FBLA Genie

Final Version

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

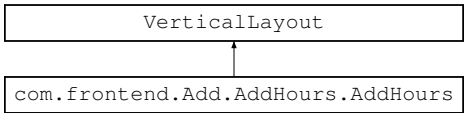
Chapter 3

Class Documentation

3.1 com.frontend.Add.AddHours.AddHours Class Reference

The Class for Adding Hours into a Student.

Inheritance diagram for com.frontend.Add.AddHours.AddHours:



Public Member Functions

- AddHours ()
  The Add Hours View.

3.1.1 Detailed Description

The Class for Adding Hours into a Student.

Definition at line 37 of file AddHours.java.

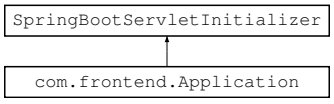
The documentation for this class was generated from the following file:

- AddHours.java

3.2 com.frontend.Application Class Reference

The entry point of the Spring Boot application.

Inheritance diagram for com.frontend.Application:



Static Public Member Functions

- static void main (String[ ] args)

  For Spring-Boot Running.

3.2.1 Detailed Description

The entry point of the Spring Boot application.

Definition at line 12 of file Application.java.

3.2.2 Member Function Documentation

3.2.2.1 main()

```
static void com.frontend.Application.main (
            String[] args )  [static]
```

For Spring-Boot Running.

Parameters

args	standard main method argument

Definition at line 19 of file Application.java.

The documentation for this class was generated from the following file:

- Application.java

3.3 com.frontend.Charts Class Reference

A Class to help make making classes much easier.

Static Public Member Functions

- static Chart solidGauge (double current, double max, int colorIndex)

  Creates a solid gauge chart for the hours a student has compared to a certain category,.
- static Chart monthLineGraph (String title, List< Event > events)

  Generates a Line Graph so that, for long-term reports, hours can be tracked over time to analyze consistent growth.
- static Chart contributionTreeMapChart (List< StudentData > studentDataList, String chartType)

  Generates a TreeMap chart to help divide which students contributed the most in a certain date range.
- static Chart contributionTreeMapChart (String chartType)

Generates a TreeMap chart to help divide which students contributed the most in a certain date range.

- static Chart barGraphCommunityServiceCategoryGoals (List< StudentData > studentDataList)

  Generates a bar graph with student's Community Service Category Goals.
- static Chart barGraphCommunityServiceCategoryAchieved (List< StudentData > studentDataList)

  Generates a Bar Graph for the number of Community Service Award's achieved by students.
- static Chart achievedGoalPieChart (List< StudentData > list, String title)

  A Pie Chart to show the number of student's who achieved their goals vs the number of those who didn't.
- static Chart goalDivisionChart (List< StudentData > list, String title)

  Shows the different goals each student has in a Pie Chart format.
- static Chart currentDivisionChart (List< StudentData > list, String title)

  A Pie Chart to show the division between the currently achieved goals of students.

Static Public Attributes

- static final String WEEK_CHART = "Week"

  A String identifying the option range of "Week".
- static final String MONTH_CHART = "Month"

  A String identifying the option range of "Month".
- static final String YEAR_CHART = "Year"

  A String identifying the option range of "Year".
- static final String ALL_TIME_CHART = "All Time"

  A String identifying the option range of "All Time".

3.3.1 Detailed Description

A Class to help make making classes much easier.

Definition at line 18 of file Charts.java.

3.3.2 Member Function Documentation

3.3.2.1 achievedGoalPieChart()

```
static Chart com.frontend.Charts.achievedGoalPieChart (
            List< StudentData > list,
            String title )  [static]
```

A Pie Chart to show the number of student's who achieved their goals vs the number of those who didn't.

Parameters

list	All of the students
title	The title of the chart

Returns

The Pie Chart of Divisions

Definition at line 383 of file Charts.java.

3.3.2.2 barGraphCommunityServiceCategoryAchieved()

```
static Chart com.frontend.Charts.barGraphCommunityServiceCategoryAchieved (
            List< StudentData > studentDataList )  [static]
```

Generates a Bar Graph for the number of Community Service Award's achieved by students.

In this graph, if a student achieved a higher award, they are ignored in the lower award.

Parameters

studentDataList	The List of Students

Returns

A Bar Graph

Definition at line 316 of file Charts.java.

3.3.2.3 barGraphCommunityServiceCategoryGoals()

```
static Chart com.frontend.Charts.barGraphCommunityServiceCategoryGoals (
            List< StudentData > studentDataList )  [static]
```

Generates a bar graph with student's Community Service Category Goals.

Parameters

studentDataList	The List of Students

Returns

A Bar Graph

Definition at line 267 of file Charts.java.

3.3.2.4 contributionTreeMapChart() [1/2]

```
static Chart com.frontend.Charts.contributionTreeMapChart (
            List< StudentData > studentDataList,
            String chartType )  [static]
```

Generates a TreeMap chart to help divide which students contributed the most in a certain date range.

Parameters

studentDataList	The List of Students to be included in the chart
chartType	The type of chart, as in the date it covers

Returns

A TreeMap Char

Definition at line 167 of file Charts.java.

3.3.2.5 contributionTreeMapChart() [2/2]

```
static Chart com.frontend.Charts.contributionTreeMapChart (
            String chartType )  [static]
```

Generates a TreeMap chart to help divide which students contributed the most in a certain date range.

Automatically gets the Student Hour data based on the Chart Type Provided

Parameters

chartType	The type of chart, as in the date it covers

Returns

A TreeMap Char

Definition at line 207 of file Charts.java.

3.3.2.6 currentDivisionChart()

```
static Chart com.frontend.Charts.currentDivisionChart (
            List< StudentData > list,
            String title )  [static]
```

A Pie Chart to show the division between the currently achieved goals of students.

Parameters

list	The Students
title	The Title of the Chart

Returns

The Pie Chart

Definition at line 476 of file Charts.java.

3.3.2.7 goalDivisionChart()

```
static Chart com.frontend.Charts.goalDivisionChart (
            List< StudentData > list,
            String title )  [static]
```

Shows the different goals each student has in a Pie Chart format.

Parameters

list	The list of students
title	The title of the chart

Returns

The Pie Chart

Definition at line 422 of file Charts.java.

3.3.2.8 monthLineGraph()

```
static Chart com.frontend.Charts.monthLineGraph (
            String title,
            List< Event > events )  [static]
```

Generates a Line Graph so that, for long-term reports, hours can be tracked over time to analyze consistent growth.

Parameters

title	The Chart Title
events	The List of Events the chart should encompass

Returns

A Line Graph

Definition at line 111 of file Charts.java.

3.3.2.9 solidGauge()

```
static Chart com.frontend.Charts.solidGauge (
            double current,
            double max,
            int colorIndex )  [static]
```

Creates a solid gauge chart for the hours a student has compared to a certain category,.

Parameters

current	The Current Number of Hours
max	The Max Possible Number of Hours, or hours to achieve an award
colorIndex	The Color of the Chart

Returns

A Solid Gauge Chart

Definition at line 45 of file Charts.java.

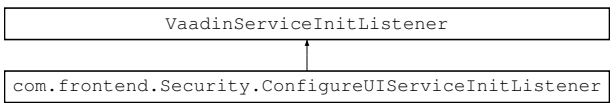
The documentation for this class was generated from the following file:

- Charts.java

3.4 com.frontend.Security.ConfigureUIServiceInitListener Class Reference

A Class which forces redirection to LoginView while someone is not logged in.

Inheritance diagram for com.frontend.Security.ConfigureUIServiceInitListener:



Public Member Functions

- void **serviceInit** (ServiceInitEvent event)

3.4.1 Detailed Description

A Class which forces redirection to LoginView while someone is not logged in.

This keeps anyone from accessing any part of the app without being validated

Definition at line 16 of file ConfigureUIServiceInitListener.java.

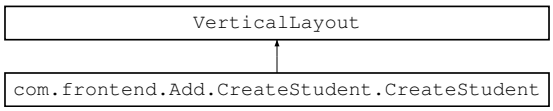
The documentation for this class was generated from the following file:

- ConfigureUIServiceInitListener.java

3.5 com.frontend.Add.CreateStudent.CreateStudent Class Reference

The Class Used to Allow a User to Add a New Student to their List of Students.

Inheritance diagram for com.frontend.Add.CreateStudent.CreateStudent:



Public Member Functions

- CreateStudent ()
  The Overall Path to create a new Student.

3.5.1 Detailed Description

The Class Used to Allow a User to Add a New Student to their List of Students.

Definition at line 34 of file CreateStudent.java.

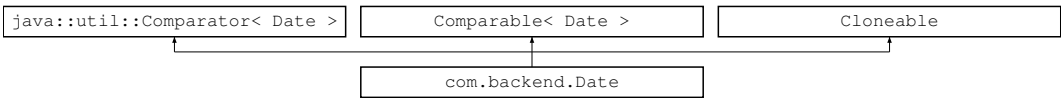
The documentation for this class was generated from the following file:

- CreateStudent.java

3.6 com.backend.Date Class Reference

Creates a date class to store the date.

Inheritance diagram for com.backend.Date:



Public Member Functions

- Date (int year, int month, int day)

  Constructs a date given all its information.
- Date ()

  Constructs a Date of the First Day of the Common Era, to use as a Minimum Date.
- Date (boolean noDate)

  A Date which starts off as "Fake" because it hasn't been given any value.
- boolean fakeDate ()

  Gets the value of the "Fake Date" variable.
- int getYear ()

  Gets the Year.
- void setYear (int year)

  Changes the Year.
- int getMonth ()

  Gets the Month.
- void setMonth (int month)

  Changes the Month.
- int getDay ()

  Gets the Day.
- void setDay (int day)

  Changes the Day.
- void setDate (String date)

  Takes a Date in the String format and converts it into a Date object.
- LocalDate getLocalDate ()

  Returns the LocalDate of the Current Date.
- void setDate (LocalDate date)

  Uses the modern version of Date in java, LocalDate, and turns it into the backend Date.
- String getMonthString ()

  Returns the month value as its respective string without the need to direct to static methods.
- String toString ()

  Prints out the Date as a String in dd, MM, yyyy format.
- String toStringRegular ()

  Uses the standard format of a Date, yyyy-mm-dd, and converts.
- int compareTo (Date o)

  Compares the current date with another to see which one comes first.
- int compare (Date o1, Date o2)

  Compares two dates, o1 and o2, to find which one comes first.
- boolean equals (Date date)

  Compares to see if two dates are the same.
- boolean equalsNoDay (Date date)

  Compares to see if two dates are equal, ignoring the day.
- void incrementDay ()

  Increments the Day by One, Changing the Month when necessary.
- void incrementByMonth ()

  Increments the month by one, changing the year if it hits 13.
- void incrementYear ()

  Increments the Year by 1.

Static Public Member Functions

- static Date optionToDate (String s)

  Takes the options included in Charts.java and returns their related Date values.
- static int getMonth (String month)

  Converts a String of the month to its respective Integer values.
- static String getMonth (int month)

  Converts an Integer of the month to its respective String-based version.

Protected Member Functions

- Date clone ()

  Returns a copy of the Date without changing the original.

3.6.1 Detailed Description

Creates a date class to store the date.

This would allow easy storage and manipulation of the date

Definition at line 13 of file Date.java.

3.6.2 Constructor & Destructor Documentation

3.6.2.1 Date() [1/2]

```
com.backend.Date.Date (
            int year,
            int month,
            int day )
```

Constructs a date given all its information.

Parameters

year	Year
month	Month
day	Day

Definition at line 41 of file Date.java.

3.6.2.2 Date() [2/2]

```
com.backend.Date.Date (
```

```
            boolean noDate )
```

A Date which starts off as "Fake" because it hasn't been given any value.

Parameters

noDate	A boolean telling whether or not the date is Fake

Definition at line 59 of file Date.java.

3.6.3 Member Function Documentation

3.6.3.1 clone()

```
Date com.backend.Date.clone ( )  [protected]
```

Returns a copy of the Date without changing the original.

This overrides the super method of clone to work for Date

Returns

A copy of the Date

Definition at line 194 of file Date.java.

3.6.3.2 compare()

```
int com.backend.Date.compare (
            Date o1,
            Date o2 )
```

Compares two dates, o1 and o2, to find which one comes first.

Parameters

o1	The First Date Being compared
o2	The Second Date Being Compared

Returns

An integer containing the comparison

Definition at line 376 of file Date.java.

3.6.3.3 compareTo()

```
int com.backend.Date.compareTo (
            Date o )
```

Compares the current date with another to see which one comes first.

Parameters

o	The date compare with

Returns

An integer representing the difference in date values

Definition at line 353 of file Date.java.

3.6.3.4 equals()

```
boolean com.backend.Date.equals (
            Date date )
```

Compares to see if two dates are the same.

Parameters

date	the Date compared

Returns

Whether they are equal or not

Definition at line 394 of file Date.java.

3.6.3.5 equalsNoDay()

```
boolean com.backend.Date.equalsNoDay (
            Date date )
```

Compares to see if two dates are equal, ignoring the day.

Parameters

date	The date being compared

Returns

Whether they are equal

Definition at line 404 of file Date.java.

3.6.3.6 fakeDate()

```
boolean com.backend.Date.fakeDate ( )
```

Gets the value of the "Fake Date" variable.

Returns

The "Fake Date" value

Definition at line 208 of file Date.java.

3.6.3.7 getDay()

```
int com.backend.Date.getDay ( )
```

Gets the Day.

Returns

The current Day

Definition at line 253 of file Date.java.

3.6.3.8 getLocalDate()

```
LocalDate com.backend.Date.getLocalDate ( )
```

Returns the LocalDate of the Current Date.

Returns

The LocalDate of the Date

Definition at line 289 of file Date.java.

3.6.3.9 getMonth() [1/3]

```
int com.backend.Date.getMonth ( )
```

Gets the Month.

Returns

The current Month

Definition at line 235 of file Date.java.

3.6.3.10 getMonth() [2/3]

```
static String com.backend.Date.getMonth (
            int month )  [static]
```

Converts an Integer of the month to its respective String-based version.

This method allows the use of String-based months alongside their Integer-based counterparts, allowing easy conversion in one direction.

Parameters

month	The month as an Integer

Returns

The String value of the month

Definition at line 155 of file Date.java.

3.6.3.11 getMonth() [3/3]

```
static int com.backend.Date.getMonth (
            String month )  [static]
```

Converts a String of the month to its respective Integer values.

This method allows the use of String-based months alongside their Integer-based counterparts, allowing easy conversion in one direction.

Parameters

month	The month as a string

Returns

The integer value of the month

Definition at line 100 of file Date.java.

3.6.3.12 getMonthString()

```
String com.backend.Date.getMonthString ( )
```

Returns the month value as its respective string without the need to direct to static methods.

Returns

The String value of the Month

Definition at line 309 of file Date.java.

3.6.3.13 getYear()

```
int com.backend.Date.getYear ( )
```

Gets the Year.

Returns

the current Year

Definition at line 217 of file Date.java.

3.6.3.14 optionToDate()

```
static Date com.backend.Date.optionToDate (
            String s )  [static]
```

Takes the options included in Charts.java and returns their related Date values.

This is used for Dates which are based on the String Values, such as Week, Month, and Year. This typicaly is useful in reports when the user is choosing a date range

Parameters

s	The Option Selected

Returns

A Date with the constraints put on by the Option

Definition at line 72 of file Date.java.

3.6.3.15 setDate() [1/2]

```
void com.backend.Date.setDate (
            LocalDate date )
```

Uses the modern version of Date in java, LocalDate, and turns it into the backend Date.

Parameters

date	The LocalDate being converted.

Definition at line 298 of file Date.java.

3.6.3.16 setDate() [2/2]

```
void com.backend.Date.setDate (
            String date )
```

Takes a Date in the String format and converts it into a Date object.

Parameters

date	the Date as a String @apiNote For this method to work, the date has to be in the format of yyyy-mm-dd

Definition at line 272 of file Date.java.

3.6.3.17 setDay()

```
void com.backend.Date.setDay (
            int day )
```

Changes the Day.

Parameters

day	The new Day

Definition at line 262 of file Date.java.

3.6.3.18 setMonth()

```
void com.backend.Date.setMonth (
            int month )
```

Changes the Month.

Parameters

month	The new Month

Definition at line 244 of file Date.java.

3.6.3.19 setYear()

```
void com.backend.Date.setYear (
            int year )
```

Changes the Year.

Parameters

year	The New Year

Definition at line 226 of file Date.java.

3.6.3.20 toString()

```
String com.backend.Date.toString ( )
```

Prints out the Date as a String in dd, MM, yyyy format.

Returns

The Entire Date as a String

Definition at line 319 of file Date.java.

3.6.3.21 toStringRegular()

```
String com.backend.Date.toStringRegular ( )
```

Uses the standard format of a Date, yyyy-mm-dd, and converts.

Returns

A String with the Date in the Standard Format

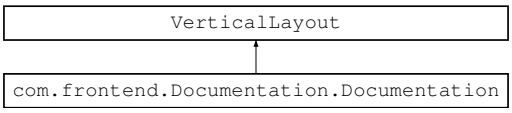
Definition at line 328 of file Date.java.

The documentation for this class was generated from the following file:

- Date.java

3.7 com.frontend.Documentation.Documentation Class Reference

Inheritance diagram for com.frontend.Documentation.Documentation:



3.7.1 Detailed Description

Definition at line 12 of file Documentation.java.

The documentation for this class was generated from the following file:

- Documentation.java

3.8 com.backend.Event Class Reference

A Class to Store Events of Students.

Inheritance diagram for com.backend.Event:

Public Member Functions

- Event (String firstName, String lastName, int studentID, String eventName, double hours, int year, int month, int day)

  Event Constructor with Each Value Individually.
- Event (Student student, String eventName, double hours, Date date)

  Event Constructor with Each Value Individually.
- Event ()

  Creates an empty event, only initializing the date to avoid NullPointerExceptions.
- String getEventName ()

  Gets the name of the Event.
- void setEventName (String eventName)

  Sets the name of the event, changing in the Database if necessary.
- double getHours ()

  Gets the length of the Event.
- void setHours (double hours)

  Changes the length of the Event, updating database if necessary.
- void setHours (String hours)

  Changes the length of the Event given a String, changing backend if necessary.
- int getYear ()

  Gets the Year.
- void setYear (int year)

  Changes the Year.
- int getMonth ()

  Gets the Month.
- void setMonth (int month)

  Changes the Month.
- int getDay ()

  Gets the Day.
- void setDay (int day)

  Changes the Day.
- void setDate (int year, int month, int day)

  Sets the date, changing the database if necessary.
- Date getDate ()

  Gets the Date.
- void setDate (String date)

  Sets the Date using a String of the new Date, depending on the format of the String.
- void setDate (LocalDate localDate)

  Sets the Date of the Event based on the LocalDate, changing the Database if necessary.
- void setDate (Date date)

  Sets the date given another Date.
- void **setDateNoUpdate** (LocalDate localDate)
- LocalDate getLocalDate ()

  Gets the LocalDate (the new version of java.util.Date) of the current Date.
- void addEvent ()

  Adds the Current Event to the database, taking all changes made.
- void delete ()

  This deletes the current event from the database, removing all traces.
- String toString ()

  Formats the Event in an easy-to-read manner.
- void updateEvent (Event oldEvent, Event newEvent)

Updates the event with all the new values in the backend database.

- int compareTo (Event o)

  Compares the dates of two events.

- int compare (Event o1, Event o2)

  Compares the dates of two events.

Static Public Member Functions

- static String[ ] getMonthsWithYear (Date startDateIn, Date endDateIn)

  Gets an Array of all the Months in the range between two months, including the start and the end.

- static int monthsInRange (Date startDate, Date endDate)

  Gets the number of months in a range between two months.

- static double getTotalHours (List< Event > eventList)

  Gets the total hours in a list of Events, especially useful when calculating the hours a student achieved in a certain range.

Additional Inherited Members

3.8.1 Detailed Description

A Class to Store Events of Students.

Definition at line 13 of file Event.java.

3.8.2 Constructor & Destructor Documentation

3.8.2.1 Event() [1/2]

```
com.backend.Event.Event (
            String firstName,
            String lastName,
            int studentID,
            String eventName,
            double hours,
            int year,
            int month,
            int day )
```

Event Constructor with Each Value Individually.

Parameters

firstName	The First Name of the Student
lastName	The Last Name of the Student
studentID	The Student ID of the Student
eventName	The Name of the Event
hours	The Length of the Event
year	The Year of the Event
month	The Month of the Event
day	The Day of the Event

Definition at line 41 of file Event.java.

3.8.2.2 Event() [2/2]

```
com.backend.Event.Event (
            Student student,
            String eventName,
            double hours,
            Date date )
```

Event Constructor with Each Value Individually.

Parameters

student	The Student doing the Event
eventName	The Name of the Event
hours	The Length of the Event
date	The Date of the Event

Definition at line 57 of file Event.java.

3.8.3 Member Function Documentation

3.8.3.1 compare()

```
int com.backend.Event.compare (
            Event o1,
            Event o2 )
```

Compares the dates of two events.

Parameters

o1	The First Event
o2	The Second Event

Returns

An integer containing the difference

Definition at line 386 of file Event.java.

3.8.3.2 compareTo()

```
int com.backend.Event.compareTo (
            Event o )
```

Compares the dates of two events.

Parameters

o	The Second Event

Returns

An integer representing the difference

Definition at line 374 of file Event.java.

3.8.3.3 getDate()

```
Date com.backend.Event.getDate ( )
```

Gets the Date.

Returns

The Date

Definition at line 254 of file Event.java.

3.8.3.4 getDay()

```
int com.backend.Event.getDay ( )
```

Gets the Day.

Returns

The current Day

Definition at line 222 of file Event.java.

3.8.3.5 getEventName()

```
String com.backend.Event.getEventName ( )
```

Gets the name of the Event.

Returns

The Name of the Event

Definition at line 135 of file Event.java.

3.8.3.6 getHours()

```
double com.backend.Event.getHours ( )
```

Gets the length of the Event.

Returns

The Length of the Event

Definition at line 156 of file Event.java.

3.8.3.7 getLocalDate()

```
LocalDate com.backend.Event.getLocalDate ( )
```

Gets the LocalDate (the new version of java.util.Date) of the current Date.

Returns

the LocalDate

Definition at line 322 of file Event.java.

3.8.3.8 getMonth()

```
int com.backend.Event.getMonth ( )
```

Gets the Month.

Returns

The current Month

Definition at line 204 of file Event.java.

3.8.3.9 getMonthsWithYear()

```
static String [] com.backend.Event.getMonthsWithYear (
            Date startDateIn,
            Date endDateIn )  [static]
```

Gets an Array of all the Months in the range between two months, including the start and the end.

This is used for labeling graphs, particularly the Line Graph in the Individual Student Reports.

Parameters

startDateIn	The Start Date in the Range
endDateIn	The End Date in the Range

Returns

An Array of Strings containing all Labels of the dates in the range.

Definition at line 80 of file Event.java.

3.8.3.10 getTotalHours()

```
static double com.backend.Event.getTotalHours (
            List< Event > eventList )  [static]
```

Gets the total hours in a list of Events, especially useful when calculating the hours a student achieved in a certain range.

Parameters

eventList	The List of Events

Returns

the total time spent volunteering

Definition at line 121 of file Event.java.

3.8.3.11 getYear()

```
int com.backend.Event.getYear ( )
```

Gets the Year.

Returns

the current Year

Definition at line 186 of file Event.java.

3.8.3.12 monthsInRange()

```
static int com.backend.Event.monthsInRange (
            Date startDate,
            Date endDate )  [static]
```

Gets the number of months in a range between two months.

Parameters

startDate	The start date of the Range
endDate	The end date of the range

Returns

the range

Definition at line 110 of file Event.java.

3.8.3.13 setDate() [1/4]

```
void com.backend.Event.setDate (
            Date date )
```

Sets the date given another Date.

Parameters

date	The new Date

Definition at line 304 of file Event.java.

3.8.3.14 setDate() [2/4]

```
void com.backend.Event.setDate (
            int year,
            int month,
            int day )
```

Sets the date, changing the database if necessary.

Parameters

year	The New Year
month	The New Month
day	The New Day

Definition at line 242 of file Event.java.

3.8.3.15 setDate() [3/4]

```
void com.backend.Event.setDate (
            LocalDate localDate )
```

Sets the Date of the Event based on the LocalDate, changing the Database if necessary.

Parameters

localDate	The New Date

Definition at line 289 of file Event.java.

3.8.3.16 setDate() [4/4]

```
void com.backend.Event.setDate (
            String date )
```

Sets the Date using a String of the new Date, depending on the format of the String.

Updates Database if necessary

Parameters

date	The new Date as a String

Definition at line 264 of file Event.java.

3.8.3.17 setDay()

```
void com.backend.Event.setDay (
            int day )
```

Changes the Day.

Parameters

day	The new Day

Definition at line 231 of file Event.java.

3.8.3.18 setEventName()

```
void com.backend.Event.setEventName (
            String eventName )
```

Sets the name of the event, changing in the Database if necessary.

Parameters

eventName	The new Name of the Event

Definition at line 144 of file Event.java.

3.8.3.19 setHours() [1/2]

```
void com.backend.Event.setHours (
            double hours )
```

Changes the length of the Event, updating database if necessary.

Parameters

hours	The new Length of the Event

Definition at line 165 of file Event.java.

3.8.3.20 setHours() [2/2]

```
void com.backend.Event.setHours (
            String hours )
```

Changes the length of the Event given a String, changing backend if necessary.

Parameters

hours	The new Length (as a String)

Definition at line 177 of file Event.java.

3.8.3.21 setMonth()

```
void com.backend.Event.setMonth (
            int month )
```

Changes the Month.

Parameters

month	The new Month

Definition at line 213 of file Event.java.

3.8.3.22 setYear()

```
void com.backend.Event.setYear (
            int year )
```

Changes the Year.

Parameters

year	The New Year

Definition at line 195 of file Event.java.

3.8.3.23 toString()

```
String com.backend.Event.toString ( )
```

Formats the Event in an easy-to-read manner.

Returns

A String with the event Information

Reimplemented from com.backend.Student.

Definition at line 353 of file Event.java.

3.8.3.24 updateEvent()

```
void com.backend.Event.updateEvent (
            Event oldEvent,
            Event newEvent )
```

Updates the event with all the new values in the backend database.

Parameters

oldEvent	the Old Event
newEvent	the New Event

Definition at line 363 of file Event.java.

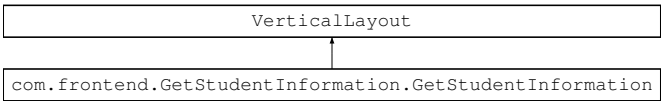
The documentation for this class was generated from the following file:

- Event.java

3.9 com.frontend.GetStudentInformation.GetStudentInformation Class Reference

Gets All Student's General Information and Allows Editing.

Inheritance diagram for com.frontend.GetStudentInformation.GetStudentInformation:



Public Member Functions

- GetStudentInformation ()
  The Constructor, just runs the Main Table Method.
- void mainTable ()
  Creates the main table, which shows student data and allows editing of it.
- Button deleteButton (Student student)
  Creates the delete button, which deletes a student if clicked.
- Button expandButton (StudentData student)
  Creates the expand button, which reveals more specific student information, namely the events.

3.9.1 Detailed Description

Gets All Student's General Information and Allows Editing.

Also Allows viewing more specific events.

Definition at line 34 of file GetStudentInformation.java.

3.9.2 Member Function Documentation

3.9.2.1 deleteButton()

```
Button com.frontend.GetStudentInformation.GetStudentInformation.deleteButton (
            Student student )
```

Creates the delete button, which deletes a student if clicked.

Parameters

student	The Student to create a delete button for

Returns

The Delete Button

Definition at line 82 of file GetStudentInformation.java.

3.9.2.2 expandButton()

```
Button com.frontend.GetStudentInformation.GetStudentInformation.expandButton (
            StudentData student )
```

Creates the expand button, which reveals more specific student information, namely the events.

This method creates a dialog box (as a notification) which has all of a student's events and data, allowing for a more in-depth review of a student

Parameters

student	The Student to Expand

Returns

The Expand Button

Definition at line 118 of file GetStudentInformation.java.

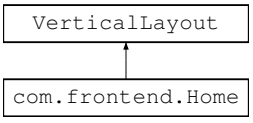
The documentation for this class was generated from the following file:

- GetStudentInformation.java

3.10 com.frontend.Home Class Reference

Home is the home view for the App.

Inheritance diagram for com.frontend.Home:



Public Member Functions

- Home ()

  Creates the Home Screen.

3.10.1 Detailed Description

Home is the home view for the App.

This view has a brief introduction to the project and allows navigation to every other part of the app.

Author

Shourya Bansal

Definition at line 31 of file Home.java.

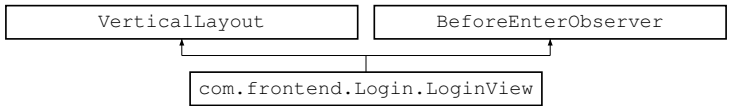
The documentation for this class was generated from the following file:

- Home.java

3.11 com.frontend.Login.LoginView Class Reference

A Class that allows logging in to the system.

Inheritance diagram for com.frontend.Login.LoginView:



Public Member Functions

- LoginView ()

  Sets up the Login View and adds it to the its page.
- void beforeEnter (BeforeEnterEvent beforeEnterEvent)

  Turns on security, preventing access to the rest of the app before login is complete.

3.11.1 Detailed Description

A Class that allows logging in to the system.

Huge potential for security, currently not using its full capabilities for demonstration purposes.

Definition at line 20 of file LoginView.java.

3.11.2 Member Function Documentation

3.11.2.1 beforeEnter()

```
void com.frontend.Login.LoginView.beforeEnter (
            BeforeEnterEvent beforeEnterEvent )
```

Turns on security, preventing access to the rest of the app before login is complete.

Parameters

beforeEnterEvent	A lambda event that is used by the login view to validate if the app should be open or remain closed

Definition at line 52 of file LoginView.java.

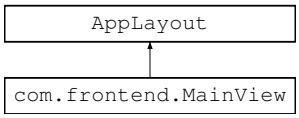
The documentation for this class was generated from the following file:

- LoginView.java

3.12 com.frontend.MainView Class Reference

MainView is the main view of the entire app.

Inheritance diagram for com.frontend.MainView:



Public Member Functions

- MainView ()

  Creates the Main View that formats the rest of the App.

Static Public Member Functions

- static Tabs getTabs ()

  Generates the tabs for the Navbar.

Static Public Attributes

- static final Tab **HOME_TAB** = createTab(VaadinIcon.HOME, "Home", Home.class)
- static final Tab **ADD_STUDENT_TAB** = createTab(VaadinIcon.FILE_ADD, "Add a Student", Create↩ Student.class)
- static final Tab **ADD_HOURS_TAB** = createTab(VaadinIcon.EDIT, "Add Hours to Student", AddHours.class)
- static final Tab **VIEW_EDIT_TAB** = createTab(VaadinIcon.EYE, "View and Edit Students", GetStudent↩ Information.class)
- static final Tab **REPORT_TAB** = createTab(VaadinIcon.RECORDS, "Generate Reports", Reports.class)
- static final Tab **DOC_TAB** = createTab(VaadinIcon.QUESTION, "Documentation and FAQs", Documentation.↩ class)
- static final Tabs **tabs** = getTabs()

3.12.1 Detailed Description

MainView is the main view of the entire app.

Most pages use MainView as the base to format themselves, keeping everything uniform

Author

Shourya Bansal

Definition at line 49 of file MainView.java.

3.12.2 Member Function Documentation

3.12.2.1 getTabs()

```
static Tabs com.frontend.MainView.getTabs ( )  [static]
```

Generates the tabs for the Navbar.

Returns

The Tabs for the navBar

Definition at line 111 of file MainView.java.

The documentation for this class was generated from the following file:

- MainView.java

3.13 com.backend.MySQLMethods Class Reference

This Class will hold all the methods to allow manipulation of the Data in the Database.

Static Public Member Functions

- static void createDatabase ()

  This method runs at the start of any Query.
- static void createTable ()

  This method creates the main table which would store student information and current hours.
- static void createPasswordTable ()

  This method creates the password Table which will be implemented in the future to allow multiple users to access different layers of security.
- static void createStudentTable (String firstName, String lastName, int studentID)

  This method creates a specific student table.
- static void createStudent (String firstName, String lastName, int studentID, short grade, String community↩ ServiceCategory, String email, short yearsDone)

  This method makes it very easy to create a student in the main tracker table.
- static void addStudentHours (Student student, String eventName, double hours, int year, int month, int day) throws Exception

  This adds events and hours into a students unique table.
- static void addUserPass (String username, String hashedPassword) throws Exception

  This stores the password in a database.
- static String selectPass (String username)

  Gets the hashed password given a username.
- static int selectTrackerInt (String firstName, String lastName, int studentID, String data)

  This allows someone to get specific integer-type data from the Main Table.
- static String selectTrackerString (String firstName, String lastName, int studentID, String data)

  This allows someone to get Specific String-type data from the Main table.
- static double selectTrackerDouble (String firstName, String lastName, int studentID, String data)

  This allows someone to get specific Double-Type data from the Main Table.
- static short selectTrackerShort (String firstName, String lastName, int studentID, String data)

  This allows someone to get specific short-type data from the Main Table.
- static StudentData selectTrackerAsStudent (Student student)

  This method gets the data of a student with the information listed, but returns it all in its special class as a StudentData object.
- static List< Student > getStudents ()

  Generates a list of all students being tracked.
- static List< StudentData > getStudentData ()

  Generates a List of All Students being tracked, as well as their hours and other information.
- static List< Event > selectStudentEventsAsEvent (String firstName, String lastName, int studentID)

  This allows access to all of a student's events.
- static List< Event > selectStudentEventsAsEvent (Student student)

  This allows access to all of a student's events.
- static List< Event > selectStudentEventsInRange (Student student, Date startDate)

  This is mainly used in reports, where we want to get dates in a certain range.
- static List< StudentData > getStudentData (String range)

  A List of All Students with their data, but limiting hours to only those earned in a specified range.
- static double getHoursWeek (Student student)

  Gets the hours a student earned in the past week.
- static double getHoursMonth (Student student)

  Gets the number of hours a student earned in a Month.
- static double getHoursYear (Student student)

  Gets the hours a student earned in a year.
- static double getHoursAll (Student student)

  Gets the the total hours a student has earned their entire time in FBLA.

- static void updateTracker (String firstName, String lastName, int studentID, String dataType, String newData) throws Exception

  This updates a value in the Main Table.
- static void updateFirstName (String firstName, String lastName, int studentID, String newFirstName)

  Updates the first name of a Student in case that needs to be changed.
- static void updateLastName (String firstName, String lastName, int studentID, String newLastName)

  Updates the last Name of a Student in case that needs to be done.
- static void updateStudentID (String firstName, String lastName, int studentID, int newStudentID)

  Updates the Student ID of a Student just in case that changes.
- static void updateTracker (Student initialStudent, StudentData newData) throws Exception

  Updates the main, general tracking table.
- static void updateEvent (Student student, Event oldEvent, Event newEvent)

  Updates a student's event.
- static void delete (Student student)

  This method deletes a student and his or her respective data table.
- static void delete (Event event)

  Deletes an Event.
- static String makeName (String firstName, String lastName, int studentID)

  This method would be used to make student table names in MySQL (firstName_lastName_studentID)
- static String makeName (Student student)

  Formats the name of a student.
- static int numberOfRows (String tableName) throws Exception

  Returns the number of rows in a table.
- static void updateToCurrentDate (String firstName, String lastName, int studentID)

  Updates the date in the tracker to the current date for lastEdited.
- static double round (double input)

  Rounds the double to the nearest hundredth.
- static void setUp ()

  Runs the necessary methods to set up the tables in case this is the first time the app is running.

Static Public Attributes

- static final String pwTableName = "passwords"

  The Name of the Passwords Table.
- static final String DATABASE_NAME = "student_data"

  The Name of the Database.

3.13.1 Detailed Description

This Class will hold all the methods to allow manipulation of the Data in the Database.

This uses MySQL to actively store and edit data.

Author

Shourya Bansal

Definition at line 16 of file MySQLMethods.java.

3.13.2 Member Function Documentation

3.13.2.1 addStudentHours()

```
static void com.backend.MySQLMethods.addStudentHours (
            Student student,
            String eventName,
            double hours,
            int year,
            int month,
            int day ) throws Exception  [static]
```

This adds events and hours into a students unique table.

At the same time, this updates the hours in the main table

Parameters

student	The student getting hours
eventName	The Name of the Event Completed
hours	The Length of the Event
year	The Year the Event Was Done
month	The Month of the Event
day	The Day of the Event

Exceptions

Exception	This is throws in case the Database is not found

Definition at line 258 of file MySQLMethods.java.

3.13.2.2 addUserPass()

```
static void com.backend.MySQLMethods.addUserPass (
            String username,
            String hashedPassword ) throws Exception  [static]
```

This stores the password in a database.

However, to secure them, they use a hashing function (explained in the documentation) which securely converts the password into an impenetrable String. It is a one way function, thus stopping anyone from figuring out what the password is.

Parameters

username	the Username of the user being added
hashedPassword	the password after hash encryption

Exceptions

Exception	This is throws in case the Database is not found

Definition at line 306 of file MySQLMethods.java.

3.13.2.3 createDatabase()

```
static void com.backend.MySQLMethods.createDatabase ( )  [static]
```

This method runs at the start of any Query.

It checks if the database has already been created and, if it hasn't, creates it.

Definition at line 64 of file MySQLMethods.java.

3.13.2.4 createStudent()

```
static void com.backend.MySQLMethods.createStudent (
            String firstName,
            String lastName,
            int studentID,
            short grade,
            String communityServiceCategory,
            String email,
            short yearsDone )  [static]
```

This method makes it very easy to create a student in the main tracker table.

Parameters

firstName	The First Name of the Student
lastName	The Last Name of the Student
studentID	The Student's Student ID Number
grade	The Student's Grade Number
communityServiceCategory	The Category of Award Aimed for by the Student
email	The Student's Email Address
yearsDone	The number of years of FBLA Completed

Definition at line 208 of file MySQLMethods.java.

3.13.2.5 createStudentTable()

```
static void com.backend.MySQLMethods.createStudentTable (
            String firstName,
```

```
            String lastName,
            int studentID )  [static]
```

This method creates a specific student table.

This would allow more specific storage of data, such as data of specific events and such and make it much easier to analyze a students data.

Parameters

firstName	This is the student's First Name
lastName	This is the student's Last Name
studentID	The Student's Student ID Number

Definition at line 166 of file MySQLMethods.java.

3.13.2.6 delete() [1/2]

```
static void com.backend.MySQLMethods.delete (
            Event event )  [static]
```

Deletes an Event.

Parameters

event	the Event

Definition at line 1208 of file MySQLMethods.java.

3.13.2.7 delete() [2/2]

```
static void com.backend.MySQLMethods.delete (
            Student student )  [static]
```

This method deletes a student and his or her respective data table.

Parameters

student	The Deleted Student

Definition at line 1175 of file MySQLMethods.java.

3.13.2.8 getHoursAll()

```
static double com.backend.MySQLMethods.getHoursAll (
            Student student ) [static]
```

Gets the the total hours a student has earned their entire time in FBLA.

Parameters

student	The Student being tracked

Returns

The total hours a student earned

Definition at line 899 of file MySQLMethods.java.

3.13.2.9 getHoursMonth()

```
static double com.backend.MySQLMethods.getHoursMonth (
            Student student ) [static]
```

Gets the number of hours a student earned in a Month.

Parameters

student	The Student being tracked

Returns

The hours the student earned in a month

Definition at line 835 of file MySQLMethods.java.

3.13.2.10 getHoursWeek()

```
static double com.backend.MySQLMethods.getHoursWeek (
            Student student ) [static]
```

Gets the hours a student earned in the past week.

Parameters

student	The Student being found

Returns

The hours the student earned in a week

Definition at line 803 of file MySQLMethods.java.

3.13.2.11 getHoursYear()

```
static double com.backend.MySQLMethods.getHoursYear (
            Student student )  [static]
```

Gets the hours a student earned in a year.

Parameters

student	The student being tracked

Returns

The hours earned in a year

Definition at line 867 of file MySQLMethods.java.

3.13.2.12 getStudentData() [1/2]

```
static List<StudentData> com.backend.MySQLMethods.getStudentData ( )  [static]
```

Generates a List of All Students being tracked, as well as their hours and other information.

Returns

A List of StudentData Objects

Definition at line 632 of file MySQLMethods.java.

3.13.2.13 getStudentData() [2/2]

```
static List<StudentData> com.backend.MySQLMethods.getStudentData (
            String range )  [static]
```

A List of All Students with their data, but limiting hours to only those earned in a specified range.

Parameters

range	The range of time from where hours should be received

Returns

A list of StudentData objects

Definition at line 773 of file MySQLMethods.java.

3.13.2.14 getStudents()

```
static List<Student> com.backend.MySQLMethods.getStudents ( )  [static]
```

Generates a list of all students being tracked.

Returns

a List of Students

Definition at line 593 of file MySQLMethods.java.

3.13.2.15 makeName() [1/2]

```
static String com.backend.MySQLMethods.makeName (
            String firstName,
            String lastName,
            int studentID )  [static]
```

This method would be used to make student table names in MySQL (firstName_lastName_studentID)

Parameters

firstName	First Name
lastName	Last Name
studentID	Student ID

Returns

formatted Name

Definition at line 1250 of file MySQLMethods.java.

3.13.2.16 makeName() [2/2]

```
static String com.backend.MySQLMethods.makeName (
            Student student )  [static]
```

Formats the name of a student.

Parameters

student	The Student whose name is being formatted

Returns

the name in the format of firstName_lastName_studentID

Definition at line 1260 of file MySQLMethods.java.

3.13.2.17 numberOfRows()

```
static int com.backend.MySQLMethods.numberOfRows (
            String tableName ) throws Exception  [static]
```

Returns the number of rows in a table.

This is extremely useful in knowing the number of times to loop a certain event.

Parameters

tableName	the name of the table being counted

Returns

the number of rows

Exceptions

Exception	for SQL Errors

Definition at line 1285 of file MySQLMethods.java.

3.13.2.18 round()

```
static double com.backend.MySQLMethods.round (
            double input )  [static]
```

Rounds the double to the nearest hundredth.

Parameters

input	the double being rounded

Returns

the rounded double

Definition at line 1332 of file MySQLMethods.java.

3.13.2.19 selectPass()

```
static String com.backend.MySQLMethods.selectPass (
            String username )  [static]
```

Gets the hashed password given a username.

Parameters

username	the Username for which a password is being found

Returns

the hashed password

Definition at line 333 of file MySQLMethods.java.

3.13.2.20 selectStudentEventsAsEvent() [1/2]

```
static List<Event> com.backend.MySQLMethods.selectStudentEventsAsEvent (
            String firstName,
            String lastName,
            int studentID )  [static]
```

This allows access to all of a student's events.

Parameters

firstName	the student's first name
lastName	the student's last name
studentID	The Student's Student ID Number

Returns

an array of Strings containing all of the Events and their data

Definition at line 673 of file MySQLMethods.java.

3.13.2.21 selectStudentEventsAsEvent() [2/2]

```
static List<Event> com.backend.MySQLMethods.selectStudentEventsAsEvent (
            Student student )  [static]
```

This allows access to all of a student's events.

Parameters

student	the selected student

Returns

an array of Strings containing all of the Events and their data

Definition at line 720 of file MySQLMethods.java.

3.13.2.22 selectStudentEventsInRange()

```
static List<Event> com.backend.MySQLMethods.selectStudentEventsInRange (
            Student student,
            Date startDate )  [static]
```

This is mainly used in reports, where we want to get dates in a certain range.

Thus, this method gets a start date and adds a limitation on what to select from the student table.

Parameters

student	The Student whose events we need
startDate	The Start Date of the Events

Returns

A List containing the events being used

Definition at line 732 of file MySQLMethods.java.

3.13.2.23 selectTrackerAsStudent()

```
static StudentData com.backend.MySQLMethods.selectTrackerAsStudent (
            Student student )  [static]
```

This method gets the data of a student with the information listed, but returns it all in its special class as a StudentData object.

Parameters

student	The Student who is being queried

Returns

A StudentData Object with all of the Student's Information

Definition at line 545 of file MySQLMethods.java.

3.13.2.24 selectTrackerDouble()

```
static double com.backend.MySQLMethods.selectTrackerDouble (
            String firstName,
            String lastName,
            int studentID,
            String data )  [static]
```

This allows someone to get specific Double-Type data from the Main Table.

Parameters

firstName	The Student's First Name
lastName	The Student's Last name
studentID	The Student's Student ID Number
data	The data field being accessed

Returns

A double containing the data

Definition at line 465 of file MySQLMethods.java.

3.13.2.25 selectTrackerInt()

```
static int com.backend.MySQLMethods.selectTrackerInt (
            String firstName,
```

```
String lastName,
int studentID,
String data )  [static]
```

This allows someone to get specific integer-type data from the Main Table.

Parameters

firstName	The Student's first name
lastName	the student's last name
studentID	The Student's Student ID Number
data	the data field being accessed

Returns

an integer containing the data

Definition at line 378 of file MySQLMethods.java.

3.13.2.26 selectTrackerShort()

```
static short com.backend.MySQLMethods.selectTrackerShort (
            String firstName,
            String lastName,
            int studentID,
            String data )  [static]
```

This allows someone to get specific short-type data from the Main Table.

Parameters

firstName	the student's first name
lastName	the student's last name
studentID	The Student's Student ID Number
data	the data field being accessed

Returns

a short containing the data

Definition at line 506 of file MySQLMethods.java.

3.13.2.27 selectTrackerString()

```
static String com.backend.MySQLMethods.selectTrackerString (
            String firstName,
            String lastName,
            int studentID,
            String data )  [static]
```

This allows someone to get Specific String-type data from the Main table.

Parameters

firstName	The student's First Name
lastName	The student's Last Name
studentID	The Student's Student ID Number
data	The data field being accessed

Returns

the String Type data

Definition at line 419 of file MySQLMethods.java.

3.13.2.28 updateEvent()

```
static void com.backend.MySQLMethods.updateEvent (
            Student student,
            Event oldEvent,
            Event newEvent )  [static]
```

Updates a student's event.

Parameters

student	The student being updated
oldEvent	The old event information
newEvent	The new event details

Definition at line 1132 of file MySQLMethods.java.

3.13.2.29 updateFirstName()

```
static void com.backend.MySQLMethods.updateFirstName (
            String firstName,
            String lastName,
            int studentID,
            String newFirstName )  [static]
```

Updates the first name of a Student in case that needs to be changed.

Parameters

firstName	The Old First Name of the Student
lastName	The Student's last Name
studentID	The Student's Student ID Number
newFirstName	The Student's new First Name

Definition at line 981 of file MySQLMethods.java.

3.13.2.30 updateLastName()

```
static void com.backend.MySQLMethods.updateLastName (
            String firstName,
            String lastName,
            int studentID,
            String newLastName )  [static]
```

Updates the last Name of a Student in case that needs to be done.

Parameters

firstName	The First name of the Student
lastName	The Old Last name of the Student
studentID	The Student's Student ID Number
newLastName	The New Last name of the Student

Definition at line 1017 of file MySQLMethods.java.

3.13.2.31 updateStudentID()

```
static void com.backend.MySQLMethods.updateStudentID (
            String firstName,
            String lastName,
            int studentID,
            int newStudentID )  [static]
```

Updates the Student ID of a Student just in case that changes.

Parameters

firstName	The Student's First Name
lastName	The Student's Last Name
studentID	The Student's Old Student ID
newStudentID	The Student's New Student ID

Definition at line 1054 of file MySQLMethods.java.

3.13.2.32 updateToCurrentDate()

```
static void com.backend.MySQLMethods.updateToCurrentDate (
            String firstName,
```

```
            String lastName,
            int studentID )  [static]
```

Updates the date in the tracker to the current date for lastEdited.

Parameters

firstName	The First Name of the Student to know who to update
lastName	The Last Name of the Student to Update
studentID	The Student's Student ID Number

Definition at line 1317 of file MySQLMethods.java.

3.13.2.33 updateTracker() [1/2]

```
static void com.backend.MySQLMethods.updateTracker (
            String firstName,
            String lastName,
            int studentID,
            String dataType,
            String newData ) throws Exception  [static]
```

This updates a value in the Main Table.

Parameters

firstName	the student's first name
lastName	the student's last name
studentID	The Student's Student ID Number
dataType	the data field being changed
newData	a new data value (in string form) for the location

Exceptions

Exception	for SQL Errors

Definition at line 934 of file MySQLMethods.java.

3.13.2.34 updateTracker() [2/2]

```
static void com.backend.MySQLMethods.updateTracker (
            Student initialStudent,
            StudentData newData ) throws Exception  [static]
```

Updates the main, general tracking table.

There can be no changes in First Name, Last Name, or Student ID in these two pieces of data for the change to work successfully

Parameters

initialStudent	The Student Being updated
newData	The Data being inserted into the student

Exceptions

Exception	For MySQL Exceptions

Definition at line 1093 of file MySQLMethods.java.

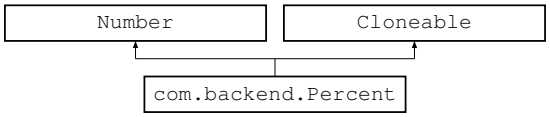
The documentation for this class was generated from the following file:

- MySQLMethods.java

3.14 com.backend.Percent Class Reference

A Class to Use for Percent Data Types.

Inheritance diagram for com.backend.Percent:



Public Member Functions

- Percent (int current, int max)

  A Constructor that takes in integers and generates a percentage based on them.
- Percent (double current, double max)

  A Constructor that takes in doubles and generates a percentage based on them.
- double getPercent ()

  Returns the Percent as a Double.
- String toString ()

  Allows Printing as a String.
- int intValue ()

  Gets the integer value of the percentage.
- long longValue ()

  Gets the long value of the percentage.
- float floatValue ()

  Gets the float value of the percentage.
- double doubleValue ()

  Just returns the double value of the percentage.

Static Public Member Functions

- static double round (double toBeRounded)

  Rounds to the nearest integer, as none of the used percentages require much precision.

Protected Member Functions

- Percent **clone** () throws CloneNotSupportedException

3.14.1 Detailed Description

A Class to Use for Percent Data Types.

Definition at line 8 of file Percent.java.

3.14.2 Constructor & Destructor Documentation

3.14.2.1 Percent() [1/2]

```
com.backend.Percent.Percent (
            int current,
            int max )
```

A Constructor that takes in integers and generates a percentage based on them.

It calculates percentage in the form current / total

Parameters

current	The Current Value
max	The Total Value

Definition at line 23 of file Percent.java.

3.14.2.2 Percent() [2/2]

```
com.backend.Percent.Percent (
            double current,
            double max )
```

A Constructor that takes in doubles and generates a percentage based on them.

It calculates percentage in the form current / total

Parameters

current	The Current Value
max	The Total Value

Definition at line 36 of file Percent.java.

3.14.3 Member Function Documentation

3.14.3.1 doubleValue()

```
double com.backend.Percent.doubleValue ( )
```

Just returns the double value of the percentage.

Returns

the double value of the percentage

Definition at line 106 of file Percent.java.

3.14.3.2 floatValue()

```
float com.backend.Percent.floatValue ( )
```

Gets the float value of the percentage.

Returns

the float value of the percentage

Definition at line 96 of file Percent.java.

3.14.3.3 getPercent()

```
double com.backend.Percent.getPercent ( )
```

Returns the Percent as a Double.

Returns

the Percent as a Double

Definition at line 56 of file Percent.java.

3.14.3.4 intValue()

```
int com.backend.Percent.intValue ( )
```

Gets the integer value of the percentage.

Returns

the integer value of the percentage

Definition at line 76 of file Percent.java.

3.14.3.5 longValue()

```
long com.backend.Percent.longValue ( )
```

Gets the long value of the percentage.

Returns

the long value of the percentage

Definition at line 86 of file Percent.java.

3.14.3.6 round()

```
static double com.backend.Percent.round (
            double toBeRounded )  [static]
```

Rounds to the nearest integer, as none of the used percentages require much precision.

Parameters

toBeRounded	the double before rounding

Returns

The rounded double

Definition at line 47 of file Percent.java.

3.14.3.7 toString()

```
String com.backend.Percent.toString ( )
```

Allows Printing as a String.

Returns

A String with the correct formatting

Definition at line 66 of file Percent.java.

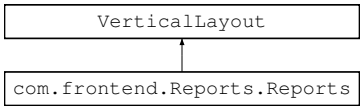
The documentation for this class was generated from the following file:

- Percent.java

3.15 com.frontend.Reports.Reports Class Reference

The main class for Generating Reports.

Inheritance diagram for com.frontend.Reports.Reports:



Public Member Functions

- Reports ()
  Creates a form which allows the option between generating a group and individual report.
- void generateIndividualReport ()
  Creates a form to configure an individual student report.
- void generateGroupReport ()
  Creates the form to Generate the group report.
- void individualReport (Student student, Date startingDate)
  Using the given constraints, generate an individual report.
- void groupReport (String option)
  The group report after it has been configured.

Static Public Member Functions

- static Div setText (String header, String text)
  This method returns a the pre-formatted data of a student.
- static void nextSection (Board dataBoard)
  Prints out two lines in the data board to symbolize the next section.
- static Div makeBulletList (String label, List< StudentData > list)
  Makes a bulleted list, primarily used for the inactive students list in the Group Reports.

3.15.1 Detailed Description

The main class for Generating Reports.

Definition at line 36 of file Reports.java.

3.15.2 Member Function Documentation

3.15.2.1 groupReport()

```
void com.frontend.Reports.Reports.groupReport (
            String option )
```

The group report after it has been configured.

Parameters

option	The range of time

Definition at line 391 of file Reports.java.

3.15.2.2 individualReport()

```
void com.frontend.Reports.Reports.individualReport (
            Student student,
            Date startingDate )
```

Using the given constraints, generate an individual report.

Parameters

student	The Student of the Report
startingDate	The report's starting date

Definition at line 265 of file Reports.java.

3.15.2.3 makeBulletList()

```
static Div com.frontend.Reports.Reports.makeBulletList (
            String label,
            List< StudentData > list )  [static]
```

Makes a bulleted list, primarily used for the inactive students list in the Group Reports.

Parameters

label	The label of the List
list	The bulleted items in the list

Returns

A Div containing the Bulleted List

Definition at line 124 of file Reports.java.

3.15.2.4 nextSection()

```
static void com.frontend.Reports.Reports.nextSection (
            Board dataBoard )  [static]
```

Prints out two lines in the data board to symbolize the next section.

Parameters

dataBoard	The databoard with the data

Definition at line 89 of file Reports.java.

3.15.2.5 setText()

```
static Div com.frontend.Reports.Reports.setText (
            String header,
            String text )  [static]
```

This method returns a the pre-formatted data of a student.

This simplifies the job significantly when writing multiple pieces of data

Parameters

header	The heading text of the piece of data
text	The piece of data

Returns

A Div containing the formatted Student Data

Definition at line 76 of file Reports.java.

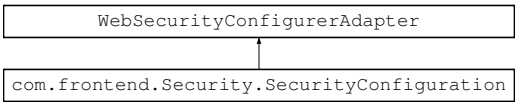
The documentation for this class was generated from the following file:

- Reports.java

3.16 com.frontend.Security.SecurityConfiguration Class Reference

Configures security with username, password, and different redirection options.

Inheritance diagram for com.frontend.Security.SecurityConfiguration:



Public Member Functions

- UserDetailsService userDetailsService ()

  Configures the Login Information and credentials to the app.
- void configure (WebSecurity web)

  Creates a configuration which allows usage of certain things while offline.

Protected Member Functions

- void **configure** (HttpSecurity http) throws Exception

3.16.1 Detailed Description

Configures security with username, password, and different redirection options.

Definition at line 19 of file SecurityConfiguration.java.

3.16.2 Member Function Documentation

3.16.2.1 userDetailsService()

```
UserDetailsService com.frontend.Security.SecurityConfiguration.userDetailsService ( )
```

Configures the Login Information and credentials to the app.

Currently using temporary security for demonstration purposes.

Definition at line 53 of file SecurityConfiguration.java.

The documentation for this class was generated from the following file:

- SecurityConfiguration.java

3.17 com.frontend.Security.SecurityUtils Class Reference

A Class for Util methods in security.

3.17.1 Detailed Description

A Class for Util methods in security.

Definition at line 15 of file SecurityUtils.java.

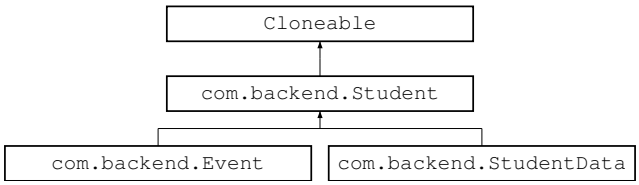
The documentation for this class was generated from the following file:

- SecurityUtils.java

3.18 com.backend.Student Class Reference

The General Student Class to Store Basic Student Information.

Inheritance diagram for com.backend.Student:



Public Member Functions

- Student ()

  Creates an empty student to allow using the other methods to manipulate it.
- Student (String firstName, String lastName, int studentID)

  Creates a student with the given variables.
- Student (boolean createNewStudent)

  Creates a new student with the createNewStudent variable, used to link a student with the Add Student feature in Select, ComboBox, and others.
- String getFirstName ()

  Gets the First.
- void setFirstName (String firstName)

  Changes the first name.
- String getLastName ()

  Gets the last name.
- void setLastName (String lastName)

  Changes the Last name.
- String getFullName ()

  Gets the full name in a specific format.
- int getStudentID ()

Gets the student ID.

- void setStudentID (int studentID)

  Changes the StudentID.

- Student getStudent ()

  Returns itself, mainly for the child methods.

- void setStudent (Student newStudent)

  Changes all values of a student to be equal to a different student datatype.

- boolean getCreateNewStudent ()

  Returns the boolean telling whether the object is meant to symbolize creating a new student.

- StudentData getStudentData ()

  Uses the MySQLMethods to get the StudentData of the given Student.

- void delete ()

  Deletes this student from the backend database.

- String toString ()

  Converts The Student to a String.

Protected Member Functions

- Student **clone** () throws CloneNotSupportedException

3.18.1 Detailed Description

The General Student Class to Store Basic Student Information.

The Parent of StudentData and Event

Definition at line 10 of file Student.java.

3.18.2 Constructor & Destructor Documentation

3.18.2.1 Student() [1/2]

```
com.backend.Student.Student (
            String firstName,
            String lastName,
            int studentID )
```

Creates a student with the given variables.

Parameters

firstName	The First Name
lastName	The Last Name
studentID	The Student ID

Definition at line 42 of file Student.java.

3.18.2.2 Student() [2/2]

```
com.backend.Student.Student (
            boolean createNewStudent )
```

Creates a new student with the createNewStudent variable, used to link a student with the Add Student feature in Select, ComboBox, and others.

Parameters

createNewStudent	The value of createNewStudent, typically when this method is used;

Definition at line 54 of file Student.java.

3.18.3 Member Function Documentation

3.18.3.1 getCreateNewStudent()

```
boolean com.backend.Student.getCreateNewStudent ( )
```

Returns the boolean telling whether the object is meant to symbolize creating a new student.

Returns

Whether the student symbolizes creating a new Student

Definition at line 148 of file Student.java.

3.18.3.2 getFirstName()

```
String com.backend.Student.getFirstName ( )
```

Gets the First.

Returns

the First Name

Definition at line 63 of file Student.java.

3.18.3.3 getFullName()

```
String com.backend.Student.getFullName ( )
```

Gets the full name in a specific format.

Uses the format firstName_lastName_studentID

Returns

The Name in said format

Definition at line 101 of file Student.java.

3.18.3.4 getLastName()

```
String com.backend.Student.getLastName ( )
```

Gets the last name.

Returns

the last name

Definition at line 81 of file Student.java.

3.18.3.5 getStudent()

```
Student com.backend.Student.getStudent ( )
```

Returns itself, mainly for the child methods.

Returns

itself, a Student

Definition at line 128 of file Student.java.

3.18.3.6 getStudentData()

```
StudentData com.backend.Student.getStudentData ( )
```

Uses the MySQLMethods to get the StudentData of the given Student.

Returns

The full StudentData of the Student

Definition at line 157 of file Student.java.

3.18.3.7 getStudentID()

```
int com.backend.Student.getStudentID ( )
```

Gets the student ID.

Returns

the Student ID

Definition at line 110 of file Student.java.

3.18.3.8 setFirstName()

```
void com.backend.Student.setFirstName (
            String firstName )
```

Changes the first name.

Parameters

firstName	the new first name

Definition at line 72 of file Student.java.

3.18.3.9 setLastName()

```
void com.backend.Student.setLastName (
            String lastName )
```

Changes the Last name.

Parameters

lastName	the new Last Name

Definition at line 90 of file Student.java.

3.18.3.10 setStudent()

```
void com.backend.Student.setStudent (
            Student newStudent )
```

Changes all values of a student to be equal to a different student datatype.

Parameters

newStudent	The Values of the New Student

Definition at line 137 of file Student.java.

3.18.3.11 setStudentID()

```
void com.backend.Student.setStudentID (
            int studentID )
```

Changes the StudentID.

Parameters

studentID	the new Student ID

Definition at line 119 of file Student.java.

3.18.3.12 toString()

```
String com.backend.Student.toString ( )
```

Converts The Student to a String.

Returns

A String representing the Student

Reimplemented in com.backend.Event.

Definition at line 180 of file Student.java.

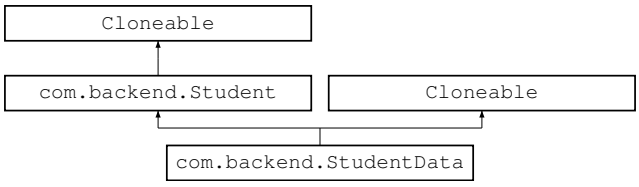
The documentation for this class was generated from the following file:

- Student.java

3.19 com.backend.StudentData Class Reference

This is a class which helps in running MySQL Methods and takes in all the values needed for the main student.

Inheritance diagram for com.backend.StudentData:



Public Member Functions

- StudentData (boolean fromSelect)

  A Constructor which allows the use of.
- StudentData ()

  A Simple Constructor for the creation of a StudentData Object.
- short getGrade ()

  Gets the student's current grade level.
- void setGrade (int grade)

  Sets the Grade Level of the Student, changing the backend database if necessary.
- void setGrade (String grade)

  Sets the Grade Level of the Student, changing the backend database if necessary.
- int getGradeInt ()

  Gets the student's current grade level.
- double getCommunityServiceHours ()

  Gets the Amount of Community Service Hours the Student has participated in.
- void setCommunityServiceHours (double communityServiceHours)

  Changes the number of Community Service Hours a student participated in, updating the backend if necessary.
- void setCommunityServiceHoursFromSelect (double communityServiceHours)

  Changes the number of Community Service Hours a student participated in and updating the backend.
- void setCommunityServiceHoursFromSelect (String communityServiceHours)

  Changes the number of Community Service Hours a student participated in and updating the backend.
- String getCommunityServiceCategory ()

  Gets the Community Service Award Category Goal of the Student.
- void setCommunityServiceCategory (String communityServiceCategoryIn)

  Changes the Community Service Award Category, updating the backend if necessary.
- int getCommunityServiceCategoryInt ()

  Gets each Community Service Categories respective integer value.
- String getCurrentCommunityServiceCategory ()

  Gets the Student's current Community Service Award Category depending on the hours the student has done.
- int getCurrentCommunityServiceCategoryInt ()

  Gets the student's current achieved category and returns its respective integer.
- String getEmail ()

  Gets the student's email address.
- void setEmail (@NotNull final String email)

  Changes the student's email address, updating the backend if necessary.
- short getYearsDone ()

  Gets the number of years a student has participated in FBLA.
- void setYearsDone (@NotNull final short yearsDone)

  Changes the value of the number of years a student has participated in FBLA, updating the database if necessary.
- void setYearsDone (String yearsDone)

  Changes the value of the number of years a student has participated in FBLA, updating the database if necessary.
- boolean **isFreshman** ()
- void **setFreshman** (boolean freshman)
- boolean **isSophomore** ()
- void **setSophomore** (boolean sophomore)
- boolean **isJunior** ()
- void **setJunior** (boolean junior)
- boolean **isSenior** ()
- void **setSenior** (boolean senior)
- Date getLastEdited ()

Gets the date any of a Student's information was last edited.

- void setLastEdited (String lastEdited)

  Changes the last-edited date of a Student's information.
- boolean achievedGoal ()

  Gets whether or not a student achieved their Community Service Award Category Goal.
- void createStudent ()

  Creates this student and adds it to database.
- void setCommunityServiceHoursTemp (double communityServiceHours)

  Temporarily sets the community Service hours of a student, typically used when looking at the hours in a range.
- boolean isActive ()

  Returns whether or not the student has any hours.
- void setFirstName (@NotNull final String firstName)

  Changes the Student's First Name, checking to see if the backend database must be changes as well.
- void setLastName (@NotNull final String lastName)

  Changes the last name of a student and updates the database if necessary.
- void setStudentID (@NotNull final int studentID)

  Changes the StudentID of a student, updating the database if necessary.
- void setStudentID (String studentID)

  Changes the StudentID of a student, updating the database if necessary.

Static Public Member Functions

- static String getAverageCategory (List< StudentData > studentDataList)

  Calculates the average achieved category in a list of students.
- static String getAverageGoal (List< StudentData > studentDataList)

  Calculates the Average Category Goal of a List of Students.
- static String getActiveCategory (List< StudentData > studentDataListIn)

  Takes a List of Students and returns the value of their average current category discounting students with no hours.
- static String getActiveGoal (List< StudentData > studentDataListIn)

  Takes a List of Students and returns the value of their average Community Service Goal discounting the students with no hours.
- static List< StudentData > removeInactive (List< StudentData > studentDataListIn)

  Takes a list of Students and removes all of the students with no hours.
- static List< StudentData > removeActive (List< StudentData > studentDataListIn)

  Returns a new list with only the inactive students.

Protected Member Functions

- StudentData **clone** () throws CloneNotSupportedException

3.19.1 Detailed Description

This is a class which helps in running MySQL Methods and takes in all the values needed for the main student.

Author

Shourya Bansal

See also

Student

Definition at line 15 of file StudentData.java.

3.19.2 Constructor & Destructor Documentation

3.19.2.1 StudentData() [1/2]

```
com.backend.StudentData.StudentData (
            boolean fromSelect )
```

A Constructor which allows the use of.

Parameters

fromSelect	the fromSelect value, typically true if this method is used.

Definition at line 56 of file StudentData.java.

3.19.2.2 StudentData() [2/2]

```
com.backend.StudentData.StudentData ( )
```

A Simple Constructor for the creation of a StudentData Object.

However, the StudentData Object can not be used unless the requisite setter methods are used

See also

setGrade(int)

#setYearsDone(short)

setStudentID(int)

setStudent(Student)

setCommunityServiceHours(double)

setCommunityServiceCategory(String)

Definition at line 73 of file StudentData.java.

3.19.3 Member Function Documentation

3.19.3.1 achievedGoal()

```
boolean com.backend.StudentData.achievedGoal ( )
```

Gets whether or not a student achieved their Community Service Award Category Goal.

Returns

a boolean of whether or not a student achieved his or her goal

Definition at line 499 of file StudentData.java.

3.19.3.2 getActiveCategory()

```
static String com.backend.StudentData.getActiveCategory (
            List< StudentData > studentDataListIn )  [static]
```

Takes a List of Students and returns the value of their average current category discounting students with no hours.

Parameters

studentData↩ ListIn	A List of Students which contains both active and inactive students

Returns

The Average Category of only the Active Students

Definition at line 126 of file StudentData.java.

3.19.3.3 getActiveGoal()

```
static String com.backend.StudentData.getActiveGoal (
            List< StudentData > studentDataListIn )  [static]
```

Takes a List of Students and returns the value of their average Community Service Goal discounting the students with no hours.

Parameters

studentData↩ ListIn	A List of Students which contains both active and inactive students

Returns

The Average Category Goal of only the Active Students

Definition at line 141 of file StudentData.java.

3.19.3.4 getAverageCategory()

```
static String com.backend.StudentData.getAverageCategory (
            List< StudentData > studentDataList )  [static]
```

Calculates the average achieved category in a list of students.

Parameters

studentDataList	The List of Students

Returns

The Average Category

Definition at line 84 of file StudentData.java.

3.19.3.5 getAverageGoal()

```
static String com.backend.StudentData.getAverageGoal (
            List< StudentData > studentDataList )  [static]
```

Calculates the Average Category Goal of a List of Students.

Parameters

studentDataList	The List of Students

Returns

The Average Category Goal

Definition at line 106 of file StudentData.java.

3.19.3.6 getCommunityServiceCategory()

```
String com.backend.StudentData.getCommunityServiceCategory ( )
```

Gets the Community Service Award Category Goal of the Student.

Returns

The Community Service Award Category Goal

Definition at line 287 of file StudentData.java.

3.19.3.7 getCommunityServiceCategoryInt()

```
int com.backend.StudentData.getCommunityServiceCategoryInt ( )
```

Gets each Community Service Categories respective integer value.

Returns

the respective integer value of the Student's Category goal

Definition at line 319 of file StudentData.java.

3.19.3.8 getCommunityServiceHours()

```
double com.backend.StudentData.getCommunityServiceHours ( )
```

Gets the Amount of Community Service Hours the Student has participated in.

Returns

The Number of hours

Definition at line 248 of file StudentData.java.

3.19.3.9 getCurrentCommunityServiceCategory()

```
String com.backend.StudentData.getCurrentCommunityServiceCategory ( )
```

Gets the Student's current Community Service Award Category depending on the hours the student has done.

Returns

The Category

Definition at line 335 of file StudentData.java.

3.19.3.10 getCurrentCommunityServiceCategoryInt()

```
int com.backend.StudentData.getCurrentCommunityServiceCategoryInt ( )
```

Gets the student's current achieved category and returns its respective integer.

Returns

An integer representing the student's current category

See also

getCurrentCommunityServiceCategory()

Definition at line 348 of file StudentData.java.

3.19.3.11 getEmail()

```
String com.backend.StudentData.getEmail ( )
```

Gets the student's email address.

Returns

The Student's email address

Definition at line 364 of file StudentData.java.

3.19.3.12 getGrade()

```
short com.backend.StudentData.getGrade ( )
```

Gets the student's current grade level.

Returns

the current grade level

Definition at line 202 of file StudentData.java.

3.19.3.13 getGradeInt()

```
int com.backend.StudentData.getGradeInt ( )
```

Gets the student's current grade level.

Returns

the current grade level

Definition at line 239 of file StudentData.java.

3.19.3.14 getLastEdited()

```
Date com.backend.StudentData.getLastEdited ( )
```

Gets the date any of a Student's information was last edited.

Returns

A Date containing the last date a value was changed

Definition at line 473 of file StudentData.java.

3.19.3.15 getYearsDone()

```
short com.backend.StudentData.getYearsDone ( )
```

Gets the number of years a student has participated in FBLA.

Returns

The Number of Years a Student Has Participated in FBLA

Definition at line 391 of file StudentData.java.

3.19.3.16 isActive()

```
boolean com.backend.StudentData.isActive ( )
```

Returns whether or not the student has any hours.

If a Student has no hours, the student is considered inActive, so some tables will ignore them when showing data

Returns

whether or not a student is active

Definition at line 527 of file StudentData.java.

3.19.3.17 removeActive()

```
static List<StudentData> com.backend.StudentData.removeActive (
            List< StudentData > studentDataListIn )  [static]
```

Returns a new list with only the inactive students.

Parameters

studentDataListIn	A List containing both active and inactive students

Returns

A new list with only inactive students

Definition at line 173 of file StudentData.java.

3.19.3.18 removeInactive()

```
static List<StudentData> com.backend.StudentData.removeInactive (
            List< StudentData > studentDataListIn )  [static]
```

Takes a list of Students and removes all of the students with no hours.

No changes are made to the original List to ensure that both the old and new list are still accessible by the User

Parameters

studentDataListIn	A List of Students with both active and inactive students

Returns

A new list with only the active students

Definition at line 157 of file StudentData.java.

3.19.3.19 setCommunityServiceCategory()

```
void com.backend.StudentData.setCommunityServiceCategory (
            String communityServiceCategoryIn )
```

Changes the Community Service Award Category, updating the backend if necessary.

Parameters

communityServiceCategoryIn	The new Community Service Award Category

Definition at line 296 of file StudentData.java.

3.19.3.20 setCommunityServiceHours()

```
void com.backend.StudentData.setCommunityServiceHours (
            double communityServiceHours )
```

Changes the number of Community Service Hours a student participated in, updating the backend if necessary.

Parameters

communityServiceHours	The new amount of community Service Hours

Definition at line 257 of file StudentData.java.

3.19.3.21 setCommunityServiceHoursFromSelect() [1/2]

```
void com.backend.StudentData.setCommunityServiceHoursFromSelect (
            double communityServiceHours )
```

Changes the number of Community Service Hours a student participated in and updating the backend.

Parameters

communityServiceHours	The new amount of community Service Hours

Definition at line 268 of file StudentData.java.

3.19.3.22 setCommunityServiceHoursFromSelect() [2/2]

```
void com.backend.StudentData.setCommunityServiceHoursFromSelect (
            String communityServiceHours )
```

Changes the number of Community Service Hours a student participated in and updating the backend.

Parameters

communityServiceHours	The new amount of community Service Hours

Definition at line 278 of file StudentData.java.

3.19.3.23 setCommunityServiceHoursTemp()

```
void com.backend.StudentData.setCommunityServiceHoursTemp (
            double communityServiceHours )
```

Temporarily sets the community Service hours of a student, typically used when looking at the hours in a range.

Parameters

communityServiceHours	the temporary amount of hours of a student

Definition at line 516 of file StudentData.java.

3.19.3.24 setEmail()

```
void com.backend.StudentData.setEmail (
            @NotNull final String email )
```

Changes the student's email address, updating the backend if necessary.

Parameters

email	The New email address

Definition at line 373 of file StudentData.java.

3.19.3.25 setFirstName()

```
void com.backend.StudentData.setFirstName (
            @NotNull final String firstName )
```

Changes the Student's First Name, checking to see if the backend database must be changes as well.

Parameters

firstName	the new first name

Definition at line 537 of file StudentData.java.

3.19.3.26 setGrade() [1/2]

```
void com.backend.StudentData.setGrade (
            int grade )
```

Sets the Grade Level of the Student, changing the backend database if necessary.

Parameters

grade	The New Grade level

Definition at line 211 of file StudentData.java.

3.19.3.27 setGrade() [2/2]

```
void com.backend.StudentData.setGrade (
            String grade )
```

Sets the Grade Level of the Student, changing the backend database if necessary.

Parameters

grade	The New Grade level

Definition at line 230 of file StudentData.java.

3.19.3.28 setLastEdited()

```
void com.backend.StudentData.setLastEdited (
            String lastEdited )
```

Changes the last-edited date of a Student's information.

Parameters

lastEdited	The new lastEdited Date

Definition at line 482 of file StudentData.java.

3.19.3.29 setLastName()

```
void com.backend.StudentData.setLastName (
            @NotNull final String lastName )
```

Changes the last name of a student and updates the database if necessary.

Parameters

lastName	the new Last Name

Definition at line 557 of file StudentData.java.

3.19.3.30 setStudentID() [1/2]

```
void com.backend.StudentData.setStudentID (
            @NotNull final int studentID )
```

Changes the StudentID of a student, updating the database if necessary.

Parameters

studentID	the new Student ID

Definition at line 577 of file StudentData.java.

3.19.3.31 setStudentID() [2/2]

```
void com.backend.StudentData.setStudentID (
            String studentID )
```

Changes the StudentID of a student, updating the database if necessary.

Parameters

studentID	the new Student ID

Definition at line 594 of file StudentData.java.

3.19.3.32 setYearsDone() [1/2]

```
void com.backend.StudentData.setYearsDone (
            @NotNull final short yearsDone )
```

Changes the value of the number of years a student has participated in FBLA, updating the database if necessary.

Parameters

yearsDone	The new number of years done

Definition at line 401 of file StudentData.java.

3.19.3.33 setYearsDone() [2/2]

```
void com.backend.StudentData.setYearsDone (
            String yearsDone )
```

Changes the value of the number of years a student has participated in FBLA, updating the database if necessary.

Parameters

yearsDone	The new number of years done

Definition at line 420 of file StudentData.java.

The documentation for this class was generated from the following file:

- StudentData.java