Unified Modeling Language (UML)

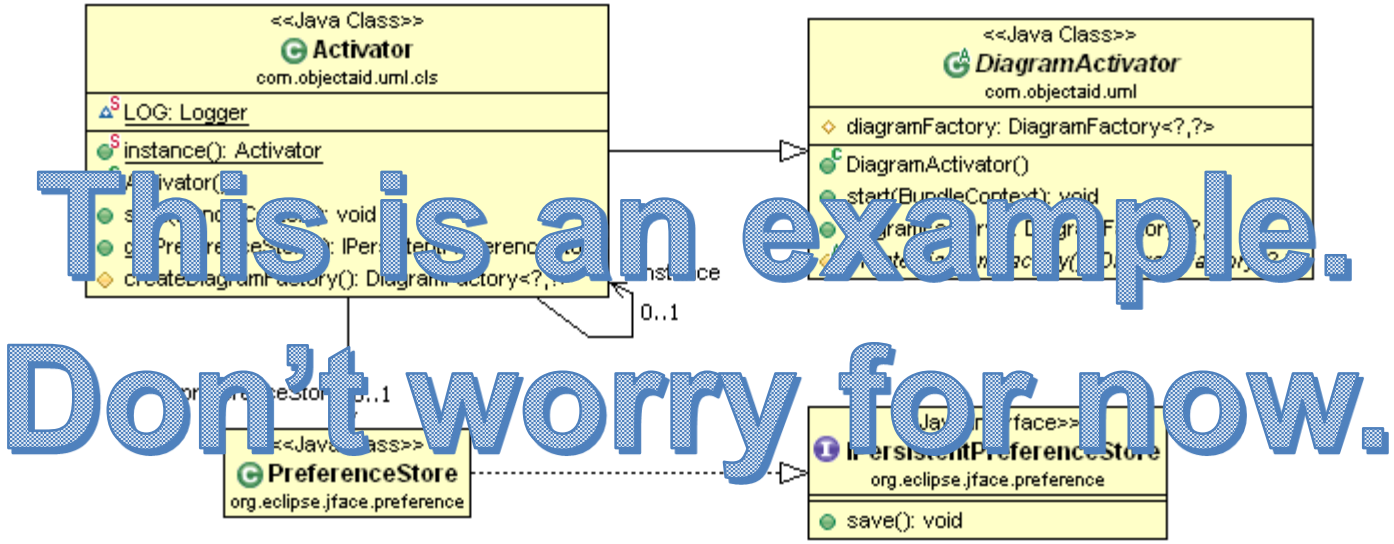
2110215 - Programming Methodology

What is UML?

- UML is a modeling language that was created to standardize ways to visualize the design of the system
- UML has many diagrams to represent various things in the system.
- Class diagram is a UML model that describes the structure of a system by showing the classes attributes and relation between classes or objects.

Class Diagram

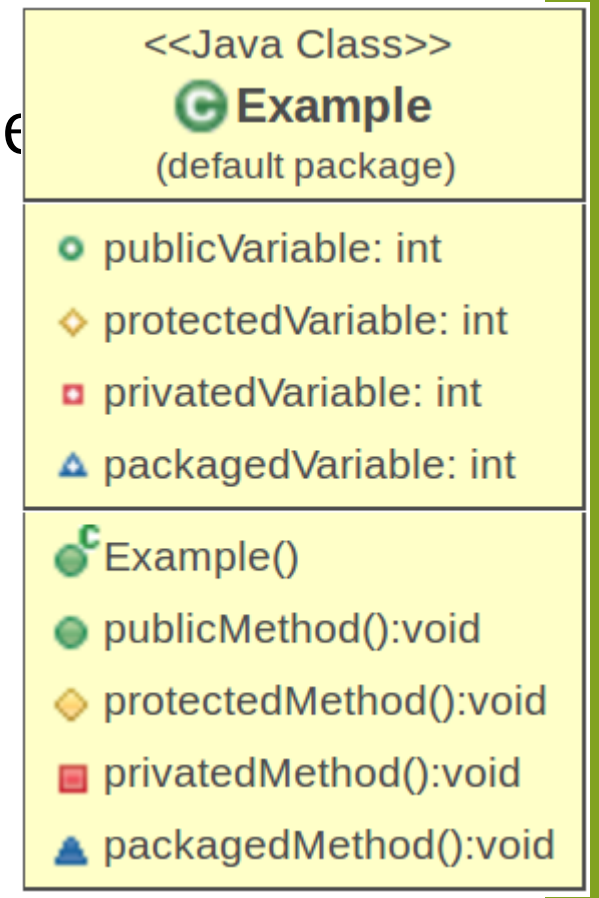
- UML provides mechanic to represent class members,such as attributes and methods, and additional information about them



Class Diagram

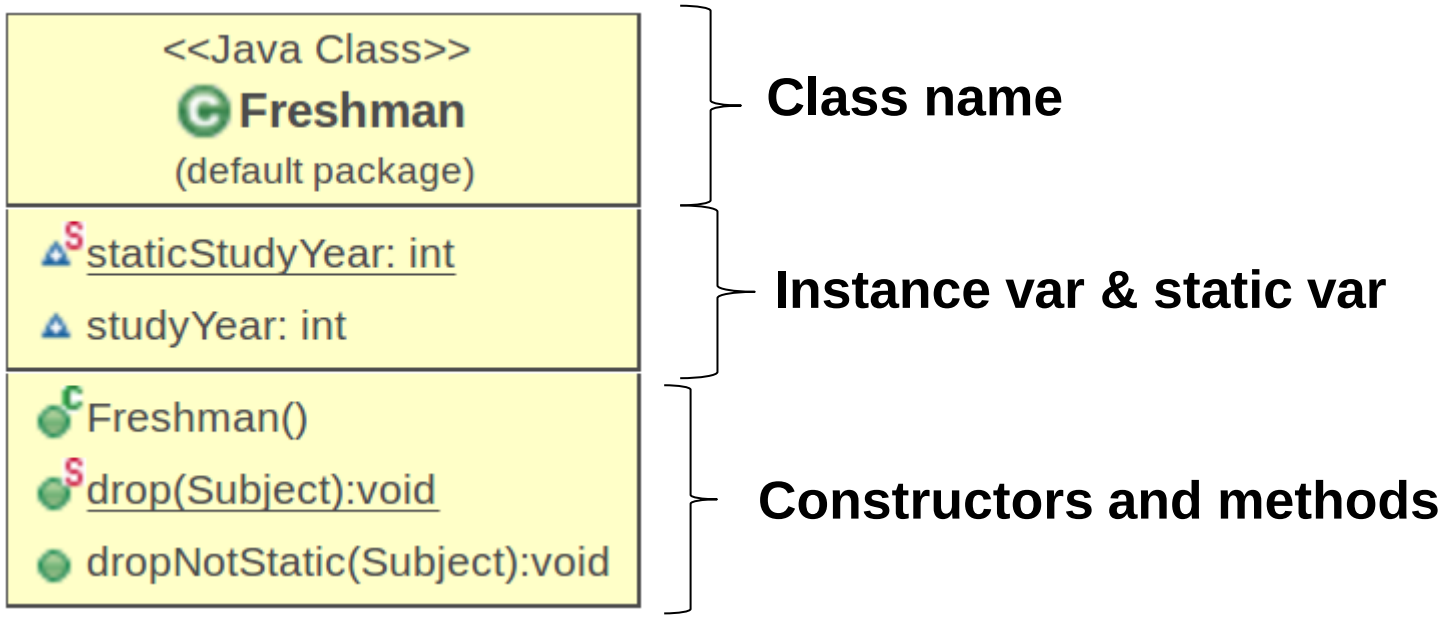
- Visibility - To specify the visibility of a class member (i.e. any attribute or method), these notations must be place before the member's name

Visibility\Can be access by	Same Class	Same Package	Subclass	Different Package
public	Y	Y	Y	Y
protected	Y	Y	Y	N
private	Y	N	N	N
package	Y	Y	N	N



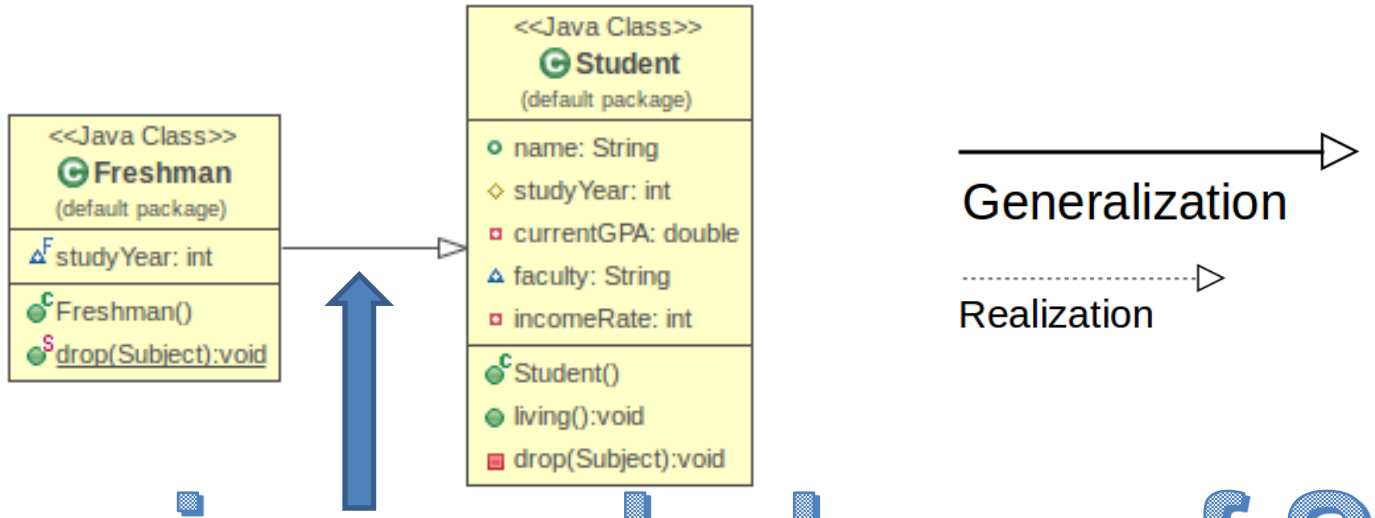
Class Diagram

- Static is a keyword for variable or method. A static variable value will be shared through out all instance of the class. Static method can only access statics variable and call to other static methods only.



Generalization (Lecture 2)

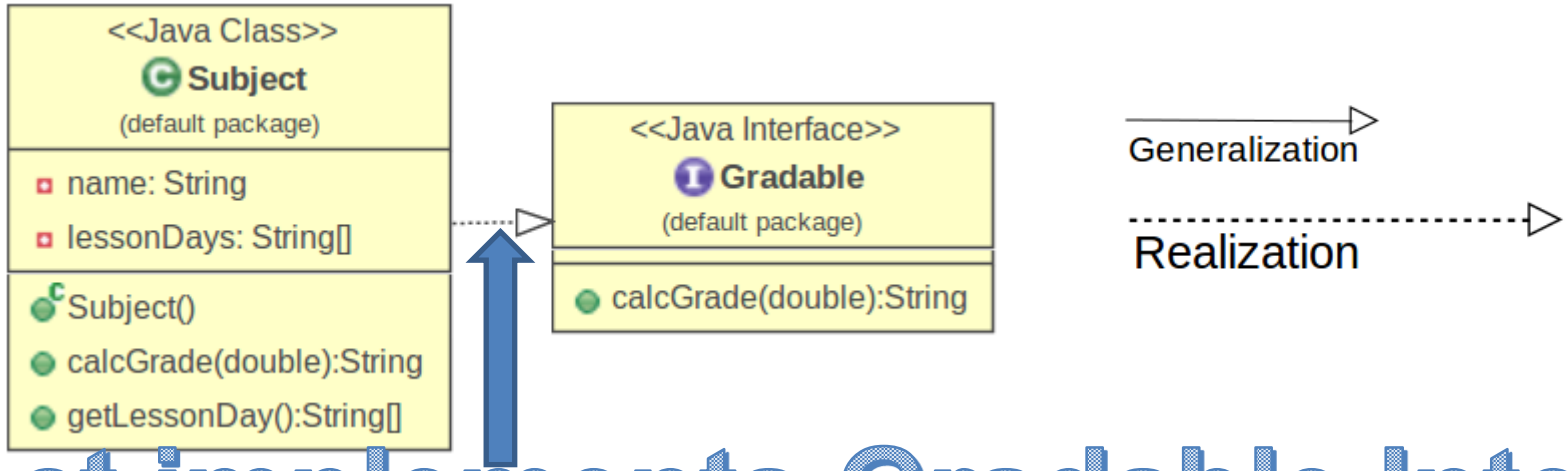
- Generalization is a class relationship that has specialized forms or subclass. It is also known as inheritance relationship



Freshman is a subclass of Student

Realization (Lecture 3)

- Realization is a relationship between models or classes which has one class realized or implemented another class's behaviors or methods

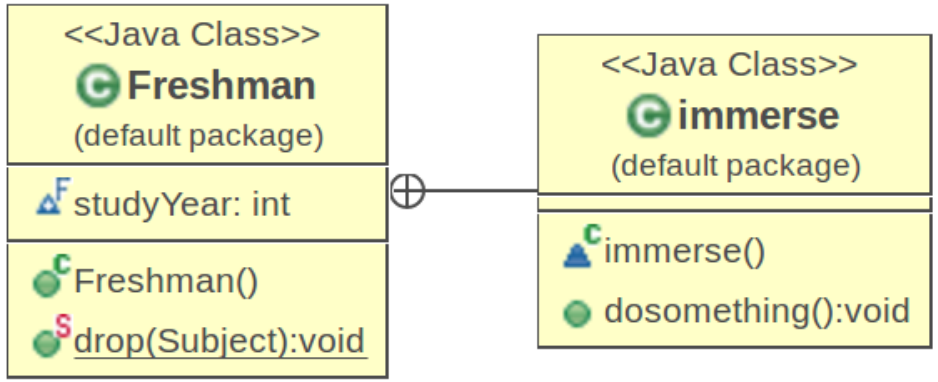


Subject implements Gradable Interface.

We will study this later on.

Nesting (Lecture 3)

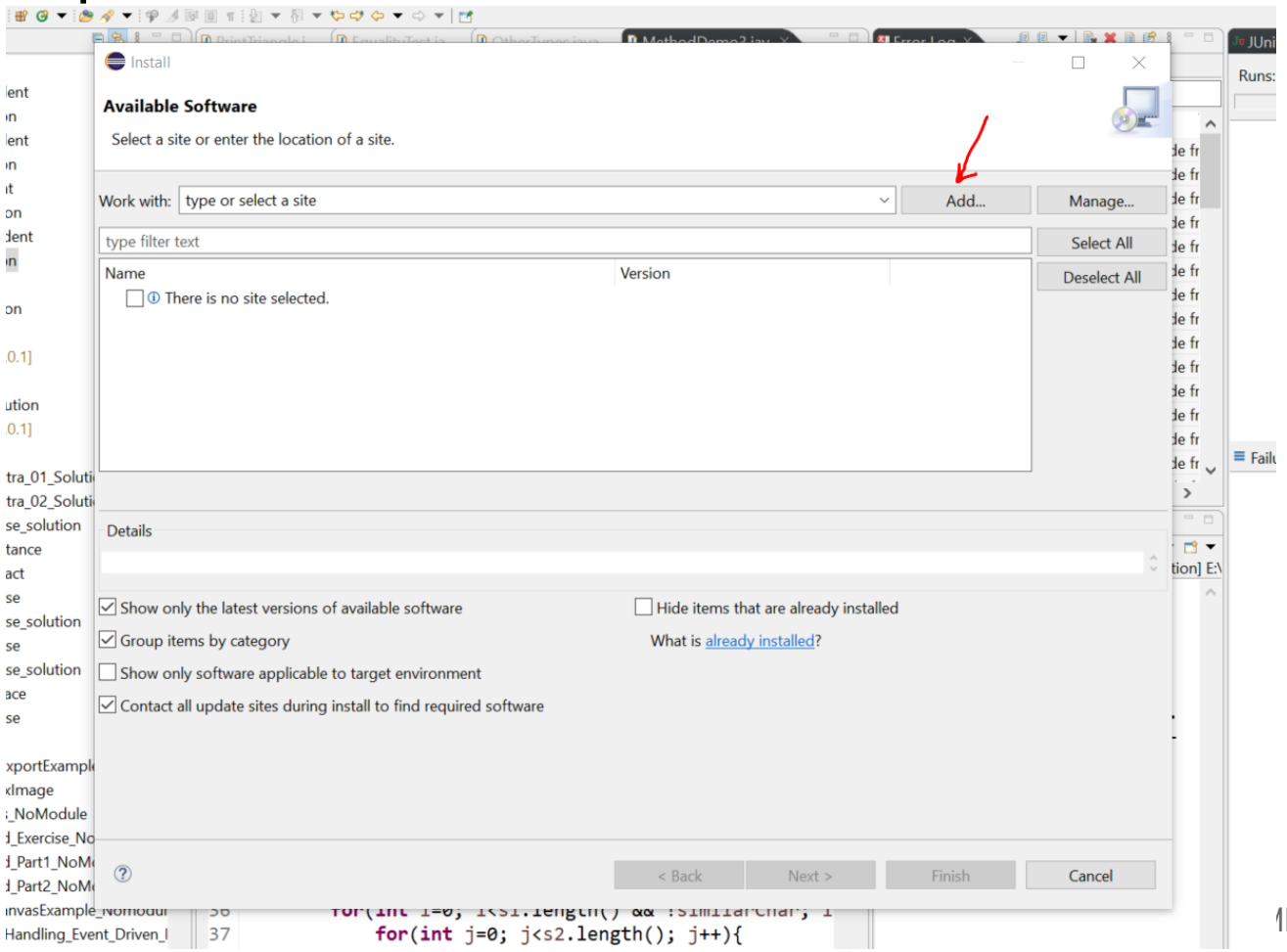
- Nesting is a relationship where one class is created inside another class (Inner class)



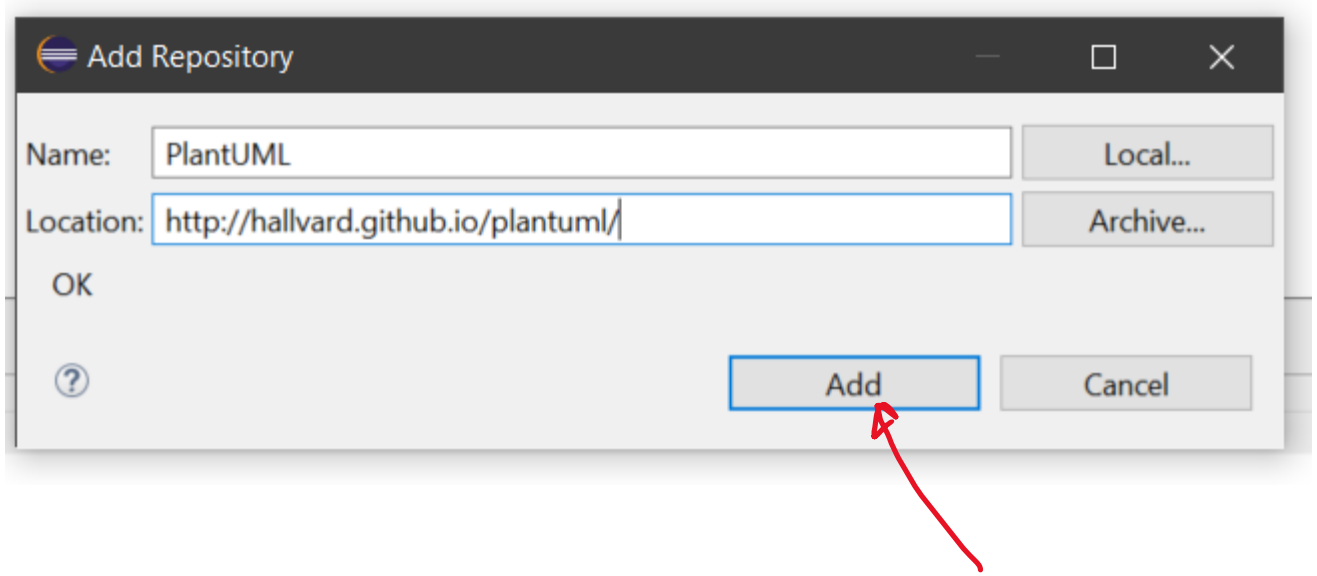

```
public class Freshman extends Student{
    final int studyYear = 1;

    class immerse{
        public void dosomething(){}
    }

    public static void drop(Subject a){

    }
}
```

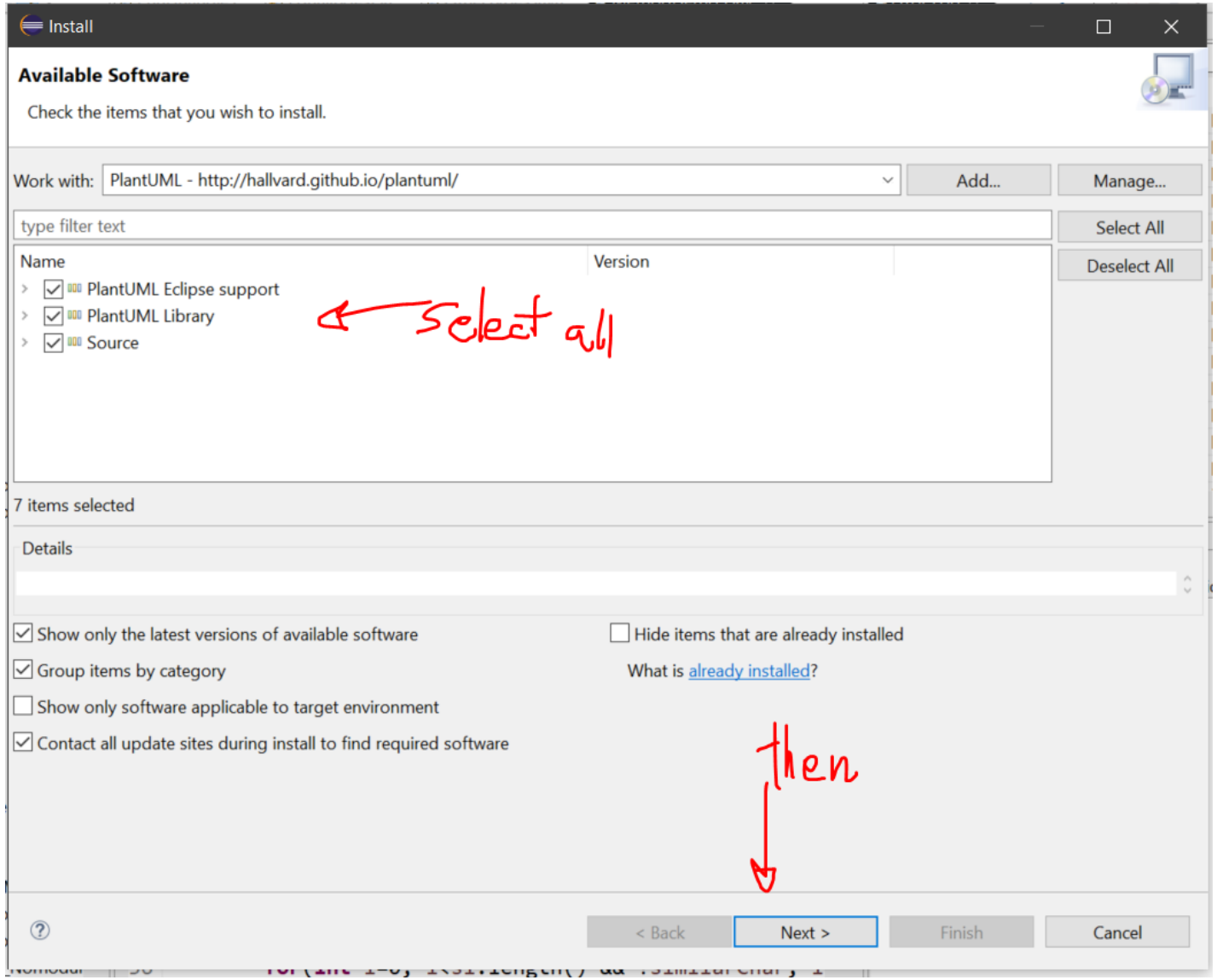
How to install PlantUML

- Help -> Install new software



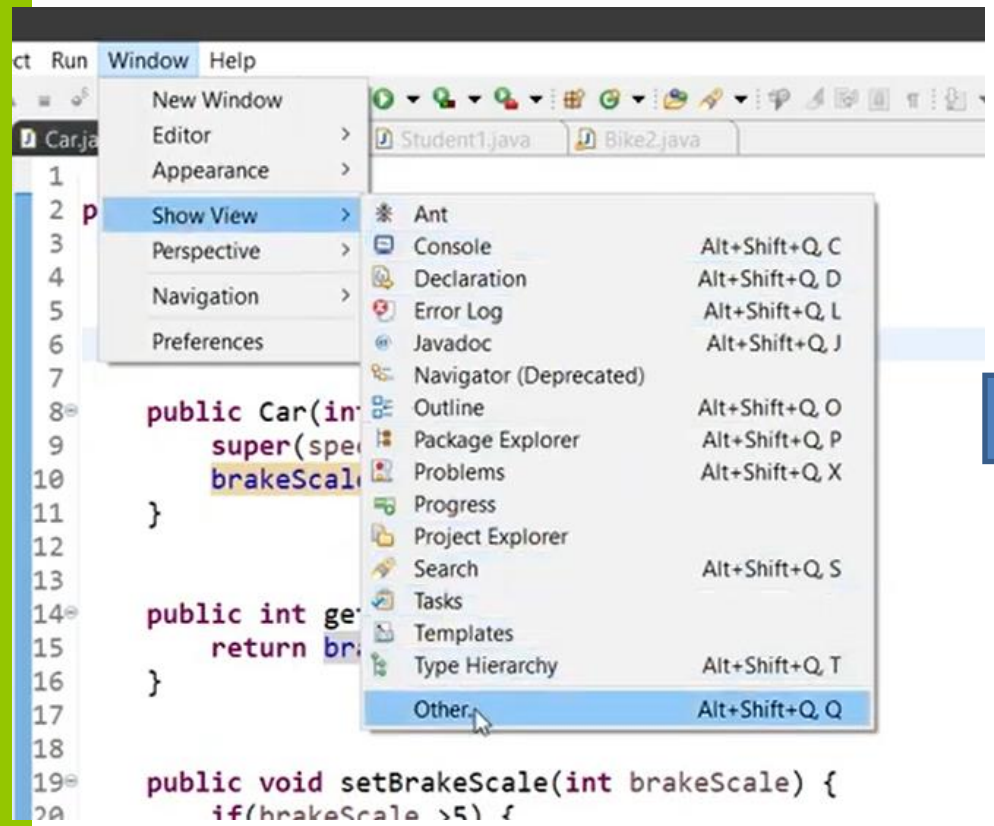
http://hallvard.github.io/plantuml/

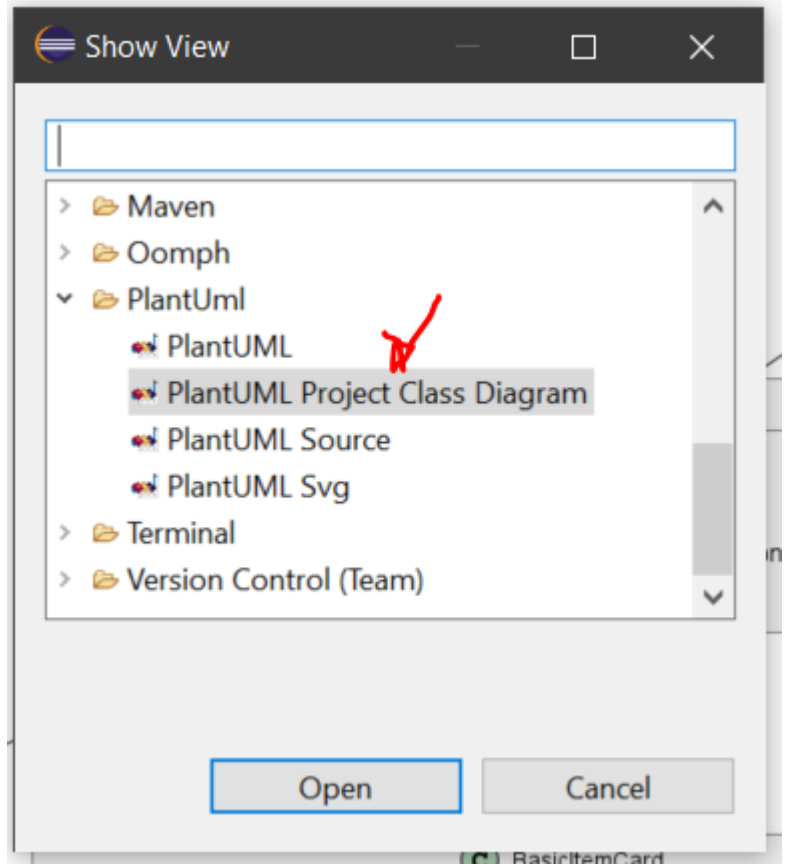




Accept everything and restart Eclipse when prompted.

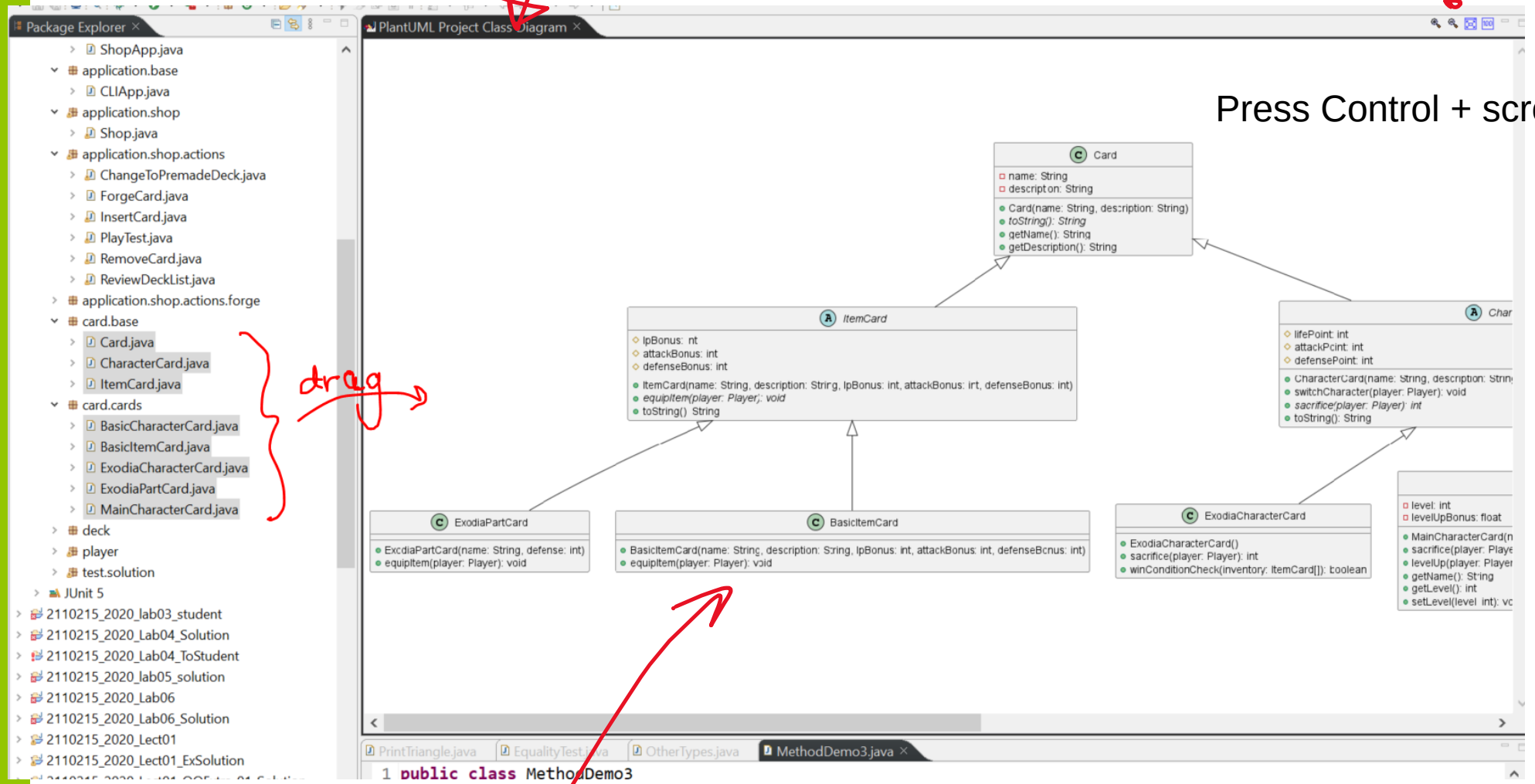
How to create UML Class diagram





new window appears

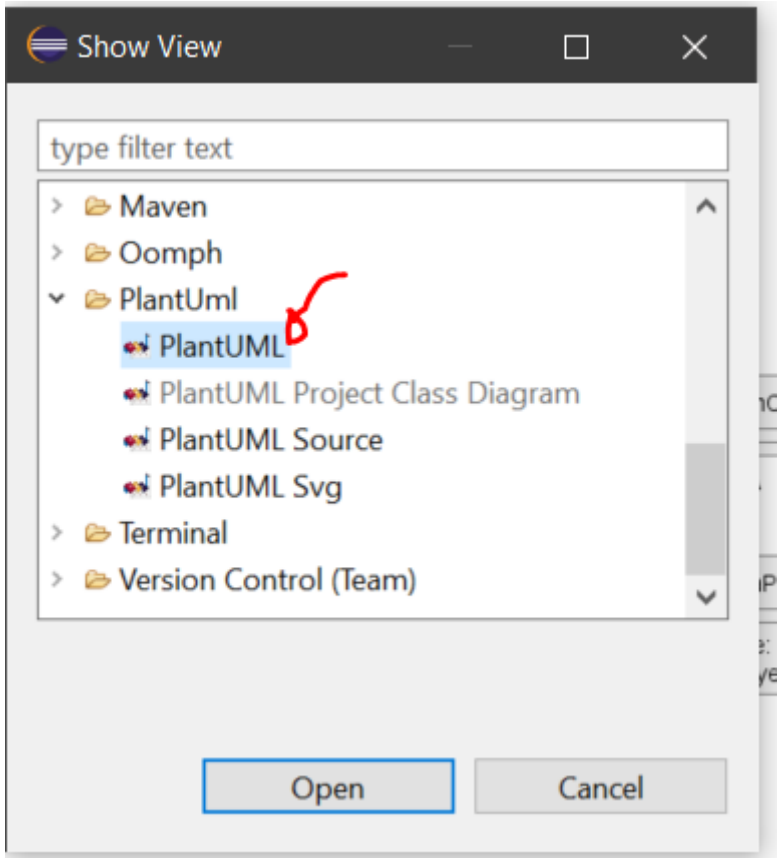
Zoom + snap

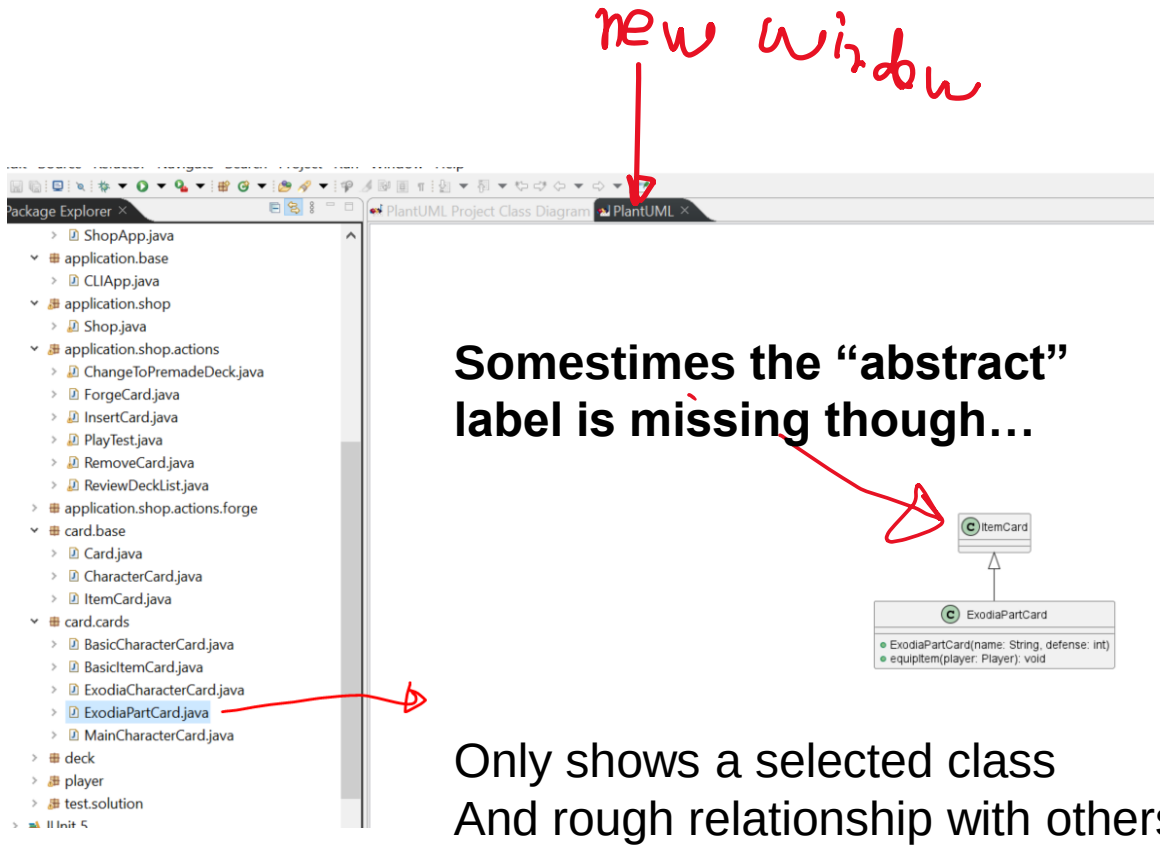


Press Control + scroll to zoom in-out

Right click in window to open picture export menu (must use “export”).

If you want to only look at one class only





Only shows a selected class
And rough relationship with others.

We can click on another class to change the diagram right away.