EECS2030: LAB 5 Due: Nov 2nd, 2021- 11:59 pm

The purpose of this lab is to ensure that you practice writing codes that involves inheritance relationship.

1. Setup

Please download `Lab5.zip` that is attached to this description.

- Open `eclipse`.
- Click on *`File`* and select *`Import`*.
- Choose *`Existing Projects into Workspace`* and click *`Next`*.
- Click on *`Select Archive File`* and then *`Browse`*. Find `Lab5.zip` and click *`Finish`*.
- Please make sure that you do not already have a project called `EECS2030_Lab5`, otherwise eclipse cannot import it for you.

You should see two files, one is called `Container.java` and one `ContainerTest.java`.

2. JavaDoc generation

The javaDoc has been written for you. All you need to do is to generate it as an HTML file to make it easier for navigation. For this, right click on `Container.java ->` select `export -> javaDoc -> Next`. It will ask you for the location in which you want to store the documentation. Enter the path and then click `Finish`.

If you look at the location in which you stored the documentation, you'll see there is a file called index.html. Clicking on this file, shows the documentation of the project in your browser.

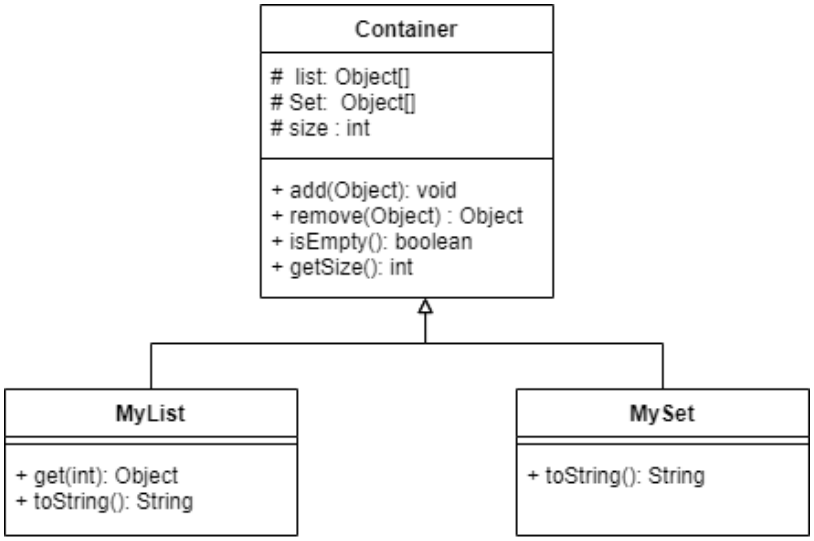
3. Programming Task

A container is a storage that can store an unlimited number of objects. A few methods are defined for a container that can be seen in the UML below.

There are two types of containers called `MyList` and `MySet`. The only differences between `MyList` and `MySet` is that `MySet` does not contain any duplicate object. Therefore if `add()` method is called with an object that is already in the container, it does not add it for the second time. Also, `MyList`

allows us to get access to its items via their index, while this is not true for `MySet`.

Your job for this lab is to implement the components of the two subclasses according to the javaDoc given in the starter code.



Task 1: Class Container

For this task, please implement `isEmpty()` and `getSize()` for class Container according to the description of the method in the given javaDoc.

Task 2: Class MyList

For this task, you need to implement all the methods of this class as explained in the javaDoc. Some of the methods that are inherited form class Container, should be overridden.

Task 3: Class MySet

For this task, you need to implement all the methods of this class as explained in the javaDoc. Some of the methods that are inherited form class Container, should be overridden.

4. Submit

You only submit one file that is called `Container.java` via eClass by clicking on the lab link.

You do not need to submit the tester or HTML files.