K Alages - Project Portfolio

Overview

My team and I were tasked with enhancing AddressBook3 - a given CLI (Command Line Interface) application into a better product.
Through the ideation phase, we decided to morph the application into the Njoy Teaching Assistant. We realised that many teachers had issues with managing large groups of students and keeping track of the many physical documents that they require to perform their daily tasks. Therefore, we came up with a solution for them: **nJoyAssistant**. In particular, the Njoy Teaching Assistant enables teachers to maintain student records to manage students better; set questions and quizzes to enhance students learning; and keep track of their schedules with an interactive timetable.

This is what our project looks like:

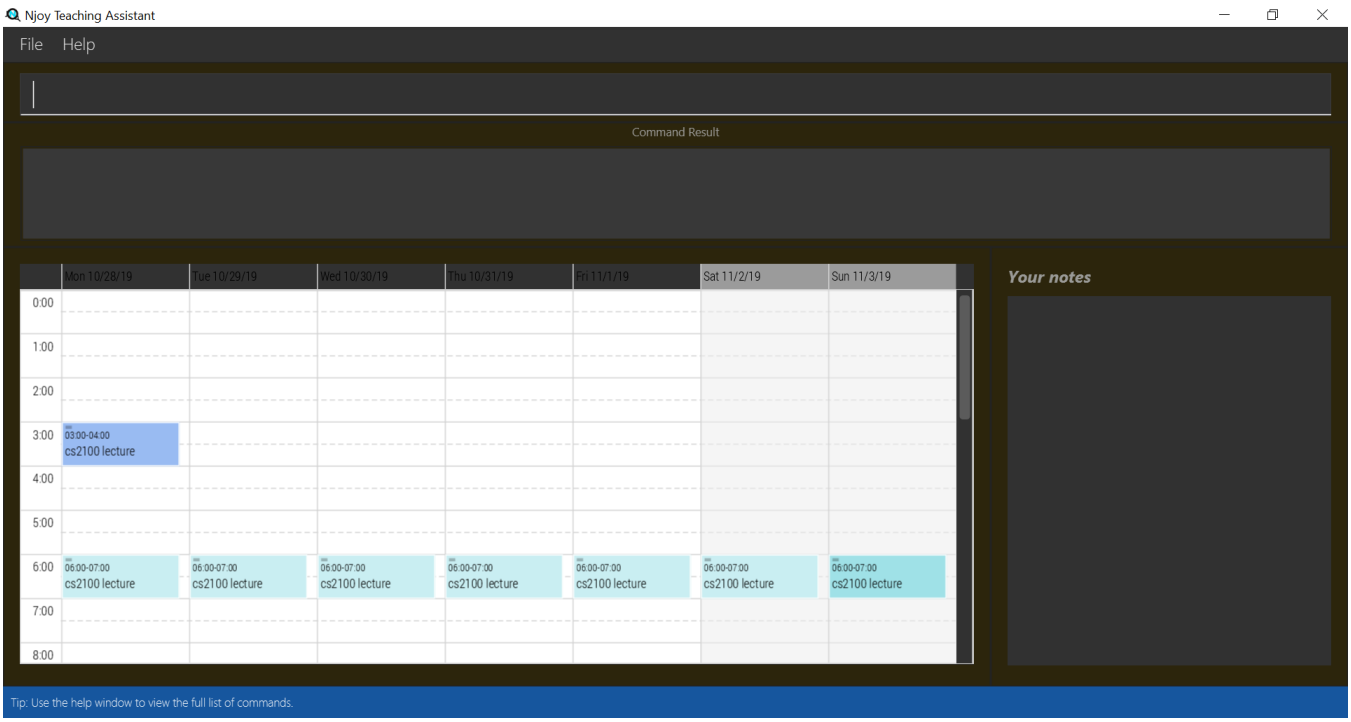


*Figure 1. The graphical user interface for **Njoy**.*

My role was to design and write code for the `student`, `group`, `tag` and `mark` features. The rest of the sections will cover the summary of my contributions to the codebase, the user guide and the developer guide.

The following are icons and symbols that I will be using for the Project Portfolio:

`This indicates a component, class or object in the architecture of the application.`

This indicates important text.

Summary of contributions

This section entails a summary of my specific enhancements, code contributions and other helpful increments towards the Njoy Teaching Assistant.

I implemented the commands related to `student`, `group`, `mark` and `tag`, which include:

- **Adding a student to the student record**
- **Removing a student from the student record**
- **Editing a student in the student record**
- **Listing all students in the student record**
- **Adding a tag to a student**
- **Adding a mark to a student**
- **Removing a mark from a student**
- **Creating a group of students**
- **Adding a student to a group**
- **Removing a student from a group**
- **Listing all students in a group**
- **Exporting a group of students to a word document**

I'll be sectioning the functionality into the following format (where applicable for the features):

1. **Creation**
2. **Deletion**
3. **Editing**
4. **Display**

Enhancements

Student

Student Creation and Deletion

- **What it does:** Users can create students that represents the students that they teach. Students are created by specifying their full names at the point of creation, and students can be tagged with the `tag/` command at the point of creation, which will be discussed under the `tag` feature. Users can also remove students that they no longer teach from their list of students.
- **Justification:** Teachers usually have many students under their control, and having a physical copy of the student list to manage their students can be a hassle. Thus, with **nJoyAssistant**, teachers can now have a digital copy of the list of students that they teach, so that they can manage them easily. There is also a possibility that teachers may no longer teach a particular

student, and thus **nJoyAssistant** provides the functionality for a user to remove students that users are no longer teaching.

- **Highlights:** This enhancement works with existing as well as future commands. The hardest part was to make sure that no repeated students were added to the student list which involved keeping track of what questions have already been added.

Student Editing

- **What it does:** Users can edit students that are currently in their student list.
- **Justification:** There is a possibility that teachers key in the names of their students wrongly when using **nJoyAssistant**. Thus, instead of removing the student and adding a new student into the student list, **nJoyAssistant** provides the functionality to edit the name of a student within the student list.

Tag

Tag Creation

- **What it does:** Users can `tag` their students, with the tag keyword specified after `tag/`.
- **Justification:** Different students usually have different subjects that they are weak at, and it is often hard for teachers to keep track of which students are struggling with which subjects. Thus, **nJoyAssistant** provides the functionality to tag students according to the subjects that they are weak in, allowing teachers to quickly and easily identify the weak subjects of the students that they teach.

Mark

Mark Creation and Deletion

- **What it does:** Users can `mark` their students and remove `mark` from their students.
- **Justification:** Teachers usually have a handful of students that are struggling overall academically, and are in urgent need of academic help. Thus, **nJoyAssistant** provides the functionality of marking students, which highlights the students' name with a red marking on the user interface. This will once again allow teachers to easily identify these students, and provide academic help accordingly. Also, it is possible for students to improve academically, and thus **nJoyAssistant** provides users an option to remove marks from students.

Group

Group Creation

- **What it does:** Users can create groups withstudents.

- **Justification:** Teachers usually teach more than one class, and thus need a way to group their students according to the classes that the students are in. nJoyAssistant thus provides users the functionality to group students and name the group. Groups are also not limited to classes, and users may choose to group students however they like, for example grouping all students who are weak in Chemistry, and naming the group "Chemistry Supplementary Lessons"

Adding a student to a group and removing students from a group

- **What it does:** Users can add students to a group after the group has been created, and remove students from the group as well.
- **Justification:** There is a possibility that users may want to add students to a group after it has been created, and thus **nJoyAssistant** provides that functionality to teachers. Example would be if the student newly joined the particular class. There is also a possibility that users may want to remove students from a group after it has been created, and thus **nJoyAssistant** provides that functionality to teachers. Example would be if the student left the particular class.

Viewing students from a group

- **What it does:** Users can view all students in a group that they created.
- **Justification:** Users would want to know which students are in which group, and thus **nJoyAssistant** provides the functionality to view all the students in a particular group.

Exporting students from a group to a word document

- **What it does:** Users can export all the students from a group into a word document.
- **Justification:** Users may not have access to their computers at all times, and thus **nJoyAssistant** provides users an opportunity to export students from a group into a word document, which can then be printed and used at the times when users have no access to their computers.
- **Highlights:** Students retain their tag and mark information when they are exported into the word document, which was hard to implement.

Code contributed

Please click these links to see a sample of my code.

Student

[Functional code] [Test code] *{Links to samples of my code.}*

Tag

[Functional code] [Test code] *{Links to samples of my code.}*

Mark

[Functional code] [Test code] *{Links to samples of my code.}*

Group

[Functional code] [Test code] *{Links to samples of my code.}*

Other contributions

- Project management:
  - Managed releases v1.2.1 on GitHub, out of the 3 releases.
  - Resolved the issues found by others related to my feature on Github.
  - Updated the AboutUs page in GitHub for my team's repository.
  - Updated the ReadMe description.
- Enhancements to existing features:
  - Wrote additional tests for existing features to increase coverage from 34% to 45% : #182
- Documentation:
  - Made cosmetic tweaks to the existing contents of the User Guide: #183, #187
  - Made relevant changes for the Developer Guide:#187
- Community:
  - Reviewed Pull Requests: #191, #184, #177, #123, #119, #99, #94, #35,

Contributions to the User Guide

> *Given below are sections I contributed to the User Guide. They showcase my ability to write documentation targeting end-users. The following are specific portions of the **njoyAssistant's** User Guide that I have selected. I'll only show one example of creation, editing and display for the features that I have created, as they are repetitive.*

The following is an example of `tag` creation section the User Guide:

Tags - `tag`

Represents the weak subjects of a student, allowing users to focus on the specified weak subject of the student.

Adds a tag to a student: `tag`

Allows a user to add a tag to an already tagged student.
Format: `tag index/… tag/…`

The keywords supported by this feature includes:

Keyword	Description
`index`	The index number of the student you want to add the tag to
`tag`	The name of the tag you want to add to the student

NOTE Tags cannot be multiple-worded, and cannot contain special characters.

Examples:

- **Add one tag**: `tag index/1 tag/Chemistry`
  Adds tag Chemistry to student with index number 1
- **Add multiple tags to a student**: `tag index/1 tag/Chemistry tag/Physics`
  Adds tag Chemistry and tag Physics to student with index number 1

The screenshot below shows a representation of a student with tags

Figure 2. The Student with his/her new tags.

The following is an example of the `student` editing section in the User Guide:

Editing a student

Edit a student currently stored.
Format: `student [index number] name/…`

NOTE All tags and mark of the student to be edited will be transferred over to the new student.

The keywords supported by this feature includes:

Keyword	Description
`[index number]`	Index number of the student to be edited in the student list
`Name`	New name of the student to be edited.

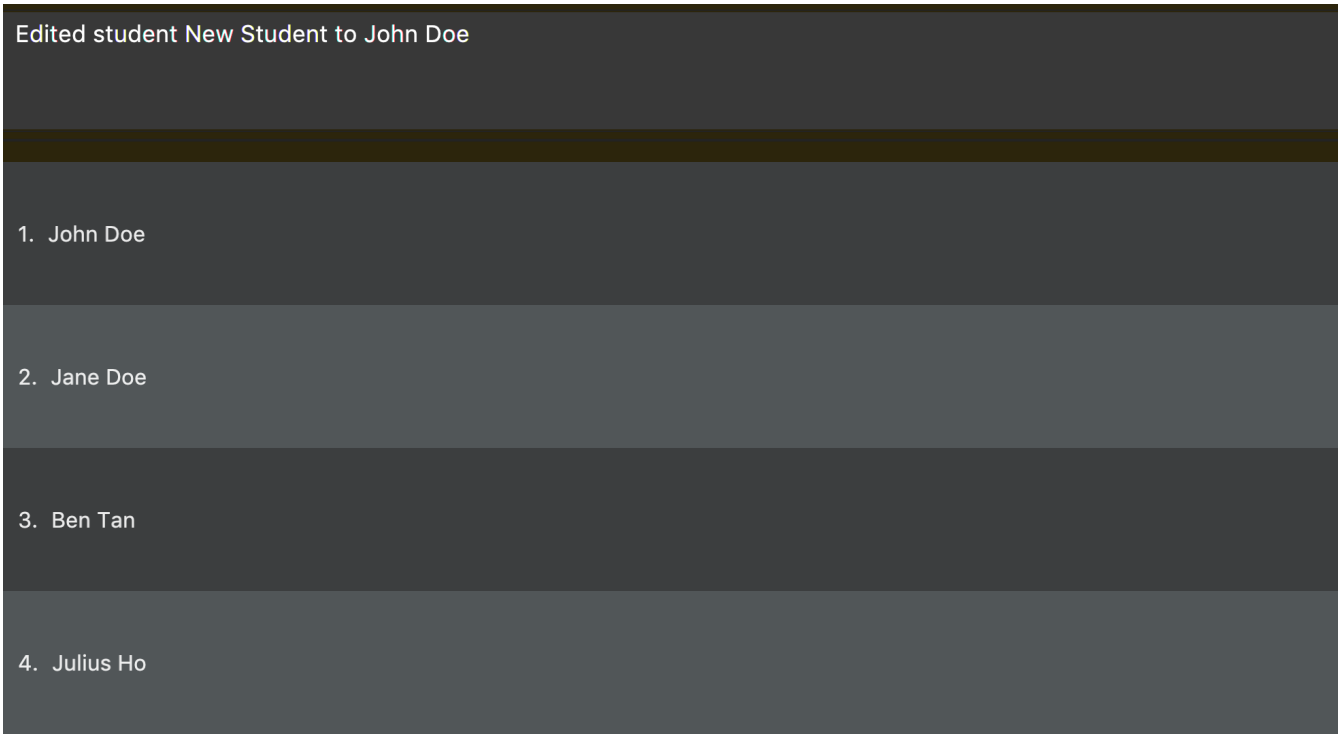
Examples:

- `student 1 name/John Doe`
  Changes the name of the student with index number 1 in the student list to John Doe

To edit student 1 for example:

1. Type in the following command to change the name of student in index 1 to John doe.

2. The result box will display the message “Edited student New Student to John Doe” and the student will be edited successfully.



The following is an example of the `group` display section in the User Guide:

Showing students from a group:

Allows a user to see all students from a group.

Format: `group groupID/…`

The keywords supported by this feature includes:

Keyword	Description
`groupID`	The name of the group

Examples:

- `group groupID/G01`
  Shows all the students that belong to group with groupID `G01`

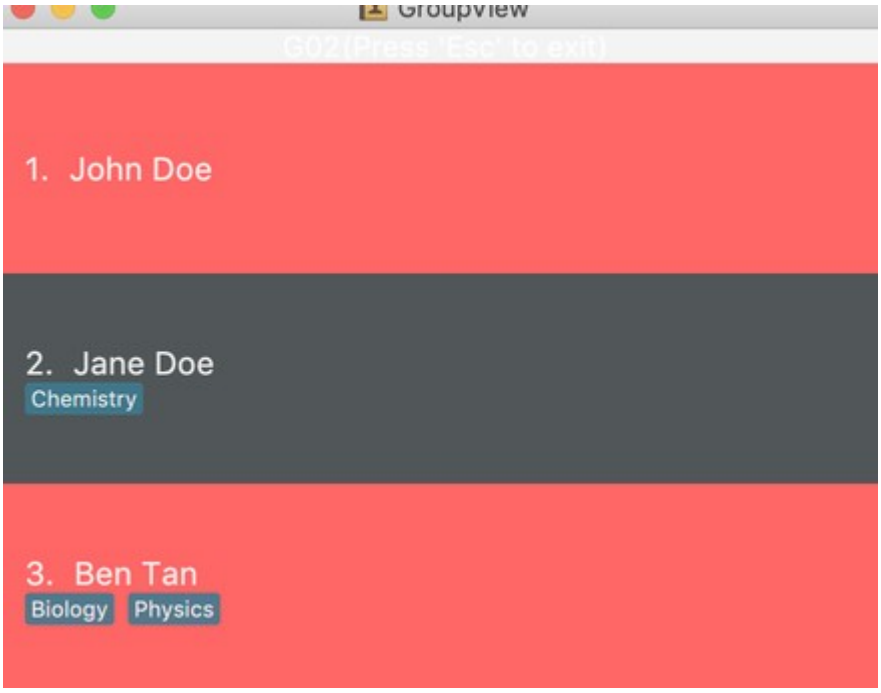


Figure 3. The group view of the group that was selected.

Contributions to the Developer Guide

Given below are sections I contributed to the Developer Guide. They showcase my ability to write technical documentation and the technical depth of my contributions to the project. Again, I'm only going to include the most relevant portions of the guide, especially the UML diagrams that I have created. Also, some of the command hyperlinks will obviously not work because I have omitted them for brevity.

The following is the add `student` section of the Developer Guide:

The Student Commands share similar paths, and is further illustrated in the following sequence diagram, which shows the sequence diagram for the StudentAddCommand.

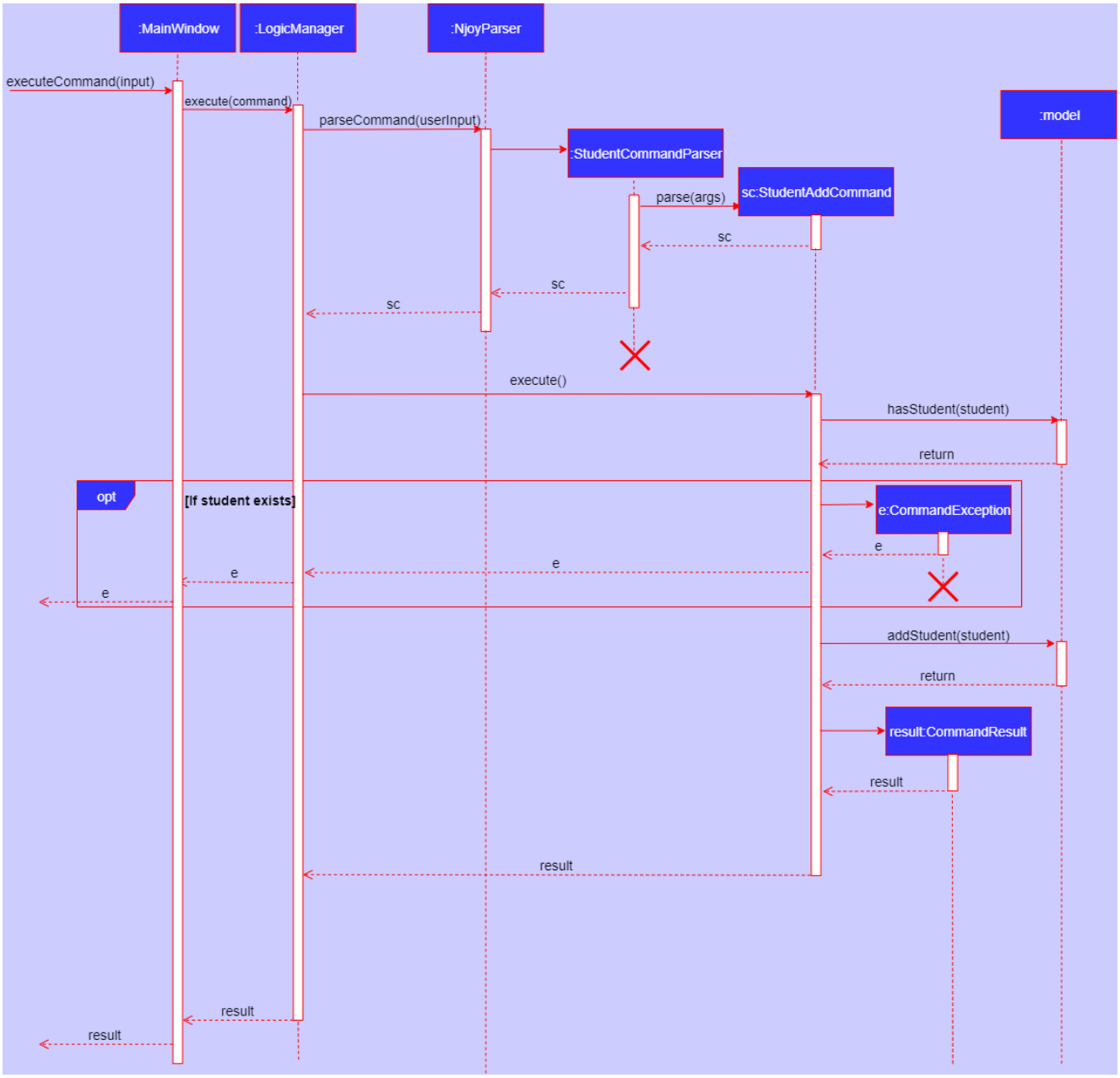


Figure 4. Sequence Diagram for `StudentAddCommand`

Implementation

The following is a detailed explanation of the operations `StudentAddCommand` performs.

1. If the parsing is successful, `StudentAddCommand#execute(Model model)` method is executed and it validates the student defined. Since student names are unique, if a duplicate student is input, and exception is thrown and the duplicate student is not added.
2. If tags are present in the input, `Tags` are created and added to the `Student` in the `StudentCommandParser#addCommand(ArgumentMultimap argMultimap)` method.
3. The method `Model#addStudent(Student student)` will then be called to add the created student and a success message will be generated by the `StudentAddCommand#generateSuccessMessage(Student student)` method and a new `CommandResult` will be returned with the generated success message.
4. The newly created student is added to the `StudentRecord`.

The following is the add `mark` section of the Developer Guide:

The logic flow for both the `mark` and `unmark` commands are quite similar, and can be seen by the following activity diagram that depicts the execution of the `AddMarkCommand`.

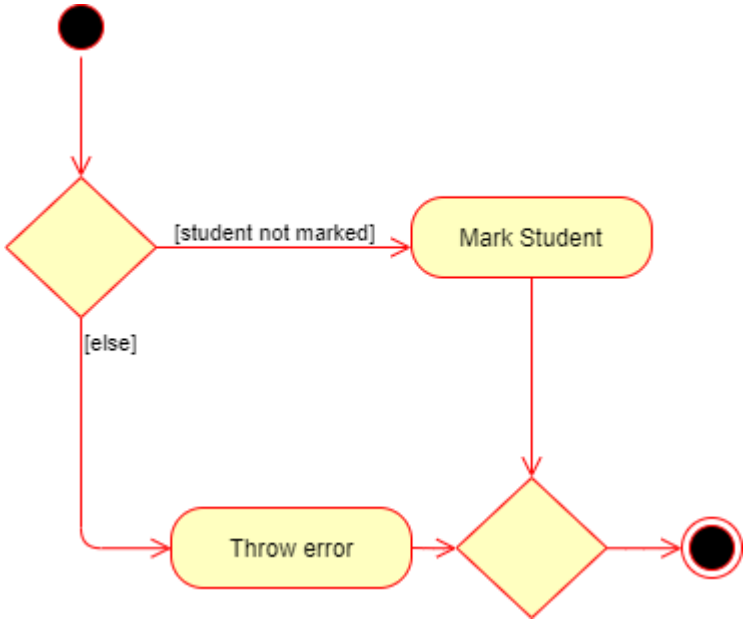


Figure 5. Activity Diagram for `AddMarkCommand`

The following shows the relationship of `Student`, `Group`, `Mark` and `Tag` via a class diagram in the Developer Guide:

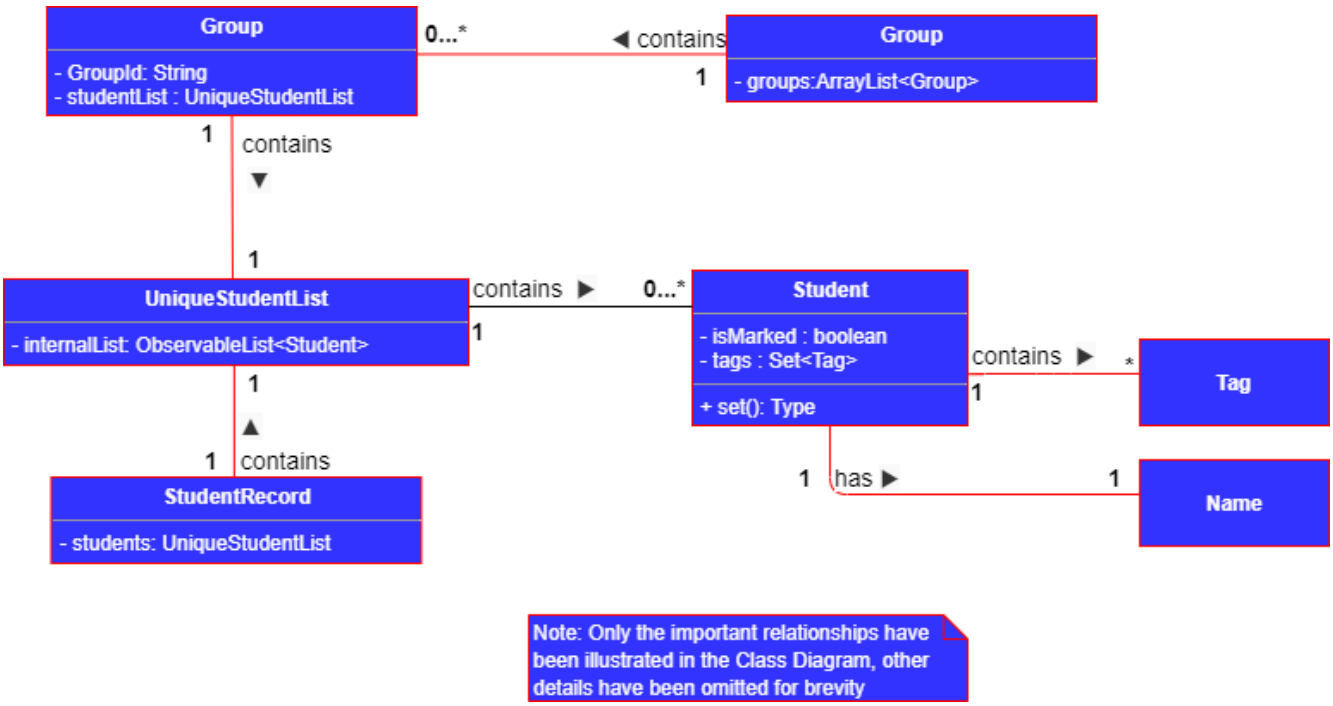


Figure 5. Class Diagram depicting relationships between Student/Group/Mark and Tag features.