**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#loadProperty%28%29)()            load Preferences from file |
| static void | [**reset**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#reset%28%29)()            reset to default preferences |
| void | [**saveProperty**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#saveProperty%28%29)()            save the preferences |

|  |
| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

|  |
| --- |
| **Field Detail** |

### color

java.util.ArrayList<java.awt.Color> **color**

list of colors

### backColor

java.awt.Color **backColor**

color of grid

### frameSize

java.awt.Dimension **frameSize**

size of frame

### frameLocation

java.awt.Point **frameLocation**

position of the frame

### countXLine

int **countXLine**

number of grid lines on the OX

### countYLine

int **countYLine**

number of grid lines on the OY

### autoSize

boolean **autoSize**

automatic calculate size

### defSize

[Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) **defSize**

manual size

### lastFiles

java.util.ArrayList<java.io.File> **lastFiles**

last files

### coordinateColor

java.awt.Color **coordinateColor**

color of coordinates

### drawCoor

boolean **drawCoor**

drawing the coordinate

### defColor

static final java.awt.Color[] **defColor**

default Colors

### prefFile

static final java.io.File **prefFile**

file with Options

|  |
| --- |
| **Method Detail** |

### instance

public static [Preferences](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html) **instance**()

instantiation

**Returns:**

Preferences

### saveProperty

public void **saveProperty**()

throws java.io.IOException

save the preferences

**Throws:**

java.io.IOException

### loadProperty

public void **loadProperty**()

throws java.io.IOException,

java.lang.ClassNotFoundException

load Preferences from file

**Throws:**

java.io.IOException - I/O error

java.lang.ClassNotFoundException - not found the class

### reset

public static void **reset**()

reset to default preferences

|  |  |  |  |  |  |  |  |  |  |
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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Preferences.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html) |
| SUMMARY: NESTED | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#field_summary) | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#method_summary) | DETAIL: [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#field_detail) | CONSTR | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html#method_detail) |

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Size.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) |
| SUMMARY: NESTED | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#field_summary) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#method_summary) | DETAIL: [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#field_detail) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#method_detail) |

## com.lab111.labwork2 Class Size

java.lang.Object

extended by **com.lab111.labwork2.Size**

**All Implemented Interfaces:**

java.io.Serializable

public class **Size**

extends java.lang.Object

implements java.io.Serializable

class that represented the size and scale in diagram using for drawing the polygons

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.Size)

|  |  |
| --- | --- |
| **Field Summary** | |
| (package private)  double | [**mashX**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#mashX)            scale х |
| (package private)  double | [**mashY**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#mashY)            scale у |
| (package private)  double | [**maxX**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#maxX)            maximum value х |
| (package private)  double | [**maxY**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#maxY)            maximum value у |
| (package private)  double | [**minX**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#minX)            minimum value х |
| (package private)  double | [**minY**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#minY)            minimal value у |

|  |  |
| --- | --- |
| **Constructor Summary** | |
| [**Size**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#Size%28%29)()            constructor fields initialization with default values |  |

|  |  |
| --- | --- |
| **Method Summary** | |
| void | [**compare**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#compare%28com.lab111.labwork2.Size%29)([Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) s)            compare the size |
| static [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) | [**getDefaultSize**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#getDefaultSize%28%29)()            getter the default size |
| void | [**show**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#show%28%29)()            output the size |

|  |
| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

|  |
| --- |
| **Field Detail** |

### maxX

double **maxX**

maximum value х

### maxY

double **maxY**

maximum value у

### minX

double **minX**

minimum value х

### minY

double **minY**

minimal value у

### mashX

double **mashX**

scale х

### mashY

double **mashY**

scale у

|  |
| --- |
| **Constructor Detail** |

### Size

public **Size**()

constructor fields initialization with default values

|  |
| --- |
| **Method Detail** |

### compare

public void **compare**([Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) s)

compare the size

**Parameters:**

s - size

### show

public void **show**()

output the size

### getDefaultSize

public static [Size](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) **getDefaultSize**()

getter the default size

**Returns:**

size

|  |  |  |  |  |  |  |  |  |  |
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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Preferences.html)   [**NEXT CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/Size.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html) |
| SUMMARY: NESTED | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#field_summary) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#method_summary) | DETAIL: [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#field_detail) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html#method_detail) |

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| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html)   NEXT CLASS | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/TableModel.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) |
| SUMMARY: NESTED | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#fields_inherited_from_class_javax.swing.table.AbstractTableModel) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#method_detail) |

## com.lab111.labwork2 Class TableModel

java.lang.Object

extended by javax.swing.table.AbstractTableModel

extended by **com.lab111.labwork2.TableModel**

**All Implemented Interfaces:**

java.io.Serializable, javax.swing.table.TableModel

public class **TableModel**

extends javax.swing.table.AbstractTableModel

model of tabel extends abstract table model

**Author:**

click

**See Also:**

[Serialized Form](file:///D:\workspace\template\doc\serialized-form.html#com.lab111.labwork2.TableModel)

|  |
| --- |
| **Field Summary** |

|  |
| --- |
| **Fields inherited from class javax.swing.table.AbstractTableModel** |
| listenerList |

|  |  |
| --- | --- |
| **Constructor Summary** | |
| [**TableModel**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#TableModel%28java.util.ArrayList,%20com.lab111.labwork2.DiagramDrawer%29)(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list, [DiagramDrawer](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) d)            Constructor |  |
| [**TableModel**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#TableModel%28com.lab111.labwork2.DiagramDrawer%29)([DiagramDrawer](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) d) |  |

|  |  |
| --- | --- |
| **Method Summary** | |
| void | [**addPolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#addPolygon%28%29)()            new Polygon adding |
| void | [**addRow**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#addRow%28%29)()            adding the Row to the table |
| java.lang.Class<?> | [**getColumnClass**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#getColumnClass%28int%29)(int column)            getter for column class |
| int | [**getColumnCount**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#getColumnCount%28%29)() |
| java.lang.String | [**getColumnName**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#getColumnName%28int%29)(int column)            get column name |
| int | [**getId**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#getId%28int%29)(int rowIndex)            get id Polygon with rowIndex of polygon |
| int | [**getRowCount**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#getRowCount%28%29)() |
| java.lang.Object | [**getValueAt**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#getValueAt%28int,%20int%29)(int rowIndex, int columnIndex)            get Value (point coordinate) |
| void | [**insertRow**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#insertRow%28int%29)(int rowIndex)            inserting row to the table into the index position |
| boolean | [**isCellEditable**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#isCellEditable%28int,%20int%29)(int row, int column)            resolution for edit the cell |
| void | [**removePolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#removePolygon%28int%29)(int rowIndex)            removing the polygon |
| void | [**removeRow**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#removeRow%28int%29)(int rowIndex)            remove Row |
| void | [**setPolygon**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#setPolygon%28java.util.ArrayList%29)(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)            set list of Polygon |
| void | [**setValueAt**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#setValueAt%28java.lang.Object,%20int,%20int%29)(java.lang.Object o, int r, int c)            set value at the target cell |

|  |
| --- |
| **Methods inherited from class javax.swing.table.AbstractTableModel** |
| addTableModelListener, findColumn, fireTableCellUpdated, fireTableChanged, fireTableDataChanged, fireTableRowsDeleted, fireTableRowsInserted, fireTableRowsUpdated, fireTableStructureChanged, getListeners, getTableModelListeners, removeTableModelListener |

|  |
| --- |
| **Methods inherited from class java.lang.Object** |
| clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait |

|  |
| --- |
| **Constructor Detail** |

### TableModel

public **TableModel**([DiagramDrawer](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) d)

### TableModel

public **TableModel**(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list,

[DiagramDrawer](file:///D:\workspace\template\doc\com\lab111\labwork2\DiagramDrawer.html) d)

Constructor

**Parameters:**

list -

d -

|  |
| --- |
| **Method Detail** |

### getColumnCount

public int **getColumnCount**()

### getRowCount

public int **getRowCount**()

### getValueAt

public java.lang.Object **getValueAt**(int rowIndex,

int columnIndex)

get Value (point coordinate)

### getColumnName

public java.lang.String **getColumnName**(int column)

get column name

**Specified by:**

getColumnName in interface javax.swing.table.TableModel

**Overrides:**

getColumnName in class javax.swing.table.AbstractTableModel

### getColumnClass

public java.lang.Class<?> **getColumnClass**(int column)

getter for column class

**Specified by:**

getColumnClass in interface javax.swing.table.TableModel

**Overrides:**

getColumnClass in class javax.swing.table.AbstractTableModel

### isCellEditable

public boolean **isCellEditable**(int row,

int column)

resolution for edit the cell

**Specified by:**

isCellEditable in interface javax.swing.table.TableModel

**Overrides:**

isCellEditable in class javax.swing.table.AbstractTableModel

### setValueAt

public void **setValueAt**(java.lang.Object o,

int r,

int c)

set value at the target cell

**Specified by:**

setValueAt in interface javax.swing.table.TableModel

**Overrides:**

setValueAt in class javax.swing.table.AbstractTableModel

### addRow

public void **addRow**()

adding the Row to the table

### addPolygon

public void **addPolygon**()

new Polygon adding

### removeRow

public void **removeRow**(int rowIndex)

remove Row

**Parameters:**

rowIndex - index of a Row

### removePolygon

public void **removePolygon**(int rowIndex)

removing the polygon

**Parameters:**

rowIndex - index of polygon

### insertRow

public void **insertRow**(int rowIndex)

inserting row to the table into the index position

**Parameters:**

rowIndex - index position

### setPolygon

public void **setPolygon**(java.util.ArrayList<[Polygon](file:///D:\workspace\template\doc\com\lab111\labwork2\Polygon.html)> list)

set list of Polygon

**Parameters:**

list -

### getId

public int **getId**(int rowIndex)

get id Polygon with rowIndex of polygon

**Parameters:**

rowIndex - index of a row

**Returns:**

number of polygon

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | [**Package**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-summary.html) | **Class** | [**Use**](file:///D:\workspace\template\doc\com\lab111\labwork2\class-use\TableModel.html) | [**Tree**](file:///D:\workspace\template\doc\com\lab111\labwork2\package-tree.html) | [**Deprecated**](file:///D:\workspace\template\doc\deprecated-list.html) | [**Index**](file:///D:\workspace\template\doc\index-files\index-1.html) | [**Help**](file:///D:\workspace\template\doc\help-doc.html) | | |  |
| [**PREV CLASS**](file:///D:\workspace\template\doc\com\lab111\labwork2\Size.html)   NEXT CLASS | [**FRAMES**](file:///D:\workspace\template\doc\index.html?com/lab111/labwork2/TableModel.html)    [**NO FRAMES**](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html) |
| SUMMARY: NESTED | [FIELD](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#fields_inherited_from_class_javax.swing.table.AbstractTableModel) | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#constructor_summary) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#method_summary) | DETAIL: FIELD | [CONSTR](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#constructor_detail) | [METHOD](file:///D:\workspace\template\doc\com\lab111\labwork2\TableModel.html#method_detail) |

**5.Висновки**

За допомогою засобів мови Java, бібліотеки Swing було розроблену програму редагування лінійних діаграм. Крім того були використані пакети вводу/виводу java.io та java.nio, а саме потоки та механізми буферів та каналів, до того ж було використано засоби підтримки стійкості даних та механізми серіалізації.

Отримав навички розробки програм з графічним інтерфейсом. В ході розробки закріпив знання про пат терни програмування ( В програмі використаній деякі пат терни такі як Singleton).В результаті отримали програму яка є непоганою альтернативою для швидкого редактування невеличких лінійних діаграм.

**6.Список інформаційних джерел**

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**ДОДАТКИ**

**Додаток А**

**Програмний код**

package com.lab111.labwork2;

import java.awt.BorderLayout;

import java.awt.Color;

import java.awt.Dimension;

import java.awt.Point;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.util.ArrayList;

import javax.swing.JButton;

import javax.swing.JColorChooser;

import javax.swing.JDialog;

import javax.swing.JFrame;

import javax.swing.JLabel;

import javax.swing.JPanel;

/\*\*

\* Class represented the

\* dialog for select default colors

\* @author click

\*/

public class ColorDialog extends JDialog{

private static final long serialVersionUID = -8367620144926999387L;

/\*\*

\* selected colors

\*/

private ArrayList<Color> selectedColor;

/\*\*

\* success of selecting the color

\*/

static final int NButton=5;

private int result;

/\*\*

\* constructor

\* @param owner frame

\* @param title title of frame

\*/

public ColorDialog(JFrame owner,String title){

super(owner,title,true);

setLayout(new BorderLayout());

JPanel panel=new JPanel();

JLabel label=new JLabel("Default Color:");

add(panel,BorderLayout.CENTER);

add(new JPanel().add(label),BorderLayout.NORTH);

Preferences pr=Preferences.instance();

selectedColor=(ArrayList<Color>)pr.color.clone();

for(int i=1; i<=NButton; i++){

JPanel p=new JPanel();

JLabel l=new JLabel(""+i+" ");

JButton b=new JButton("Select");

final int ind=i-1;

b.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent event){

Color col=JColorChooser.showDialog(Controller.frame, "Select",selectedColor.get(ind));

selectedColor.set(ind, col);

}

});

p.add(l);

p.add(b);

panel.add(p);

}

JButton okButton=new JButton("Ok");

okButton.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent event){

setVisible(false);

Preferences pr=Preferences.instance();

pr.color=selectedColor;

result=1;

}

});

JButton canButton=new JButton("Cancel");

canButton.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent event){

setVisible(false);

result=0;

}

});

JPanel butPanel=new JPanel();

butPanel.add(okButton);

butPanel.add(canButton);

add(butPanel,BorderLayout.SOUTH);

setSize(200,300);

Point point=owner.getLocation();

Dimension dim=owner.getSize();

setLocation(point.x+(dim.width-200)/2,point.y+(dim.height-300)/2);

setVisible(true);

}

/\*\*

\* return success of operation

\* @return result

\*/

public int getResult(){

return result;

}

}

package com.lab111.labwork2;

import java.awt.Color;

import java.io.File;

import java.util.ArrayList;

import javax.swing.JPanel;

import javax.swing.JTable;

/\*\*

\* Class-controller

\* @author click

\*

\*/

public class Controller {

/\*\*

\* list of polygons

\*/

ArrayList<Polygon> polygons;

/\*\*

\* size for drawing

\*/

Size size;

/\*\*

\* list of colors

\*/

ArrayList<Color> colors;

/\*\*

\* source file

\*/

File file;

/\*\*

\* diagram

\*/

DiagramDrawer diagram;

/\*\*

\* model of tabel

\*/

TableModel model;

/\*\*

\* table- swing object

\*/

JTable table;

/\*\*

\* panel for graphics

\*/

JPanel panel;

/\*\*

\* sign saving

\*/

boolean hasSaved;

/\*\*

\* list opened panels

\*/

static ArrayList<Controller> panels=new ArrayList<Controller>(10);

/\*\*

\* identficator that adding to new files

\*/

static int nameId=1;

/\*\*

\* processor for work with files

\*/

static CSVProcessor processor;

/\*\*

\* main frame

\*/

static MainFrame frame;

/\*\*

\* empty constructor

\*/

public Controller(){

}

}

package com.lab111.labwork2;

import java.awt.BorderLayout;

import java.awt.Dimension;

import java.awt.Point;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.text.NumberFormat;

import javax.swing.JButton;

import javax.swing.JDialog;

import javax.swing.JFormattedTextField;

import javax.swing.JFrame;

import javax.swing.JLabel;

import javax.swing.JPanel;

import javax.swing.JSpinner;

import javax.swing.SpinnerNumberModel;

/\*\*

\* Class represented dialog for load

\* diagram scale and size

\* @author click

\*

\*/

public class CoordinateDialog extends JDialog {

/\*\*

\*

\*/

private static final long serialVersionUID = -5385244753591235384L;

private int[] num=new int[6];

private int result=0;

public CoordinateDialog(JFrame owner,String title){

super(owner,title,true);

setLayout(new BorderLayout());

JPanel panel=new JPanel();

add(panel,BorderLayout.CENTER);

Preferences pr=Preferences.instance();

JPanel p1=new JPanel();

JLabel l1=new JLabel("countX: ");

final JSpinner s1=new JSpinner(new SpinnerNumberModel(pr.countXLine,1,150,1));

JPanel p2=new JPanel();

JLabel l2=new JLabel("countY: ");

final JSpinner s2=new JSpinner(new SpinnerNumberModel(pr.countYLine,1,150,1));

JPanel p3=new JPanel();

JLabel l3=new JLabel("maxX: ");

final JFormattedTextField s3=new JFormattedTextField(NumberFormat.getIntegerInstance());

s3.setColumns(6);

s3.setValue(pr.defSize.maxX);

JPanel p4=new JPanel();

JLabel l4=new JLabel("minX: ");

final JFormattedTextField s4=new JFormattedTextField(NumberFormat.getIntegerInstance());

s4.setColumns(6);

s4.setValue(pr.defSize.minX);

JPanel p5=new JPanel();

JLabel l5=new JLabel("maxY: ");

final JFormattedTextField s5=new JFormattedTextField(NumberFormat.getIntegerInstance());

s5.setColumns(6);

s5.setValue(pr.defSize.maxY);

JPanel p6=new JPanel();

JLabel l6=new JLabel("minY: ");

final JFormattedTextField s6=new JFormattedTextField(NumberFormat.getIntegerInstance());

s6.setColumns(6);

s6.setValue(pr.defSize.minY);

p1.add(l1);

p1.add(s1);

panel.add(p1);

p2.add(l2);

p2.add(s2);

panel.add(p2);

p3.add(l3);

p3.add(s3);

panel.add(p3);

p4.add(l4);

p4.add(s4);

panel.add(p4);

p5.add(l5);

p5.add(s5);

panel.add(p5);

p6.add(l6);

p6.add(s6);

panel.add(p6);

JButton okButton=new JButton("Ok");

okButton.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent event){

setVisible(false);

num[0]=(Integer) s1.getValue();

num[1]=(Integer) s2.getValue();

Number value=(Number) s3.getValue();

num[2]=value.intValue();

value=(Number) s4.getValue();

num[3]=value.intValue();

value=(Number) s5.getValue();

num[4]=value.intValue();

value=(Number) s6.getValue();

num[5]=value.intValue();

result=1;

}

});

JButton canButton=new JButton("Cancel");

canButton.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent event){

setVisible(false);

result=0;

}

});

JPanel butPanel=new JPanel();

butPanel.add(okButton);

butPanel.add(canButton);

add(butPanel,BorderLayout.SOUTH);

setSize(200,300);

Point point=owner.getLocation();

Dimension dim=owner.getSize();

setLocation(point.x+(dim.width-200)/2,point.y+(dim.height-300)/2);

setVisible(true);

}

/\*\*

\* return the success of operation

\* @return result

\*/

public int getResult(){

return result;

}

/\*\*

\* return the selected value

\* @return значення

\*/

public int[] getNumber(){

return num;

}

}

**package** com.lab111.labwork2;

/\*\*

\* class for Exceptions

\* **@author** click

\*

\*/

**public** **class** CSVException **extends** Exception {

/\*\*

\* **@author** click

\*/

**private** **static** **final** **long** *serialVersionUID* = 1L;

/\*\*

\* throwing the exception message

\* **@param** string

\*/

**public** CSVException(String string) {

// **TODO** Auto-generated constructor stub

**super**(string);

}

}

package com.lab111.labwork2;

import java.awt.geom.Point2D;

import java.io.BufferedReader;

import java.io.File;

import java.io.FileInputStream;

import java.io.FileNotFoundException;

import java.io.FileOutputStream;

import java.io.FileReader;

import java.io.IOException;

import java.io.ObjectInputStream;

import java.io.ObjectOutputStream;

import java.io.PrintWriter;

import java.util.ArrayList;

import java.util.StringTokenizer;

/\*\*

\* Class for CSV.

\*

\* @author click

\*

\*/

public final class CSVProcessor {

/\*\*

\* instance for singleton.

\*/

private static CSVProcessor instance = null;

/\*\*

\* Singleton getter.

\*

\* @return CSVProcessor

\*/

public static CSVProcessor getCSVProcessor() {

if (instance != null) {

return instance;

} else {

return new CSVProcessor();

}

}

/\*\*

\* Private constructor. for singleton

\*/

private CSVProcessor() {

instance = this;

}

/\*\*

\* csv agregate.

\*/

private ArrayList<String> csv = null;

/\*\*

\* list

\*/

private ArrayList<Polygon> polygons;

/\*\*

\* csv getter.

\* @return csv agregate

\*/

public ArrayList<String> getCsv() {

@SuppressWarnings("unchecked")

ArrayList<String> CsvClone=(ArrayList<String>) csv.clone();

return CsvClone;

}

/\*\*

\* setter for csv agregate.

\* @param csv arraylist of Strings

\*/

public void setCsv(final ArrayList<String> csv) {

this.csv = csv;

}

/\*\*

\* Load CSV from file.

\*

\* @param path

\* - path to file

\* @return Arraylist<String>

\* @throws FileNotFoundException when file not exsist

\*/

public ArrayList<String> loadCSV(final String path)

throws FileNotFoundException {

File file = new File(path);

String temp;

try {

BufferedReader br = new BufferedReader(new FileReader(file));

csv = new ArrayList<String>();

for (int i = 0; (temp = br.readLine()) != null; i++) {

csv.add(i, new String(temp));

}

br.close();

} catch (FileNotFoundException e) {

System.out.println("File not found");

throw new FileNotFoundException();

} catch (IOException e) {

e.printStackTrace();

}

return csv;

}

/\*\*

\* Save csv to file.

\*

\* @param path

\* to file

\* @throws IOException

\* if file can not be loaded

\*/

public void saveCSV(final String path) throws IOException {

if (csv != null) {

File file = new File(path);

PrintWriter pw = new PrintWriter(file);

for (int i = 0; i < csv.size(); i++) {

pw.println(csv.get(i));

}

pw.close();

} else {

throw new NullPointerException("CSV not loaded");

}

}

/\*\*

\* serialize serialized.dat .

\*

\* @return boolean success of operation

\*/

public boolean serializeCSV() {

if (csv != null) {

try {

ObjectOutputStream oos = new ObjectOutputStream(

new FileOutputStream("serialized.dat"));

oos.writeObject(csv);

oos.close();

return true;

} catch (IOException e) {

e.printStackTrace();

}

return false;

} else {

return false;

}

}

/\*\*

\* deserialize serialized.dat .

\*

\* @return boolean success of operation

\*/

@SuppressWarnings("unchecked")

public boolean deserializeCSV() {

try {

ObjectInputStream oos = new ObjectInputStream(new FileInputStream("serialized.dat"));

csv = (ArrayList<String>) oos.readObject();

oos.close();

return true;

} catch (IOException e) {

return false;

} catch (ClassNotFoundException e) {

return false;

}

}

/\*\*

\* method for parsing data into the list of string

\* processed data writes into the list and output to the monitor

\*

\* @throws CSVException throwing when data does not mach format

\* or there are unnecessary data in csv or there aren't all data fields

\*

\*/

public void parse() throws CSVException{

polygons=new ArrayList<Polygon>();

String s=new String();

Polygon pl=new Polygon();

double x;

double y;

String end="end";

StringTokenizer st;

if(csv.size()==0) throw new CSVException("file hasn't string");

if(!csv.get(csv.size()-1).equals(end)) throw new CSVException("chain hasn't end-string");

if(csv.size()==1) throw new CSVException("chain has't points");

for(int i=0; i<csv.size(); i++){

s=csv.get(i);

if(!s.equals(end)){

st=new StringTokenizer(s,",");

if(st.countTokens()!=2) throw new CSVException("countTokens!=2");

x=Double.parseDouble(st.nextToken());

y=Double.parseDouble(st.nextToken());

pl.addPoint(new Point2D.Double(x,y));

}else{

polygons.add(pl);

pl=new Polygon();

}

}

}

/\*\*

\* method deparsing polygons to strings

\*/

public void deparse(){

String s;

Point2D p;

csv=new ArrayList<String>();

for(Polygon pl:polygons){

for(int i=0; i<pl.getLength(); i++){

p=pl.getPoint(i);

s=""+p.getX()+","+p.getY();

csv.add(s);

}

csv.add("end");

}

}

/\*\*

\*

\* @return list of polygons

\*/

public ArrayList<Polygon> getPolygon(){

return polygons;

}

/\*\*

\*

\* @param list of polyogns

\*/

public void setPolygon(ArrayList<Polygon> list){

polygons=list;

}

}

package com.lab111.labwork2;

import javax.swing.JPanel;

import java.awt.\*;

import java.awt.geom.Line2D;

import java.util.ArrayList;

/\*\*

\* panel on which to draw the diagram

\* @author click

\*

\*/

public class DiagramDrawer extends JPanel{

/\*\*

\* generated version

\*/

private static final long serialVersionUID = -2434506045920957389L;

/\*\*

\* list of polygons

\*/

private ArrayList<Polygon> polygon;

/\*\*

\* scale and other size parameters

\*/

private Size size;

/\*\*

\* constructor

\* @param list list of Polygons

\*/

public DiagramDrawer(ArrayList<Polygon> list){

polygon=list;

size=new Size();

}

/\*\*

\* override paint component

\*/

public void paintComponent(Graphics g){

super.paintComponent(g);

draw(g);

}

/\*\*

\* drawing the diagram

\* @param g graphic context

\*/

public void draw(Graphics g){

Graphics2D g2=(Graphics2D) g;

Rectangle r=getBounds();

Preferences p=Preferences.instance();

if(p.autoSize){

avtoSize();

}else{

setSize(p.defSize);

}

if(size.maxX==size.minX){

size.maxX+=10;

size.minX-=10;

}

if(size.maxY==size.minY){

size.maxY+=10;

size.minY-=10;

}

size.mashX=(double)(r.width-60)/(size.maxX-size.minX);

size.mashY=(double)(r.height-30)/(size.maxY-size.minY);

double dx=(double)(size.maxX-size.minX)/p.countXLine;

double dy=(double)(size.maxY-size.minY)/p.countYLine;

dx\*=size.mashX;

dy\*=size.mashY;

double x=15;

double y=15;

g2.setPaint(p.backColor);

for(int i=0; i<=p.countXLine; i++){

g2.draw(new Line2D.Double(x,15,x,r.height-15));

x+=dx;

}

for(int i=0; i<=p.countYLine; i++){

g2.draw(new Line2D.Double(15,y, r.width-45,y));

y+=dy;

}

if(p.drawCoor){

g2.setPaint(p.coordinateColor);

Line2D lineX=new Line2D.Double(15,size.maxY\*size.mashY+15,

(size.maxX-size.minX)\*size.mashX+15,size.maxY\*size.mashY+15);

g2.draw(lineX);

Line2D lineY=new Line2D.Double((-size.minX)\*size.mashX+15,(size.maxY-size.minY)\*size.mashY+15,

(-size.minX)\*size.mashX+15,15);

g2.draw(lineY);

g2.drawString("0", (float)((-size.minX)\*size.mashX+16),(float)(size.maxY\*size.mashY+13));

g2.drawString(""+size.minX, (float)(16),(float)(size.maxY\*size.mashY+13));

g2.drawString(""+size.maxX, (float)((size.maxX-size.minX)\*size.mashX+16),(float)(size.maxY\*size.mashY+13));

g2.drawString(""+size.minY, (float)((-size.minX)\*size.mashX+16),(float)((size.maxY-size.minY)\*size.mashY+13));

g2.drawString(""+size.maxY, (float)((-size.minX)\*size.mashX+16),(float)(13));

}

for(Polygon pl:polygon){

pl.draw(g, size);

}

}

/\*\*

\* set the list of polygons

\* @param list of polygons

\*/

public void setPolygon(ArrayList<Polygon> list){

polygon=list;

}

/\*\*

\* return polygon

\* @return polygon

\*/

public ArrayList<Polygon> getPolygon(){

return polygon;

}

/\*\*

\* set the size for drawing

\* @param s size

\*/

public void setSize(Size s){

size=s;

}

/\*\*

\* get size

\* @return розмір

\*/

public Size getCurrentSize(){

return size;

}

/\*\*

\* calculate the size for all polygons

\*/

public void avtoSize(){

if(polygon.size()!=0){

size=polygon.get(0).getSize();

for(Polygon ch:polygon){

size.compare(ch.getSize());

}

}else{

size=new Size();

}

}

/\*\*

\* set the color of all polygons

\* @param list

\*/

public void setColors(ArrayList<Color> list){

for(int i=0; i<polygon.size(); i++){

polygon.get(i).setColor(list.get(i));

}

}

}

package com.lab111.labwork2;

import java.io.File;

import javax.swing.filechooser.FileFilter;

/\*\*

\* Filter for csv files

\* @author click

\*

\*/

public class ExtensionFileFilter extends FileFilter {

private String extension;

private String description;

/\*\*

\* Constructor

\* @param exten extension of the file

\* @param desc description of the file

\*

\*/

public ExtensionFileFilter(String exten,String desc){

setExtension(exten);

setDescription(desc);

}

/\*\*

\* set the extension

\* @param extension

\*/

public void setExtension(String extension){

if (!extension.startsWith("."))

extension = "." + extension;

this.extension=extension.toLowerCase();

}

/\*\*

\* return extension of the file

\* @return extension

\*/

public String getExtension(){

return extension;

}

/\*\*

\* set a description

\* @param aDescription

\*/

public void setDescription(String aDescription){

description = aDescription;

}

/\*\*

\* @return description

\*/

public String getDescription(){

return description;

}

/\*\*

\* check the file with the filter

\* @param f target file

\*/

public boolean accept(File f){

if (f.isDirectory()) return true;

String name = f.getName().toLowerCase();

if (name.endsWith(extension))

return true;

return false;

}

}

package com.lab111.labwork2;

import java.io.BufferedReader;

import java.io.File;

import java.io.IOException;

import java.io.InputStreamReader;

/\*\*

\* test class

\* @author click

\*/

public class Main {

private static final int num=3;

/\*\*

\* @param args

\* @throws ClassNotFoundException

\* @throws IOException

\*/

public static void main(String[] args) throws ClassNotFoundException, IOException {

// TODO Auto-generated method stub

CSVProcessor csv=CSVProcessor.getCSVProcessor();

File F=new File("serialized.dat");

if (F.exists())

{

System.out.println("File exists");

if (csv.deserializeCSV()) {

System.out.println(csv.getCsv());

}

}

else {

boolean flag=false;

for (int i=0;i<num;i++)

{

try {

System.out.println("Input the name of target file");

BufferedReader bis=new BufferedReader(new InputStreamReader(System.in));

F=new File(bis.readLine());

System.out.println(F.getName());

} catch (IOException e) {

// TODO Auto-generated catch block

e.printStackTrace();

continue;

}

try{

csv.loadCSV(F.getAbsolutePath());

csv.serializeCSV();

flag=true;

break;

}

catch(IOException e1)

{

if ((flag==false)&&(i==num-1))

{

System.out.println("File is not found");

break;

}else {e1.toString();

System.out.println("Insert name once more");

}

}

Preferences p=Preferences.instance();

try {

p.loadProperty();

} catch (ClassNotFoundException e) {

e.printStackTrace();

} catch (IOException e) {

e.printStackTrace();

}

}

}Controller.processor=csv;

Controller c=new Controller();

c.file=new File("out2.csv");

Controller.frame=new MainFrame();

Controller.frame.setVisible(true);

}

}

package com.lab111.labwork2;

import java.awt.\*;

import java.awt.event.\*;

import java.awt.geom.Point2D;

import java.awt.image.BufferedImage;

import java.io.\*;

import java.util.\*;

import javax.swing.\*;

import javax.imageio.ImageIO;

/\*\*

\* Main frame of the interface

\* There is all functionality here

\* @author click

\*

\*/

public class MainFrame extends JFrame{

/\*\*

\* generated version

\*/

private static final long serialVersionUID = -2391915128720355121L;

/\*\*

\* controller

\*/

private Controller cont;

/\*\*

\* panel for other panels

\*/

private JTabbedPane pane;

/\*\*

\* constructor

\* @param c Controller

\*/

public MainFrame(Controller c){

Preferences p=Preferences.instance();

setSize(p.frameSize);

setLocation(p.frameLocation);

setTitle("Line Diagram Builder");

pane=new JTabbedPane();

createJMenuBar();

pane.addMouseListener(new MouseAdapter(){

@Override

public void mouseClicked(MouseEvent event) {

if(event.getButton()==MouseEvent.BUTTON1){

if(pane.getSelectedIndex()>=0){

cont=Controller.panels.get(pane.getSelectedIndex());

Controller.processor.setPolygon(cont.polygons);

}

}

}

});

add(pane,BorderLayout.CENTER);

for(File f:p.lastFiles){

Controller cc=new Controller();

cc.file=f;

addController(cc);

}

p.lastFiles.clear();

if(c.file!=null){

addController(c);

}

addWindowListener(new WindowAdapter(){

public void windowClosing(WindowEvent event){

setVisible(false);

Preferences p=Preferences.instance();

p.frameSize=getSize();

p.frameLocation=getLocation();

for(int i=0; i<Controller.panels.size(); i++){

Controller c=Controller.panels.get(i);

if(c.file!=null){

p.lastFiles.add(c.file);

}

}

try {

p.saveProperty();

} catch (IOException e) {

e.printStackTrace();

}

System.exit(0);

}

});

}

/\*\*

\* empty constructor

\*/

public MainFrame(){

this(new Controller());

}

/\*\*

\* adding new controller

\* @param c controller

\*/

public void addController(Controller c){

String name;

if(c.file!=null){

try {

Controller.processor.loadCSV(c.file.getAbsolutePath());

Controller.processor.parse();

} catch (IOException e) {

e.printStackTrace();

return;

} catch (CSVException e) {

e.printStackTrace();

return;

}

c.polygons=Controller.processor.getPolygon();

c.hasSaved=true;

name=c.file.getName();

}else{

c.polygons=new ArrayList<Polygon>();

Polygon pl=new Polygon();

pl.addPoint(new Point2D.Double(0,0));

c.polygons.add(pl);

name="new"+Controller.nameId+"\*";

Controller.nameId++;

Controller.processor.setPolygon(c.polygons);

c.hasSaved=false;

}

c.colors=new ArrayList<Color>(c.polygons.size());

c.diagram=new DiagramDrawer(c.polygons);

c.model=new TableModel(c.diagram);

c.table=new JTable(c.model);

Preferences p=Preferences.instance();

Random r=new Random();

if(c.polygons.size()>5){

c.colors=(ArrayList<Color>) p.color.clone();

for(int i=5; i<c.polygons.size(); i++){

c.colors.add(new Color(r.nextInt(256),r.nextInt(256),r.nextInt(256)));

c.diagram.setColors(c.colors);

}

}else{

c.diagram.setColors(p.color);

c.colors=(ArrayList<Color>) p.color.clone();

}

c.panel=new JPanel();

c.panel.setLayout(new BorderLayout());

c.panel.add(new JScrollPane(c.table),BorderLayout.WEST);

c.panel.add(c.diagram,BorderLayout.CENTER);

pane.addTab(name, c.panel);

pane.setSelectedComponent(c.panel);

cont=c;

Controller.panels.add(c);

}

/\*\*

\* deleting controller

\*/

public void removeController(){

int index=pane.getSelectedIndex();

pane.remove(index);

Controller.panels.remove(index);

index=pane.getSelectedIndex();

if(index>=0){

cont=Controller.panels.get(index);

Controller.processor.setPolygon(cont.polygons);

}

}

/\*\*

\* getter for controller

\* @return controller

\*/

public Controller getController(){

return cont;

}

/\*\*

\* getting the panel

\* @return panel

\*/

public JTabbedPane getPane(){

return pane;

}

/\*\*

\* creating menu

\* -Table

\* --New

\* --Open

\* --Close

\* --Save

\* --Save As..

\* --Import to JPEG

\* --Exit

\* -Point

\* --Add

\* --Insert

\* --Remove

\* --Add Chain

\* --Remove Chain

\* --Color

\* -Options

\* --Default Colors

\* --Back Color

\* --Coordinate Color

\* --Coordinate

\* --Autosize

\* --Draw Coordinate

\* --Reset

\*

\*/

public void createJMenuBar(){

JMenuBar b=new JMenuBar();

JMenu Table=new JMenu("Table");

JMenuItem New=new JMenuItem("New");

New.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

Controller c=new Controller();

c.file=null;

addController(c);

}

});

New.setAccelerator(KeyStroke.getKeyStroke(KeyEvent.VK\_N,InputEvent.CTRL\_MASK));

JMenuItem Open=new JMenuItem("Open..");

Open.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

JFileChooser chooser = new JFileChooser();

chooser.setCurrentDirectory(new File("."));

ExtensionFileFilter csvFilter=new ExtensionFileFilter("csv","CSV Files");

chooser.setFileFilter(csvFilter);

int result=chooser.showOpenDialog(Controller.frame);

if (result==JFileChooser.APPROVE\_OPTION){

Controller c=new Controller();

c.file=chooser.getSelectedFile();

addController(c);

}

}

});

Open.setAccelerator(KeyStroke.getKeyStroke(KeyEvent.VK\_O,InputEvent.CTRL\_MASK));

JMenuItem Close=new JMenuItem("Close");

Close.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

if(Controller.panels.size()>0){

if(cont.hasSaved){

removeController();

}else{

int result=JOptionPane.showConfirmDialog

(Controller.frame, "Save current file?", "TableEditor",

JOptionPane.YES\_NO\_CANCEL\_OPTION, JOptionPane.PLAIN\_MESSAGE);

if(result==JOptionPane.YES\_OPTION){

if(cont.file==null){

JFileChooser chooser = new JFileChooser();

chooser.setCurrentDirectory(new File("."));

ExtensionFileFilter csvFilter=new ExtensionFileFilter("csv","CSV Files");

chooser.setFileFilter(csvFilter);

int res=chooser.showSaveDialog(Controller.frame);

if (res==JFileChooser.APPROVE\_OPTION){

File f=new File(chooser.getSelectedFile().getPath());

if(!f.getName().toLowerCase().endsWith(csvFilter.getExtension())){

cont.file=new File(chooser.getSelectedFile().getPath()+csvFilter.getExtension());

}else{

cont.file=f;

}

try {

Controller.processor.deparse();

Controller.processor.saveCSV(cont.file.getAbsolutePath());

cont.hasSaved=true;

int index=pane.getSelectedIndex();

pane.setTitleAt(index, cont.file.getName());

} catch (IOException e) {

e.printStackTrace();

}

}

}else{

try {

Controller.processor.deparse();

Controller.processor.saveCSV(cont.file.getAbsolutePath());

cont.hasSaved=true;

int index=pane.getSelectedIndex();

pane.setTitleAt(index, cont.file.getName());

} catch (FileNotFoundException e) {

e.printStackTrace();

} catch (IOException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

}

}else{

if(result==JOptionPane.CANCEL\_OPTION || result==JOptionPane.CLOSED\_OPTION) return;

}

removeController();

}

}

}

});

Close.setAccelerator(KeyStroke.getKeyStroke(KeyEvent.VK\_L,InputEvent.CTRL\_MASK));

JMenuItem Save=new JMenuItem("Save");

Save.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

if(cont.file==null){

JFileChooser chooser = new JFileChooser();

chooser.setCurrentDirectory(new File("."));

ExtensionFileFilter csvFilter=new ExtensionFileFilter("csv","CSV Files");

chooser.setFileFilter(csvFilter);

int result=chooser.showSaveDialog(Controller.frame);

if (result==JFileChooser.APPROVE\_OPTION){

File f=new File(chooser.getSelectedFile().getPath());

if(!f.getName().toLowerCase().endsWith(csvFilter.getExtension())){

cont.file=new File(

chooser.getSelectedFile().getPath()+csvFilter.getExtension());

}else{

cont.file=f;

}

try {

Controller.processor.deparse();

Controller.processor.saveCSV(cont.file.getAbsolutePath());

cont.hasSaved=true;

int index=pane.getSelectedIndex();

pane.setTitleAt(index, cont.file.getName());

} catch (IOException e) {

e.printStackTrace();

}

}

}else{

Controller.processor.deparse();

try {

Controller.processor.saveCSV(cont.file.getAbsolutePath());

cont.hasSaved=true;

int index=pane.getSelectedIndex();

pane.setTitleAt(index, cont.file.getName());

} catch (FileNotFoundException e) {

e.printStackTrace();

} catch (IOException e) {

// TODO Auto-generated catch block

e.printStackTrace();

}

}

}

});

Save.setAccelerator(KeyStroke.getKeyStroke(KeyEvent.VK\_S,InputEvent.CTRL\_MASK));

JMenuItem SaveAs=new JMenuItem("Save As..");

SaveAs.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

JFileChooser chooser = new JFileChooser();

chooser.setCurrentDirectory(new File("."));

chooser.setSelectedFile(cont.file);

ExtensionFileFilter csvFilter=new ExtensionFileFilter("csv","CSV Files");

chooser.setFileFilter(csvFilter);

int result=chooser.showSaveDialog(Controller.frame);

if (result==JFileChooser.APPROVE\_OPTION){

File f=new File(chooser.getSelectedFile().getPath());

if(!f.getName().toLowerCase().endsWith(csvFilter.getExtension())){

cont.file=new File(chooser.getSelectedFile().getPath()+csvFilter.getExtension());

}else{

cont.file=f;

}

try {

Controller.processor.deparse();

Controller.processor.saveCSV(cont.file.getAbsolutePath());

cont.hasSaved=true;

int index=pane.getSelectedIndex();

pane.setTitleAt(index, cont.file.getName());

} catch (IOException e) {

e.printStackTrace();

}

}

}

});

SaveAs.setAccelerator(KeyStroke.getKeyStroke(KeyEvent.VK\_D,InputEvent.CTRL\_MASK));

JMenuItem Import=new JMenuItem("Import to JPEG");

Import.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

JFileChooser chooser = new JFileChooser();

chooser.setCurrentDirectory(new File("."));

ExtensionFileFilter jpegFilter=new ExtensionFileFilter("jpeg","JPEG Files");

chooser.setFileFilter(jpegFilter);

int result=chooser.showSaveDialog(Controller.frame);

if (result==JFileChooser.APPROVE\_OPTION){

File f=new File(chooser.getSelectedFile().getPath());

if(!f.getName().toLowerCase().endsWith(jpegFilter.getExtension())){

f=new File(chooser.getSelectedFile().getPath()+jpegFilter.getExtension());

}

BufferedImage im = new BufferedImage(cont.diagram.getWidth(),

cont.diagram.getHeight(),BufferedImage.TYPE\_INT\_RGB);

cont.diagram.paint(im.createGraphics());

try {

ImageIO.write(im,"jpeg",f);

} catch (IOException e) {

e.printStackTrace();

}

}

}

});

JMenuItem Exit=new JMenuItem("Exit");

Exit.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent event) {

setVisible(false);

Preferences p=Preferences.instance();

p.frameSize=getSize();

p.frameLocation=getLocation();

try {

p.saveProperty();

} catch (IOException e) {

e.printStackTrace();

}

System.exit(0);

}

});

Table.add(New);

Table.add(Open);

Table.add(Close);

Table.addSeparator();

Table.add(Save);

Table.add(SaveAs);

Table.addSeparator();

Table.add(Import);

Table.addSeparator();

Table.add(Exit);

b.add(Table);

JMenu Point=new JMenu("Point");

JMenuItem Add=new JMenuItem("Add");

Add.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

cont.model.addRow();

if(cont.hasSaved==true){

int index=pane.getSelectedIndex();

String name=pane.getTitleAt(index);

pane.setTitleAt(index, name+"\*");

cont.hasSaved=false;

}

repaint();

}

});

Add.setAccelerator(KeyStroke.getKeyStroke('a'));

Point.add(Add);

JMenuItem Insert=new JMenuItem("Insert");

Insert.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

cont.model.insertRow(cont.table.getSelectedRow());

if(cont.hasSaved==true){

int index=pane.getSelectedIndex();

String name=pane.getTitleAt(index);

pane.setTitleAt(index, name+"\*");

cont.hasSaved=false;

}

repaint();

}

});

Insert.setAccelerator(KeyStroke.getKeyStroke('i'));

Point.add(Insert);

JMenuItem Remove=new JMenuItem("Remove");

Remove.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

cont.model.removeRow(cont.table.getSelectedRow());

if(cont.hasSaved==true){

int index=pane.getSelectedIndex();

String name=pane.getTitleAt(index);

pane.setTitleAt(index, name+"\*");

cont.hasSaved=false;

}

repaint();

}

});

Remove.setAccelerator(KeyStroke.getKeyStroke('r'));

Point.add(Remove);

JMenuItem AddChain=new JMenuItem("Add Chain");

AddChain.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

cont.model.addPolygon();

if(cont.hasSaved==true){

int index=pane.getSelectedIndex();

String name=pane.getTitleAt(index);

pane.setTitleAt(index, name+"\*");

cont.hasSaved=false;

}

repaint();

}

});

Point.addSeparator();

Point.add(AddChain);

JMenuItem RemoveChain=new JMenuItem("Remove Chain");

RemoveChain.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

cont.model.removePolygon(cont.table.getSelectedRow());

if(cont.hasSaved==true){

int index=pane.getSelectedIndex();

String name=pane.getTitleAt(index);

pane.setTitleAt(index, name+"\*");

cont.hasSaved=false;

}

repaint();

}

});

Point.add(RemoveChain);

JMenuItem Colorx=new JMenuItem("Color");

Colorx.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

int id=cont.model.getId(cont.table.getSelectedRow());

if(id>0){

Color col=JColorChooser.showDialog(Controller.frame,

"Chain Color",cont.polygons.get(id-1).getColor());

cont.polygons.get(id-1).setColor(col);

repaint();

}

}

});

Point.add(Colorx);

b.add(Point);

JMenu propMenu=new JMenu("Options");

JMenuItem defColorItem=new JMenuItem("Default Colors");

defColorItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

ColorDialog dialog=new ColorDialog(Controller.frame,"Select default colors");

if(dialog.getResult()==1){

Preferences pr=Preferences.instance();

Controller c;

for(int i=0; i<Controller.panels.size(); i++){

c=Controller.panels.get(i);

for(int j=0; j<pr.color.size(); j++){

c.colors.set(j, pr.color.get(j));

}

c.diagram.setColors(c.colors);

}

repaint();

}

}

});

propMenu.add(defColorItem);

JMenuItem backColorItem=new JMenuItem("Back Color");

backColorItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences pr=Preferences.instance();

Color col=JColorChooser.showDialog(Controller.frame, "Back Color",pr.backColor);

pr.backColor=col;

repaint();

}

});

propMenu.add(backColorItem);

JMenuItem coorColorItem=new JMenuItem("Coordinate Color");

coorColorItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences pr=Preferences.instance();

Color col=JColorChooser.showDialog(Controller.frame, "Back Color",pr.backColor);

pr.coordinateColor=col;

repaint();

}

});

propMenu.add(coorColorItem);

JMenuItem coorItem=new JMenuItem("Coordinate");

coorItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

CoordinateDialog dialog=new CoordinateDialog(Controller.frame,"Select Size");

if(dialog.getResult()==1){

Preferences pr=Preferences.instance();

int[] num=dialog.getNumber();

pr.countXLine=num[0];

pr.countYLine=num[1];

pr.defSize.maxX=num[2];

pr.defSize.minX=num[3];

if(pr.defSize.minX>pr.defSize.maxX){

pr.defSize.maxX=num[3];

pr.defSize.minX=num[2];

}

pr.defSize.maxY=num[4];

pr.defSize.minY=num[5];

if(pr.defSize.minY>pr.defSize.maxY){

pr.defSize.maxY=num[5];

pr.defSize.minY=num[4];

}

repaint();

}

}

});

propMenu.add(coorItem);

JMenu autoItem=new JMenu("Autosize");

ButtonGroup group=new ButtonGroup();

JRadioButtonMenuItem yesItem=new JRadioButtonMenuItem("Yes");

JRadioButtonMenuItem noItem=new JRadioButtonMenuItem("No");

group.add(yesItem);

group.add(noItem);

autoItem.add(yesItem);

autoItem.add(noItem);

Preferences p=Preferences.instance();

yesItem.setSelected(p.autoSize);

noItem.setSelected(!p.autoSize);

yesItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences pr=Preferences.instance();

pr.autoSize=true;

repaint();

}

});

noItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences pr=Preferences.instance();

pr.autoSize=false;

repaint();

}

});

propMenu.addSeparator();

propMenu.add(autoItem);

JMenu drawCoorItem=new JMenu("Draw Coordinate");

ButtonGroup group1=new ButtonGroup();

JRadioButtonMenuItem yes1Item=new JRadioButtonMenuItem("Yes");

JRadioButtonMenuItem no1Item=new JRadioButtonMenuItem("No");

group1.add(yes1Item);

group1.add(no1Item);

drawCoorItem.add(yes1Item);

drawCoorItem.add(no1Item);

yes1Item.setSelected(p.drawCoor);

no1Item.setSelected(!p.drawCoor);

yes1Item.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences pr=Preferences.instance();

pr.drawCoor=true;

repaint();

}

});

no1Item.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences pr=Preferences.instance();

pr.drawCoor=false;

repaint();

}

});

propMenu.add(drawCoorItem);

JMenuItem resetItem=new JMenuItem("Reset");

resetItem.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent arg0) {

Preferences.reset();

Preferences pr=Preferences.instance();

Controller c;

for(int i=0; i<Controller.panels.size(); i++){

c=Controller.panels.get(i);

for(int j=0; j<pr.color.size(); j++){

c.colors.set(j, pr.color.get(j));

}

c.diagram.setColors(c.colors);

}

repaint();

}

});

propMenu.addSeparator();

propMenu.add(resetItem);

b.add(propMenu);

setJMenuBar(b);

}

}

package com.lab111.labwork2;

import java.awt.Color;

import java.awt.Graphics;

import java.awt.Graphics2D;

import java.awt.geom.Line2D;

import java.awt.geom.Point2D;

import java.awt.geom.Rectangle2D;

import java.util.ArrayList;

/\*\*

\* class that present polygon

\* @author click

\*

\*/

public class Polygon {

/\*\*

\* color of polygon

\*/

private Color color;

/\*\*

\* list of points

\*/

private ArrayList<Point2D> points;

/\*\*

\* constructor

\* @param points list of points

\*/

public Polygon(ArrayList<Point2D> points){

this.points=points;

}

/\*\*

\* constructor with empty parameters

\*/

public Polygon(){

points=new ArrayList<Point2D>();

}

/\*\*

\* return the size of polygon

\* @return size

\*/

public Size getSize(){

Size s=new Size();

Point2D p=points.get(0);

double x;

double y;

int length=points.size();

if(length>=0){

s.maxX=p.getX();

s.minX=p.getX();

s.maxY=p.getY();

s.minY=p.getY();

for(int i=0; i<length; i++){

p=points.get(i);

x=p.getX();

y=p.getY();

if(x>s.maxX){

s.maxX=x;

}

else{

if(x<s.minX){

s.minX=x;

}

}

if(y>s.maxY){

s.maxY=y;

}

else{

if(y<s.minY){

s.minY=y;

}

}

}

}

return s;

}

/\*\*

\* drawing sequence of points

\* @param g graphic context

\* @param s Size size

\*/

public void draw(Graphics g,Size s){

Graphics2D g2=(Graphics2D) g;

g2.setPaint(color);

Point2D p1=points.get(0);

Point2D p2;

Line2D line;

Rectangle2D r=new Rectangle2D.Double((p1.getX()-s.minX)\*s.mashX+13,(s.maxY-p1.getY())\*s.mashY+13,5,5);

g2.fill(r);

for(int i=1; i<points.size(); i++){

p2=points.get(i);

line=new Line2D.Double((p1.getX()-s.minX)\*s.mashX+15,(s.maxY-p1.getY())\*s.mashY+15,

(p2.getX()-s.minX)\*s.mashX+15,(s.maxY-p2.getY())\*s.mashY+15);

r=new Rectangle2D.Double((p2.getX()-s.minX)\*s.mashX+13,(s.maxY-p2.getY())\*s.mashY+13,5,5);

g2.draw(line);

g2.fill(r);

p1=p2;

}

}

/\*\*

\* set the color of sequenece

\* @param c color

\*/

public void setColor(Color c){

color=c;

}

/\*\*

\* getter for color

\* @return color

\*/

public Color getColor(){

return color;

}

/\*\*

\* getter the the length

\* @return length

\*/

public int getLength(){

return points.size();

}

/\*\*

\* getter for some point

\* @param i index

\* @return point

\*/

public Point2D getPoint(int i){

return points.get(i);

}

/\*\*

\* setter the point with index

\* @param i index

\* @param p point

\*/

public void setPoint(int i, Point2D p){

points.set(i, p);

}

/\*\*

\* adding the point into the end

\* @param p point

\*/

public void addPoint(Point2D p){

points.add(p);

}

/\*\*

\* removing the Point with index..

\* @param i index

\*/

public void removePoint(int i){

if(points.size()>1)

points.remove(i);

}

/\*\*

\* insert Point with index

\* @param i index

\* @param p point

\*/

public void insertPoint(int i,Point2D p){

points.add(i,p);

}

}

package com.lab111.labwork2;

import java.awt.Color;

import java.awt.Dimension;

import java.awt.Point;

import java.io.BufferedInputStream;

import java.io.BufferedOutputStream;

import java.io.File;

import java.io.FileInputStream;

import java.io.FileOutputStream;

import java.io.IOException;

import java.io.ObjectInputStream;

import java.io.ObjectOutputStream;

import java.util.ArrayList;

/\*\*

\* class for Options which

\* will loaded for program

\* @author click

\*

\*/

public class Preferences {

/\*\*

\* list of colors

\*/

ArrayList<Color> color;

/\*\*

\* color of grid

\*/

Color backColor;

/\*\*

\*size of frame

\*/

Dimension frameSize;

/\*\*

\* position of the frame

\*/

Point frameLocation;

/\*\*

\* number of grid lines on the OX

\*/

int countXLine;

/\*\*

\* number of grid lines on the OY

\*/

int countYLine;

/\*\*

\* automatic calculate size

\*/

boolean autoSize;

/\*\*

\* manual size

\*/

Size defSize;

/\*\*

\* last files

\*/

ArrayList<File> lastFiles;

/\*\*

\* color of coordinates

\*/

Color coordinateColor;

/\*\*

\* drawing the coordinate

\*/

boolean drawCoor;

/\*\*

\* default Colors

\*/

static final Color[] defColor={Color.BLACK,Color.GREEN, Color.ORANGE,Color.BLUE,Color.MAGENTA};

/\*\*

\* file with Options

\*/

static final File prefFile=new File("Pefrences.pref");

/\*\*

\* one example of options

\*/

private static Preferences preferences=new Preferences();

/\*\*

\* private constructor for Singleton

\*/

private Preferences(){

color=new ArrayList<Color>(5);

color.add(Color.BLACK);

color.add(Color.GREEN);

color.add(Color.ORANGE);

color.add(Color.BLUE);

color.add(Color.MAGENTA);

frameSize=new Dimension(1000,500);

frameLocation=new Point(0,0);

lastFiles=new ArrayList<File>();

countXLine=10;

countYLine=10;

backColor=Color.GRAY;

coordinateColor=Color.RED;

defSize=Size.getDefaultSize();

autoSize=true;

drawCoor=true;

}

/\*\*

\* instantiation

\* @return Preferences

\*/

public static Preferences instance(){

return preferences;

}

/\*\*

\* save the preferences

\* @throws IOException

\*/

public void saveProperty() throws IOException{

ObjectOutputStream out=new ObjectOutputStream(

new BufferedOutputStream(new FileOutputStream(prefFile)));

out.writeObject(color);

out.writeObject(backColor);

out.writeObject(coordinateColor);

out.writeObject(frameSize);

out.writeObject(frameLocation);

out.writeObject(defSize);

out.writeInt(countXLine);

out.writeInt(countYLine);

out.writeBoolean(autoSize);

out.writeBoolean(drawCoor);

out.writeObject(lastFiles);

out.flush();

out.close();

}

/\*\*

\* load Preferences from file

\* @throws IOException I/O error

\* @throws ClassNotFoundException not found the class

\*/

public void loadProperty() throws IOException, ClassNotFoundException{

if(prefFile.exists()){

ObjectInputStream in=new ObjectInputStream(

new BufferedInputStream(new FileInputStream(prefFile)));

color=(ArrayList<Color>) in.readObject();

backColor=(Color) in.readObject();

coordinateColor=(Color) in.readObject();

frameSize=(Dimension) in.readObject();

frameLocation=(Point) in.readObject();

defSize=(Size) in.readObject();

countXLine=in.readInt();

countYLine=in.readInt();

autoSize=in.readBoolean();

drawCoor=in.readBoolean();

lastFiles=(ArrayList<File>) in.readObject();

in.close();

}

}

/\*\*

\* reset to default preferences

\*/

public static void reset(){

preferences=new Preferences();

}

}

**package** com.lab111.labwork2;

**import** java.io.Serializable;

/\*\*

\* class that represented the size and scale in diagram

\* using for drawing the polygons

\* **@author** click

\*

\*/

**public** **class** Size **implements** Serializable {

/\*\*

\* generated version

\*/

**private** **static** **final** **long** *serialVersionUID* = -4883355893341448421L;

/\*\*

\* maximum value х

\*/

**double** maxX;

/\*\*

\* maximum value у

\*/

**double** maxY;

/\*\*

\* minimum value х

\*/

**double** minX;

/\*\*

\* minimal value у

\*/

**double** minY;

/\*\*

\* scale х

\*/

**double** mashX;

/\*\*

\* scale у

\*/

**double** mashY;

/\*\*

\* constructor

\* fields initialization with default values

\*/

**public** Size(){

maxX=0;

maxY=0;

minX=0;

minY=0;

mashX=1;

mashY=1;

}

/\*\*

\* compare the size

\* **@param** s size

\*/

**public** **void** compare(Size s){

maxX=Math.*max*(maxX, s.maxX);

maxY=Math.*max*(maxY, s.maxY);

minX=Math.*min*(minX, s.minX);

minY=Math.*min*(minY, s.minY);

}

/\*\*

\* output the size

\*/

**public** **void** show(){

System.*out*.println("maxX="+maxX);

System.*out*.println("minX="+minX);

System.*out*.println("maxY="+maxY);

System.*out*.println("minY="+minY);

System.*out*.println("mashX="+mashX);

System.*out*.println("mashY="+mashY);

}

/\*\*

\* getter the default size

\* **@return** size

\*/

**public** **static** Size getDefaultSize(){

Size s=**new** Size();

s.maxX=100;

s.maxY=100;

s.minX=-100;

s.minY=-100;

**return** s;

}

}

**package** com.lab111.labwork2;

**import** java.awt.geom.Point2D;

**import** java.util.ArrayList;

**import** javax.swing.JTabbedPane;

**import** javax.swing.table.AbstractTableModel;

/\*\*

\* model of tabel extends abstract table model

\* **@author** click

\*

\*/

**public** **class** TableModel **extends** AbstractTableModel{

/\*\*

\*

\*/

**private** **static** **final** **long** *serialVersionUID* = -3800615525582624856L;

/\*\*

\* list of polygons

\*/

**private** ArrayList<Polygon> polygon;

/\*\*

\* panel with diagram

\*/

**private** DiagramDrawer diagram;

/\*\*

\* array with classes for Column

\*/

**private** **final** Class<?>[] columnClass={Integer.**class**,Integer.**class**,Double.**class**,Double.**class**};

/\*\*

\* Array of name of columns

\*/

**private** **final** String[] columnName={"Number","Id","X","Y"};

**public** TableModel(DiagramDrawer d) {

diagram=d;

polygon=d.getPolygon();

}

/\*\*

\* Constructor

\* **@param** list

\* **@param** d

\*/

**public** TableModel(ArrayList<Polygon> list, DiagramDrawer d){

polygon=list;

diagram=d;

}

@Override

/\*\*

\* get number of column

\*/

**public** **int** getColumnCount() {

**return** 4;

}

@Override

/\*\*

\* get number of Row

\*/

**public** **int** getRowCount() {

**int** k=0;

**for** (Polygon pl: polygon){

k+=pl.getLength();}

**return** k;

}

/\*\*

\* get Value (point coordinate)

\*/

**public** Object getValueAt(**int** rowIndex, **int** columnIndex) {

**if**(columnIndex == 0) **return** rowIndex+1;

**int** id=getId(rowIndex);

**if**(columnIndex==1) **return** id;

**int** index=rowIndex;

**for**(**int** i=0; i<(id-1); i++){

index-=polygon.get(i).getLength();

}

Point2D p=polygon.get(id-1).getPoint(index);

**if**(columnIndex==2) **return** p.getX();

**else** **return** p.getY();

}

/\*\*

\* get column name

\*/

**public** String getColumnName(**int** column){

**return** columnName[column];

}

/\*\*

\* getter for column class

\*/

**public** Class<?> getColumnClass(**int** column){

**return** columnClass[column];

}

/\*\*

\* resolution for edit the cell

\*/

**public** **boolean** isCellEditable(**int** row, **int** column){

**if**(column>1) **return** **true**;

**else** **return** **false**;

}

/\*\*

\* set value at the target cell

\*/

**public** **void** setValueAt(Object o,**int** r,**int** c){

**int** id=getId(r);

**int** index=r;

**for**(**int** i=0; i<(id-1); i++)

index-=polygon.get(i).getLength();

**double** x;

**double** y;

Point2D p=polygon.get(id-1).getPoint(index);

**if**(c==2){

x=(Double) o;

y=p.getY();

}**else**{

x=p.getX();

y=(Double) o;

}

**if**(x==p.getX() && y==p.getY()) **return**;

polygon.get(id-1).setPoint(index,**new** Point2D.Double(x,y));

fireTableDataChanged();

Controller cont=Controller.*frame*.getController();

JTabbedPane pane=Controller.*frame*.getPane();

**if**(cont.hasSaved==**true**){

**int** ind=pane.getSelectedIndex();

String name=pane.getTitleAt(ind);

pane.setTitleAt(ind, name+"\*");

cont.hasSaved=**false**;

}

diagram.repaint();

}

/\*\*

\* adding the Row to the table

\*/

**public** **void** addRow(){

**int** id=polygon.size();

Polygon pl=polygon.get(id-1);

pl.addPoint(**new** Point2D.Double(0,0));

fireTableDataChanged();

}

/\*\*

\* new Polygon adding

\*/

**public** **void** addPolygon(){

Polygon pl=**new** Polygon();

pl.addPoint(**new** Point2D.Double(0,0));

polygon.add(pl);

fireTableDataChanged();

}

/\*\*

\* remove Row

\* **@param** rowIndex index of a Row

\*/

**public** **void** removeRow(**int** rowIndex){

**int** id=getId(rowIndex);

**if**(id<0) **return**;

**int** index=rowIndex;

**for**(**int** i=0; i<(id-1); i++){

index-=polygon.get(i).getLength();

}

polygon.get(id-1).removePoint(index);

**if**(polygon.get(id-1).getLength()==0) polygon.remove(id-1);

fireTableDataChanged();

}

/\*\*

\* removing the polygon

\* **@param** rowIndex index of polygon

\*/

**public** **void** removePolygon(**int** rowIndex){

**int** id=getId(rowIndex);

**if**(id<0) **return**;

**if**(polygon.size()>1) polygon.remove(id-1);

fireTableDataChanged();

}

/\*\*

\* inserting row to the table into the index position

\* **@param** rowIndex index position

\*/

**public** **void** insertRow(**int** rowIndex){

**int** id=getId(rowIndex);

**if**(id<0){

addRow();

**return**;

}

**int** index=rowIndex;

**for**(**int** i=0; i<(id-1); i++){

index-=polygon.get(i).getLength();

}

polygon.get(id-1).insertPoint(index,**new** Point2D.Double(0,0));

fireTableDataChanged();

}

/\*\*

\*set list of Polygon

\* **@param** list

\*/

**public** **void** setPolygon(ArrayList<Polygon> list){

polygon=list;

fireTableDataChanged();

}

/\*\*

\*get id Polygon with rowIndex of polygon

\* **@param** rowIndex index of a row

\* **@return** number of polygon

\*/

**public** **int** getId(**int** rowIndex){

**if**(rowIndex<0) **return** -1;

**int** l=0;

**int** id=1;

**for**(Polygon ch:polygon){

l+=ch.getLength();

**if**(rowIndex<l) **return** id;

id++;

}

**return** -1;

}

}