

Capitolo 1

Classi e Metodi in BloodlineSeeker

- **class Main**
 - VERSION : String
 - + main(String[] args) : void
 - run() : void
 - programConfiguration() : void
 - parseArgs(String[] inputArgs) : boolean
 - runTests() : void
 - printHelp() : void
 - printVersion() : void

1.1 Pacchetto frontend

- **final class FrontendManager**
 - + APP_LOGO : Image
 - + APP_TITLE : String
 - + setupGUI() : void
 - + loadFonts() : void
 - + switchToMainWindow() : void
 - + createLauncherWindow() : void
 - + saveDynastyGraph() : void

1.1.1 Pacchetto mainwindow

- **class MainWindowManager**
 - window : MainWindow
 - isSetup : boolean
 - + setupMainWindow() : boolean
 - createMainWindow() : void
 - setLookAndFeel() : void
 - getWindow() : MainWindow
 - + changeGraph(Dynasty dynasty, Member member) : void
 - + getImage() : BufferedImage
 - + searchMembers() : void
 - + updateScrollPane(String query) : void
 - showSuggestion(String suggestion) : void
 - showResultNotFound() : void
 - + openLink(String link) : void
 - + buildNewTitle(Member member, Dynasty dynasty) : String
 - + updateWindowTitle(String toAppend) : void
 - + refresh() : void
 - + getWindowScrollPaneController() : ScrollPaneController
 - + getWindowImageController() : ImageController
 - + getWindowImageHolder() : ImageHolder
 - + getWindowScrollPane() : ScrollPane
 - + getWindowSearchBar() : SearchBar
 - + getWindowButtonBox() : ButtonBox
 - + getWindowInfoBox() : InfoBox
 - + getWindowContentPane() : JComponent

- **class ButtonBox extends JPanel**
 - + «create» ButtonBox()
 - serialVersionUID : long
 - downloadButton : AntiAliasedImageButton
 - wikipediaButton : AntiAliasedImageButton

- downloadText : AntiAliasedTextLabel
- wikipediaText : AntiAliasedTextLabel
- setup() : void
- addComponent() : void
- createImageButton(String icon, String pressedIcon, int x, int y, int width, int height) : AntiAliasedImageButton
- createLabel(String text, int x, int y, int width, int height) : AntiAliasedTextLabel
- createDownloadButton() : void
- createWikipediaButton() : void
- createDownloadText() : void
- createWikipediaText() : void

- **class InfoBox extends JPanel**

- + «create» InfoBox()
- serialVersionUID : long
- mouseWheelLabel : AntiAliasedImageLabel
- wasdLabel : AntiAliasedImageLabel
- wasdText : AntiAliasedTextLabel
- mouseWheelText : AntiAliasedTextLabel
- setup() : void
- createComponent() : void
- createTextLabel(String text, int x, int y, int width, int height) : AntiAliasedTextLabel
- createImageLabel(String icon, int x, int y, int width, int height) : AntiAliasedImageLabel
- createWasdIcon() : void
- createMauseWheelIcon() : void
- createWasdText() : void
- createMauseWheelText() : void

- **class ImageEditor**

- LABEL_WIDTH : int
- LABEL_HEIGHT : int

- SHIFT_COMPUTE : int
- ZOOM_COPMUTE : int
- MIN_ZOOM_IMAGE_SIZE : int
- image : BufferedImage
- imageWidth : int
- imageHeight : int
- imageMinDimension : int
- startX : int
- startY : int
- shift : int
- shiftValue : int
- zoom : int
- zoomValue : int
- maxZoom : int
- + setImageToEdit(BufferedImage newImage) : void
- + editImage() : ImageIcon
- + editImage(int zoomChange) : ImageIcon
- + editImage(int xChange, int yChange) : ImageIcon
- adjustImage(BufferedImage image) : BufferedImage
- changeX(int xChange) : void
- changeY(int yChange) : void
- zoomChange(int zoomChange) : void
- resizeImage(BufferedImage image, int width, int height) : BufferedImage
- toImageIcon(BufferedImage image) : ImageIcon
- setImageSize(int width, int height) : void
- computeShift() : int
- computeZoom() : int
- getMinDimension() : int
- + getImage() : BufferedImage

• **class ImageHolder extends JPanel**

- + «create» ImageHolder()

- serialVersionUID : long
- label : AntiAliasedImageLabel
- setup() : void
- createLabel() : void
- + getLabel() : AntiAliasedImageLabel
- setMouseListener() : void

- **class ImageController**
 - + «create» ImageController()
 - VERTICAL_DISPLACEMENT : int
 - HORIZONTAL_DISPLACEMENT : int
 - RECTANGLE_BACKGROUND : int
 - RECTANGLE_HEIGHT : int
 - GRAPH_MARGIN : int
 - UPPER_LEFT_X_SHIFT : int
 - UPPER_LEFT_Y_SHIFT : int
 - imageEditor : ImageEditor
 - defaultImage : ImageIcon
 - searchBarTextField : JTextField
 - label : AntiAliasedImageLabel
 - canBrowse : boolean
 - + zoom(int zoom) : void
 - + move(int xChange , int yChange) : void
 - setImageToEdit(ImageIcon image) : void
 - + changeGraph(BufferedImage newImage) : void
 - + setDefaultImage() : void
 - canBrowse() : boolean
 - findColoredRectangle(BufferedImage graphImage) : Point
 - findHorizontalRectBound(BufferedImage graphImage, int startX, int startY, int increment) : int
 - findVerticalRectBound(BufferedImage graphImage, int startX, int startY, int increment) : int

- + findCenter(BufferedImage graphImage) : Point
- + getGraph() : BufferedImage
- + getBrowse() : boolean

- **class SearchBar extends JPanel**
 - + «create» SearchBar()
 - DEFAULT_TEXT : String
 - serialVersionUID : long
 - searchIcon : ImageIcon
 - activeSearchIcon : ImageIcon
 - searchActionListener : SearchBarActionListener
 - textField; : AntiAliasedTextField
 - button : AntiAliasedImageButton
 - panel : JPanel
 - setup() : void
 - createTextField() : void
 - createPanel() : void
 - createButton() : void
 - + getText() : String
 - + removeFocus() : void
 - + setText(String string) : void
 - + getTextField() : AntiAliasedTextField
 - addActionListener() : void
 - setUI() : void

- **final class SuggestionMessage extends JPanel**
 - serialVersionUID : long
 - defaultLabel : String
 - HTML_OPEN_TAG : String
 - HTML_CLOSE_TAG : String
 - textPanel : JPanel
 - buttonPanel : JPanel

- + suggestion) : SuggestionMessage(String)
- setup() : void
- createTextPanel() : void
- createButtonPanel(String suggestion) : void
- createSuggestionLabel() : AntiAliasedTextLabel
- createSearchButton(String suggestion) : AntiAliasedTextButton

- **class ScrollPane extends JPanel**

- + «create» ScrollPane()
- serialVersionUID : long
- SCROLL_INCREMENT : int
- SCROLLBAR_WIDTH : int
- SCROLLBAR_ARC : int
- ORIGIN_POINT : Point
- scrollPane : JScrollPane
- cardHolder : JPanel
- setup() : void
- createCardHolder() : void
- createScrollPane() : void
- setUI() : void
- + getCardHolder() : JPanel
- + resetScrollBar() : void

- **final class ResultNotFoundMessage extends JPanel**

- + «create» ResultNotFoundMessage()
- DEFAULT_LABEL : String
- serialVersionUID : long
- suggestionLabel : AntiAliasedTextLabel
- setup() : void
- createNotFoundLabel() : void

- **class ScraperResultCard extends JPanel**

- + «create» ScraperResultCard (int y, String romanIndex, Dynasty dynasty, Member member)
- serialVersionUID : long
- indexLabel : AntiAliasedTextLabel
- nameLabel : AntiAliasedTextLabel
- dynastyLabel : AntiAliasedTextLabel
- wikipediaButton : AntiAliasedImageButton
- graphButton : AntiAliasedImageButton
- dynasty : Dynasty
- member : Member
- romanIndex : String
- setup(int y) : void
- createComponents() : void
- createImageButton(String icon, String pressedIcon, int x, int y, int width, int height) : AntiAliasedImageButton
- createLabel(String text, Font font, int x, int y, int width, int height) : AntiAliasedTextLabel
- createIndexLabel(String romanIndex) : void
- createNameLabel(String memberName) : void
- createDynastyLabel(String dynastyName) : void
- createWikipediaButton() : void
- createGraphButton() : void
- setUI() : void

- **final class** ScrollPaneController

- + «create» ScrollPaneController()
- PANEL_WIDTH : int
- PANEL_HEIGHT : int
- VERTICAL_CARD_GAP : int
- CARD_HEIGHT : int
- cardHolder : JPanel
- scrollPane : ScrollPane
- createSuggestion(String suggestion) : void

- createCards(ArrayList<ScraperResult> data) : void
- createCard(int index ,ScraperResult scraperResult) : ScraperResultCard
- removeAll() : void
- + showScrollPaneResults(ArrayList<ScraperResult> data) : void
- + showScrollPaneSuggestion(String suggestion) : void
- computeY(int i) : int
- + showResultNotFoundCard() : void

- **class MainWindow extends JFrame**

- + «create» MainWindow()
- serialVersionUID : long
- WINDOW_DIM : Dimension
- scrollPaneController : ScrollPaneController
- imageController : ImageController
- imageHolder : ImageHolder
- scrollPane : ScrollPane
- searchbar : SearchBar
- buttonBox : ButtonBox
- infoBox : InfoBox
- background : JPanel
- setup() : void
- createStaticComponents() : void
- + createDynamicComponents() : void
- createBackgroundPanel() : void
- createSearchBar() : void
- createInfoBox() : void
- createButtonBox() : void
- createImageHolder() : void
- createScrollPane() : void
- createImageController() : void
- createScrollPaneController() : void
- sleep() : void

- `setActionListener() : void`
- `setKeyBindingController() : void`
- + `getScrollPaneController() : ScrollPaneController`
- + `getImageController() : ImageController`
- + `getImageHolder() : ImageHolder`
- + `getScrollPane() : ScrollPane`
- + `getButtonBox() : ButtonBox`
- + `getInfoBox() : InfoBox`
- + `getSearchBar() : SearchBar`

- **class** `OpenDynastyLinkActionListener implements ActionListener`
 - + `actionPerformed(ActionEvent e) : void`
- **class** `ImageHolderMouseWheelListener implements MouseWheelListener`
 - + `mouseWheelMoved(MouseWheelEvent wheel) : void`
- **class** `ImageHolderFocusMouseListener extends MouseAdapter`
 - + `mouseClicked(MouseEvent e) : void`
- **class** `KeyBindingController`
 - + `addKeyBindingController() : void`
- **class** `RightKeyAction extends AbstractAction`
 - `serialVersionUID : long`
 - + `actionPerformed(ActionEvent e) : void`
- **class** `UpKeyAction extends AbstractAction`
 - `serialVersionUID : long`
 - + `actionPerformed(ActionEvent e) : void`
- **class** `DownKeyAction extends AbstractAction`
 - `serialVersionUID : long`

- + actionPerformed(ActionEvent e) : void
- **class EscKeyAction extends AbstractAction**
 - serialVersionUID : long
 - + actionPerformed(ActionEvent e) : void
- **class LeftKeyAction extends AbstractAction**
 - serialVersionUID : long
 - + actionPerformed(ActionEvent e) : void
- **class SuggestionSearchBarActionListener implements ActionListener**
 - + «create» SuggestionSearchBarActionListener(String suggestion)
 - suggestion : String
 - + actionPerformed(ActionEvent e) : void
- **class SearchBarActionListener implements ActionListener**
 - + actionPerformed(ActionEvent e) : void
- **class GenerateGraphActionListener implements ActionListener**
 - + «create» GenerateGraphActionListener(Dynasty dynasty, Member member)
 - dynasty : Dynasty
 - member : Member
 - + actionPerformed(ActionEvent e) : void
- **class OpenMemberLinkActionListener implements ActionListener**
 - link : String
 - + «create» OpenMemberLinkActionListener(String link)
 - + actionPerformed(ActionEvent e) : void

1.1.2 Pacchetto launcher

- **final class** ConsoleRunner **extends** Thread
 - DOWNLOAD_START_MSG : String
 - DOWNLOAD_COMPLETE_MSG : String
 - SAVING_COMPLETE_MSG : String
 - + run() : void
 - updateConsoleAndSleep(String consoleMsg, long timeSleep) : void
- **class** ConsolePage **extends** JPanel
 - + «create» ConsolePage()
 - CONSOLE_MAX_LINES : int
 - serialVersionUID : long
 - consoleOutput : AntiAliasedTextLabel
 - linesQueue : Queue<String>
 - lastLine : String
 - setup() : void
 - createConsoleOutputLabel() : void
 - formatOutput() : String
 - + updateConsole(String newLine) : void
- **class** DownloadPage **extends** JPanel
 - + «create» DownloadPage()
 - serialVersionUID : long
 - UPPER_DESC_LABEL_MSG : String
 - LOWER_DESC_LABEL_MSG : String
 - checkBoxPanel : CheckBoxPanel
 - setup() : void
 - setDescriptionLabel() : void
 - createLabel(String text, int x, int y, int width, int height) : AntiAliasedTextLabel
 - createCheckBoxPanel() : void
 - + setStartButton() : void
 - + getCheckBoxPanel() : CheckBoxPanel

- **class CheckBoxPanel extends JPanel**
 - + «create» CheckBoxPanel()
 - serialVersionUID : long
 - SPACING_AMOUNT : int
 - SPACING_CHAR : char
 - SELENIUM_CHECKBOX_MSG : String
 - HTTP_CHECKBOX_MSG : String
 - seleniumCheckBox : AntiAliasedTextCheckBox
 - httpCheckBox : AntiAliasedTextCheckBox
 - setup() : void
 - createCheckBox() : void
 - createCheckBox(String checkboxMsg, boolean selected, int x, int y, int width, int height) : AntiAliasedTextCheckBox
 - buildRepeatedCharString(char ch, int amount) : String
 - + getHTTP() : AntiAliasedTextCheckBox
 - + getSelenium() : AntiAliasedTextCheckBox
- **class StartButton extends AntiAliasedTextButton**
 - + «create» StartButton()
 - serialVersionUID : long
 - TEXT : String
 - setup() : void
- **class CreditPanel extends JPanel**
 - + «create» CreditPanel()
 - serialVersionUID : long
 - alessioBandieraLabel : AntiAliasedTextLabel
 - matteoBenvenutiLabel : AntiAliasedTextLabel
 - simoneBiancoLabel : AntiAliasedTextLabel
 - andreaLadoganaLabel : AntiAliasedTextLabel
 - setup() : void
 - createNames() : void

- createNameLabel(String name, int x, int y, int width, int height) : AntiAliasedTextLabel
-
- **class** PageButtonPanel **extends** JPanel
 - + «create» PageButtonPanel()
 - serialVersionUID : long
 - LOAD_MSG : String
 - DOWNLOAD_MSG : String
 - loadButton : AntiAliasedTextButton
 - downloadButton : AntiAliasedTextButton
 - setup() : void
 - createButtons() : void
 - createButton(String text, Border border, int x, int y, int width, int height) : AntiAliasedTextButton
 - + getLoadButton() : AntiAliasedTextButton
 - + getDownloadButton() : AntiAliasedTextButton
-
- **class** LoadPage **extends** JPanel
 - + «create» LoadPage()
 - serialVersionUID : long
 - UPPER_DESC_LABEL_MSG : String
 - LOWER_DESC_LABEL_MSG : String
 - EMPTY_LOAD_MSG : String
 - SUCCESS_LOAD_MSG : String
 - FAIL_LOAD_MSG : String
 - scrapingStatus : boolean
 - setup() : void
 - createDescriptionLabel() : void
 - createLabel(String text, int x, int y, int width, int height) : AntiAliasedTextLabel
 - + setScrapingStatusLabel() : void
 - setStartButton() : void

- **final class** LauncherManager
 - window : LauncherWindow
 - isSetup : boolean
 - pageStatus : boolean
 - + setupLauncher() : boolean
 - createLauncherWindow() : void
 - setLookAndFeel() : void
 - + switchPage() : void
 - + updateConsole(String newStatus) : void
 - getWindow() : LauncherWindow
 - + getPageStatus() : boolean
 - + getWindowPageButtonPanel() : PageButtonPanel
 - + getWindowContentPanel() : JPanel
 - + getWindowLoadPage() : LoadPage
 - + getWindowDownloadPage() : DownloadPage
 - + closeWindow() : void
 - + setWindowTitle(String newWindowTitle) : void
 - + switchToConsolePage() : void
 - + getWindowTitle() : String
 - + toggleSelenium() : void

- **class** LauncherWindow **extends** JFrame
 - + «create» LauncherWindow()
 - serialVersionUID : long
 - WINDOW_DIM : Dimension
 - background : JPanel
 - contentPanel : JPanel
 - pageButtonPanel : PageButtonPanel
 - loadPage : LoadPage
 - downloadPage : DownloadPage
 - consolePanel : ConsolePage
 - addComponent() : void

- setup() : void
- cratePages() : void
- cratePageButtonPanel() : void
- createPanel(Border border, Color color, int x, int y, int width, int height) : JPanel
- createContentPanel() : void
- createCreditPanel() : void
- createBackground() : void
- clear() : void
- + showConsole() : void
- + setWindowTitle(String newWindowTitle) : void
- + getContentPanel() : JPanel
- + getLoadPage() : LoadPage
- + getDownloadPage() : DownloadPage
- + getConsolePage() : ConsolePage
- + getPageButtonPanel() : PageButtonPanel
- + getWindowTitle() : String

- **class** SwitchPageActionListener implements ActionListener
 - + «create» SwitchPageActionListener(boolean isLoadPage)
 - + actionPerformed(ActionEvent e) : void

- **class** StartMainWindowActionListener implements ActionListener
 - + actionPerformed(ActionEvent arg0) : void

- **class** SwitchToConsolePageActionListener implements ActionListener
 - + actionPerformed(ActionEvent arg0) : void

- **class** CheckBoxActionListener implements ActionListener
 - + actionPerformed(ActionEvent e) : void

1.1.3 Pacchetto utils

- **class** ImageSaver **extends** Thread
 - + saveDynastyGraph() : void
 - createFileName(String folderName, String fileName, String extension) : String
 - + run() : void
- **enum** Margin
 - «create» Margin(int top, int left, int bottom, int right)
 - inset : Insets
 - + get() : Insets
- **enum** ComponentColor
 - «create» ComponentColor(int red, int green, int blue)
 - color : Color
 - + get() : Color
- **final class** FontLoader
 - + loadFont(String fontFile) : void
- **final class** ImageLoader
 - + asImageIcon(String path) : ImageIcon
 - + asImage(String path) : Image
 - + getImageURL(String path) : URL
 - + asBufferedImage(String path) : BufferedImage
- **class** Point
 - + «create» Point(int x, int y)
 - x : int
 - y : int
 - + getX() : int
 - + getY() : int

- **enum** QuattrocentoFont

- «create» QuattrocentoFont(String fontName, int fontStyle, int fontSize)
- font : Font
- + get() : Font

- **enum** ComponentBorder

- «create» ComponentBorder(Color color, int size)
- border : Border
- color, int top, int left, int bottom, int right) : ComponentBorder(Color)
- top, int left, int bottom, int right) : ComponentBorder(int)
- outsideBorder, Border insideBorder) : ComponentBorder(Border)
- + get() : Border

- **enum** FontPath

- «create» FontPath(String fontPath)
- path : String
- + get() : String

- **enum** ImagePath

- IMAGE_DIR : String
- path : String
- «creates» ImagePath(String imagePath)
- + get() : String

- **enum** RomanLiteral

- «creates» RomanLiteral(int decimal)
- decimal : int
- + get() : int
- + decimalToRoman(int decimal) : String

1.1.4 Pacchetto elements.antialiased

- **class AntiAliasedImageLabel extends JLabel**
 - serialVersionUID : long
 - + paintComponent(Graphics graphics) : void
- **class AntiAliasedImageButton extends JButton**
 - serialVersionUID : long
 - + paintComponent(Graphics graphics) : void
- **class AntialiasedTextFileChooser extends JFileChooser**
 - serialVersionUID : long
 - + paintComponent(Graphics graphics) : void
- **class AntiAliasedTextCheckBox extends JCheckBox**
 - + «creates» AntiAliasedTextCheckBox(String text)
 - + «creates» AntiAliasedTextCheckBox()
 - + «creates» AntiAliasedTextCheckBox(String test , boolean bool)
 - serialVersionUID : long
 - + paintComponent(Graphics graphics) : void
- **class AntiAliasedTextLabel extends JLabel**
 - + «creates» AntiAliasedTextLabel()
 - + «create» AntiAliasedTextLabel(String text)
 - serialVersionUID : long
 - + paintComponent(Graphics graphics) : void
- **class AntiAliasedTextField extends JTextField**
 - serialVersionUID : long
 - + paintComponent(Graphics graphics) : void
- **class AntiAliasedTextButton extends JButton**
 - + «create» AntiAliasedTextButton()

```
+ «create» AntiAliasedTextButton(String text)
- serialVersionUID : long
+ paintComponent(Graphics graphics) : void
```

1.2 Pacchetto backend

- **final class** BackendManager
 - + DATA_PATH : String
 - + PNG_PATH : String
 - + JSON_PATH : String
 - debugMode : boolean
 - seleniumMode : boolean
 - headlessMode : boolean
 - dynasties : ArrayList<Dynasty>
 - loadedDynasty : Dynasty
 - loadedMember : Member
 - runner : ScraperRunner
 - scraper : DynastiesScraper
 - + setupGraphviz() : void
 - + loadFromScraper() : void
 - + loadFromFiles() : boolean
 - JSONToDynasty(String dynastyJSONpath) : void
 - + saveSession() : void
 - + loadedDynastyToPNG() : void
 - + loadedDynastyToBufferedImage() : BufferedImage
 - + loadedMemberToPNG() : void
 - + loadedMemberToBufferedImage() : BufferedImage
 - listDir(String dirPath) : ArrayList<String>
 - + printDebug(String debugMsg) : void
 - + setDebugMode(boolean debugMode) : void
 - + setSeleniumMode(boolean seleniumMode) : void
 - + setHeadlessMode(boolean headlessMode) : void

```
+ setLoadedDynasty(Dynasty dynasty) : void
+ setLoadedMember(Member member) : void
+ getSeleniumMode() : boolean
+ getScraperStatus() : String
+ getDynasties() : ArrayList<Dynasty>
+ getLoadedDynasty() : Dynasty
+ getLoadedMember() : Member
+ isScraperRunnerActive() : boolean
+ isDebugModeActive() : boolean
```

1.2.1 Pacchetto controllers

- **class BinariesController**

```
+ TEMP_PATH : String
+ GRAPHVIZ_LOCAL_ZIP_PATH : String
+ GRAPHVIZ_TEMP_PATH : String
+ GRAPHVIZ_TEMP_EXE_PATH : String
+ DRIVERS_LOCAL_PATH : String
+ DRIVERS_TEMP_PATH : String
- getTempPath() : String
+ extractGraphVizBinaries() : void
+ extractDriverBinary(SeleniumDriver driver) : void
- extractZip(InputStream zipInputStream, String outputPath) : void
- removeTempDirectory(String folderToRemove) : void
+ clearTempDirectories() : void
```

- **class SearchQueryController**

```
+ findMatchingDynastyAsResults(String query) : ArrayList<ScraperResult>
+ findMatchingMembersAsResults(String query) : ArrayList<ScraperResult>
- findMatchingMemberAsNames(String query) : ArrayList<String>
+ findSuggestion(String query) : String
- findShortestSuggestion(ArrayList<String> possibleSuggestions) : String
- getSortedSubstrings(String query) : ArrayList<String>
+ sortResults(ArrayList<ScraperResult> results) : void
```

1.2.2 Pacchetto scraper

- **class** Dynasty **implements** JSONable
 - + «create» Dynasty(String name, String wikipediaLink)
 - name : String
 - wikipediaLink : String
 - members : ArrayList<Member>
 - membersResults : ArrayList<ScraperResult>
 - buildDynasty(HashMap<String, JSONObject> membersIDs, String name, String wikipediaLink) : Dynasty
 - getMembersIDs(JSONArray membersArray) : HashMap<String, JSONObject>
 - completeRelatives(HashMap<String, JSONObject> membersIDs, Member member, Relative relativeType, JSONArray relativesIDs) : void
 - + fromJSONObject(JSONObject json) : Dynasty
 - + fromJSONFile(String jsonPath) : Dynasty
 - + toJSONObject() : JSONObject
 - + toString() : String
 - + setName(String name) : void
 - + setLink(String wikipediaLink) : void
 - + addMember(Member member) : void
 - + addMemberResult(Member member) : void
 - + getName() : String
 - + getWikipediaLink() : String
 - + getMembers() : ArrayList<Member>
 - + getMembersResults() : ArrayList<ScraperResult>
- **final class** DynastyVisualizer
 - CENTER_MEMBER_PRIMARY_COLOR : String
 - CENTER_MEMBER_SECONDARY_COLOR : String
 - EMPEROR_MEMBER_PRIMARY_COLOR : String
 - EMPEROR_MEMBER_SECONDARY_COLOR : String
 - NODE_FONTSIZE : String
 - SUBGRAPH_RANK_SEPARATION : int

```
- SUBGRAPH_NODE_SEPARATION : double
- SUBGRAPH_PADDING : double
- MAX_DEPTH : int
- centerMember : Member
+ toGraph(Dynasty dynasty) : MutableGraph
+ toGraph(Member member) : MutableGraph
- linkToRelativesIterative(MutableNode memberNode,
Member member, Relative relative) : void
- linkToRelativesRecursive(ArrayList<String> existingIDs,
MutableGraph familyGraph, Relative relative, Member member,
MutableNode memberNode, int depth) : void
- linkToRelativeNode(MutableNode memberNode, Member memberRelative,
Relative relative) : void
- createFamily(ArrayList<String> existingIDs, Member member,
int depth) : MutableGraph
- createMemberNode(Member member) : MutableNode
- generateBlankGraph(String subGraphName) : MutableGraph
- generateBlankSubGraph(String subGraphName) : MutableGraph
- renderGraph(MutableGraph graph) : Renderer
+ toRenderedGraph(Dynasty dynasty) : Renderer
+ toRenderedGraph(Member member) : Renderer
+ toBufferedImage(Dynasty dynasty) : BufferedImage
+ toBufferedImage(Member member) : BufferedImage
+ toImageFile(Dynasty dynasty, String outputPath) : void
+ toImageFile(Member member, String outputPath) : void
```

- **final class** ScraperResult implements Comparable<ScraperResult>

- + «creates» ScraperResult(Member member, Dynasty dynasty)
 - member : Member
 - dynasty : Dynasty
- + getMember() : Member
- + getDynasty() : Dynasty

- compareRank(ScraperResult other) : int
 - compareRankAndStatus(ScraperResult other) : int
 - + compareTo(ScraperResult other) : int
-
- **enum** Relative
 - + matchRelative(String field) : Relative
-
- **class** Member **implements** JSONable
 - + «create» Member(String name, String wikipediaLink)
 - + «create» Member(String name, String wikipediaLink, boolean isEmperor)
 - ID_counter : int
 - ID : String
 - name : String
 - wikipediaLink : String
 - isEmperor : boolean
 - parents : ArrayList<Member>
 - children : ArrayList<Member>
 - spouses : ArrayList<Member>
 - + getRelatives(Relative relative) : ArrayList<Member>
 - getRelativesIDs(Relative relative) : ArrayList<String>
 - + getAllRelatives() : ArrayList<Member>
 - + addRelative(Member member, Relative relative) : void
 - + toJSONObject() : JSONObject
 - + toString() : String
 - + setID(String ID) : void
 - + setEmperorStatus(boolean isEmperor) : void
 - + setWikipediaLink(String wikipediaLink) : void
 - + getID() : String
 - + getName() : String
 - + getWikipediaLink() : String
 - + isEmperor() : boolean

- **final class ScraperRunner extends Thread**
 - + «create» ScraperRunner(DynastiesScraper scraper)
 - scraper : DynastiesScraper
 - scrapedDynasties : ArrayList<Dynasty>
 - + isScraperActive() : boolean
 - + run() : void
 - + getScraperDynasties() : ArrayList<Dynasty>
- **class WikipediaScraper**
 - + «create» WikipediaScraper()
 - + «create» WikipediaScraper(boolean useSelenium, boolean useHeadless)
 - WIKI_DOMAIN : String
 - ScraperStatusHolder : ScraperStatusHolder
 - driver : WebDriver
 - useSelenium : boolean
 - useHeadless : boolean
 - isScraperActive : boolean
 - debugMode : boolean
 - + start() : void
 - + kill() : void
 - spawnDriver() : void
 - testBrowserInstance(Browser browser) : void
 - selectDriverBasedOnBrowser(Browser browser) : void
 - selectDriverBasedOnOS(SeleniumDriver windowsDriver, SeleniumDriver unix-Driver) : SeleniumDriver
 - + getPageHTML(String pageURL) : String
 - + getPageHTMLwithHTTP(String pageURL) : String
 - + getPageHTMLwithSelenium(String pageURL) : String
 - + getWikipediaSummary(String pageURL) : HashMap<String, HashMap<String, String>>
 - parseRow(HashMap<String, HashMap<String, String> summaryData, Element row) : void
 - parseChunk(HashMap<String, String> tdData, String rowChunk) : void

```
parseParenthesis(String text) : String
- isValidAnchor(Element anchor) : boolean
  setStatus(String status) : void
+ setDebugMode(boolean debugMode) : void
+ setSeleniumMode(boolean useSelenium) : void
+ setHeadlessMode(boolean useHeadless) : void
+ getStatus() : String
+ isActive() : boolean

• final class ScraperStatusHolder
  + «create» ScraperStatusHolder()
  + void updateStatus(String status) : synchronized
  + String getStatus() : synchronized

• class DynastiesScraper extends WikipediaScraper
  - MAIN_EMPEROR_PAGE : String
  - RELATIVE_FIELDS : String[]
  - VALID_NAME_FILTER : String
  - TRAILING_INVALID_CHARS : String
  - TRAILING_SINGLE_CHAR : String
  - INVALID_CHARS : String
  + scrapeDynasties() : ArrayList<Dynasty>
  - getEmperorDynasties() : HashMap<Dynasty, HashMap<String, String>>
  - parseEmperorsTable(Element wikipediaTable) : HashMap<String, String>
  - createDynastyMember(HashMap<String, Member> existingMembers, Dynasty dynasty, String name, String link, boolean isEmperor) : Member
  - createNewMember(HashMap<String, Member> existingMembers, Dynasty dynasty, String name, String link, boolean isEmperor) : Member
  - addRelativesToMember(HashMap<String, Member> existingMembers, HashMap<String, HashMap<String, String>> summary, Dynasty dynasty, Member member, String relativeKey) : void
  - filterName(String name) : String
  - isValidTitle(Element elem) : boolean
  - isValidName(String name) : boolean
```

- isValidLink(String link) : boolean
- isValidMemberData(String name, String link) : boolean
- isValidField(String field) : boolean

1.2.3 Pacchetto utils

- **enum** OperatingSystem
 - + get() : OperatingSystem
- **enum** SeleniumDriver
 - «create» SeleniumDriver(String path)
 - path : String
 - + get(String driversFolder) : String
- **interface** JSONable
 - + toJSONObject() : JSONObject
 - + toJSONFile(String outputPath) : void
- **enum** Browser