Student Roster Lab

Lab 8

Generated by Doxygen 1.8.10

Mon Mar 27 2017 19:07:58

Contents

1   Class Index

1.1   Class List

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

CourseRoster	**1**
PublicTests	**3**
Student	**4**
StudentTests	**5**

2   Class Documentation

2.1   CourseRoster Class Reference

Public Member Functions

- CourseRoster ()
- void addStudent (Student newMember)
- int getSize ()

- String getNames ()
- int findIndex (String name)
- int getValues ()
- int giveMoreAid ()
- boolean removeStudent (String name)

2.1.1 Detailed Description

Provides a "collection" of `Student` objects. Note: this class does this by maintaining a `private` Array of Strings. This class exposes some "common" methods that we associate with collections (such as arrays); for example, adding and removing objects (Students), retrieving the "index" of a Student, which is another way of saying return an integer that represents where this Student is found in the internal array—note, returns -1 if no such object is found in the array, and a host of other methods whose descriptions are provided below. These other methods often rely upon supporting methods having been implemented in the `Student` class; such methods will be described in that class.

Author

> CMSC 131

2.1.2 Constructor & Destructor Documentation

2.1.2.1 CourseRoster ( )

The "default" ctor for this class.

2.1.3 Member Function Documentation

2.1.3.1 void addStudent (Student *newMember*)

postcondition: Adds a new "item" to the end of the roster (array). Note: this method is written for you—do not modify it.

Parameters

newMember	

2.1.3.2 int findIndex (String *name*)

Postcondition: Returns the "index" (an integer) of the *first* occurrence of the Name as the name of a Student in the current Roster. Note, per Java convention, this method returns a -1 if no such object is found.

Parameters

name	

Returns

Referenced by removeStudent().

2.1.3.3 String getNames ( )

Postcondition: Returns a list of student names concatenated together. The results of this method are used by the JUnit tests to determine if Students were added in the correct order: DO NOT Modify this method; it has been written for you.

Returns

2.1.3.4 int getSize ( )

postcondition: Returns the current "size" (number of elements (Students) in the Roster. Do NOT modify this method as it's been written for you.

Returns

2.1.3.5 int getValues ( )

Postcondition: Returns the "sum" of all values of individual items in the current array based on the Object's `get↩Value()` method. Returns zero if the array (roster) is empty.

Returns

2.1.3.6 int giveMoreAid ( )

PostCondition: Gives a raise in financial aide to each member of the List according to its `giveMoreAid()` method. Returns the sum of the return values from each of the calls to the `giveMoreAid()` method on each object. Note: returns zero if the roster (internal array) is empty.

Returns

2.1.3.7 boolean removeStudent (String *name*)

Postcondition: Removes the `Student` whose name matches the `name` parameter. Returns `false` if no such name is found in the roster. Returns `true` if the Student did appear in the roster and if the Student was successfully removed.

Important: The Roster array must remain the exact size needed to hold "size" Students.

Parameters

name	

Returns

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

- /Users/tomreinhardt/Dropbox/CMSC131/Labs/Lab-Student-Roster-Master/src/CourseRoster.java

2.2 PublicTests Class Reference

Public Member Functions

- void **testAdd** ()

- void **testFind** ()
- void **testgetValues** ()
- void **testGiveMoreAid** ()
- void **testRemoveStudent** ()

2.2.1 Detailed Description

These are provided for you to explore and execute as examples of how to use Java's JUnit operators.

Author

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

- /Users/tomreinhardt/Dropbox/CMSC131/Labs/Lab-Student-Roster-Master/src/PublicTests.java

2.3 Student Class Reference

Public Member Functions

- Student ()
- Student (String name, int financialAid)
- Student (Student other)
- String getName ()
- int getValue ()
- int giveMoreAid ()

2.3.1 Detailed Description

Represents a Student object in the current CourseRoster (qv). Note: the current implementation does not perform any exception handling, nor does the Roster ... you should consider how this implementation might be improved with the addition of some exception handling ...

Author

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2.3.2 Constructor & Destructor Documentation

2.3.2.1 Student (   )

Default CTor for Student objects.

2.3.2.2 Student (String *name,* int *financialAid*)

Utility ctor: most likely called by clients wishing to create Students.

Parameters

name	
financialAid	

2.3.2.3 Student (Student *other*)

Copy-Constructor: Note: creates and returns a "shallow" copy of `other`.

Parameters

other	

2.3.3 Member Function Documentation

2.3.3.1 String getName ( )

Postcondition: returns the (String) name of this Student.

Returns

Referenced by CourseRoster.findIndex(), and CourseRoster.getNames().

2.3.3.2 int getValue ( )

Postcondition: Returns the amount of Financial Aid available to this Studnet.

Returns

Referenced by CourseRoster.getValues().

2.3.3.3 int giveMoreAid ( )

Postcondition: increases the financial aide available to this Student by 120 percent, and returns the difference between this *newly computed* financial aide and the previous amount of financial aide that was available to this Student.

Returns

Referenced by CourseRoster.giveMoreAid().

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

- /Users/tomreinhardt/Dropbox/CMSC131/Labs/Lab-Student-Roster-Master/src/Student.java

2.4 StudentTests Class Reference

Public Member Functions

- void **testCourseRoster** ()

2.4.1 Detailed Description

Please add you own tests below. Follow the "pattern" established in the PublicTests file that we have provided. Note: the submit server will run these tests for you and show the results. Note, no grades will be changed as as result of running any of the StudentTests.

Author

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

- /Users/tomreinhardt/Dropbox/CMSC131/Labs/Lab-Student-Roster-Master/src/StudentTests.java

Index