

# Unified Modeling Language (UML)

## 2110215 - Programming Methodology





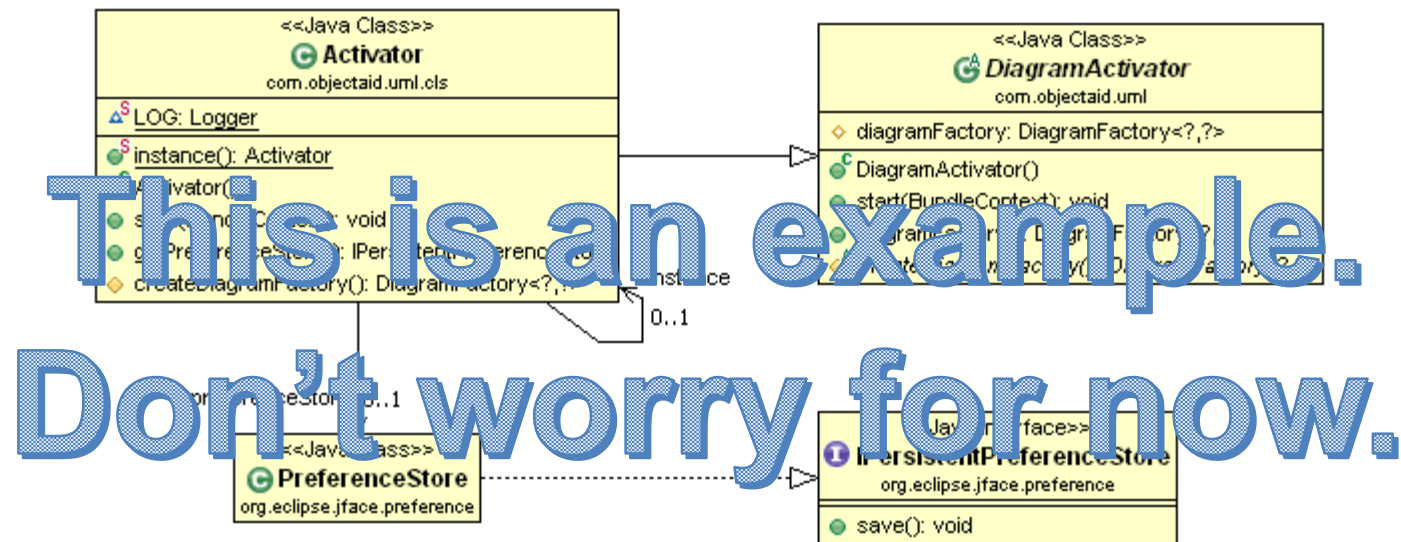
# What is UML?

- 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

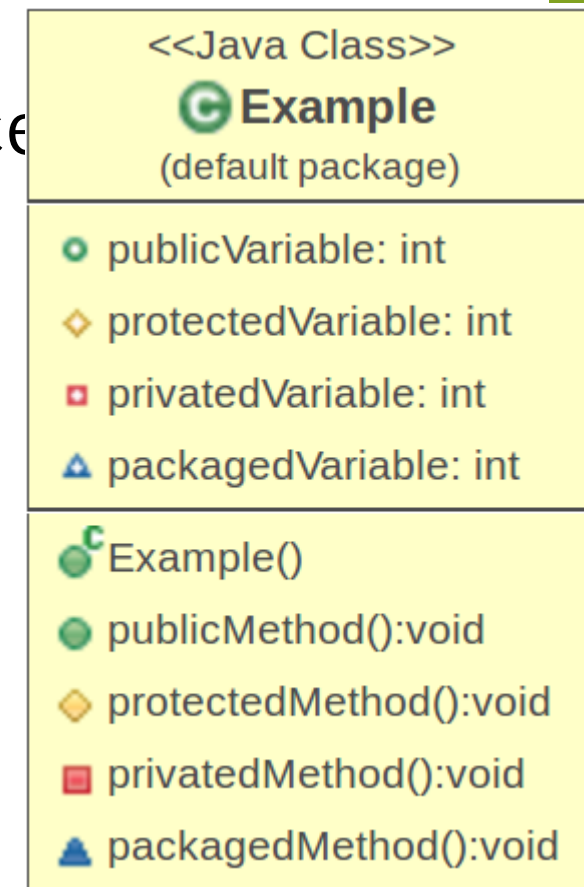




# Class Diagram

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

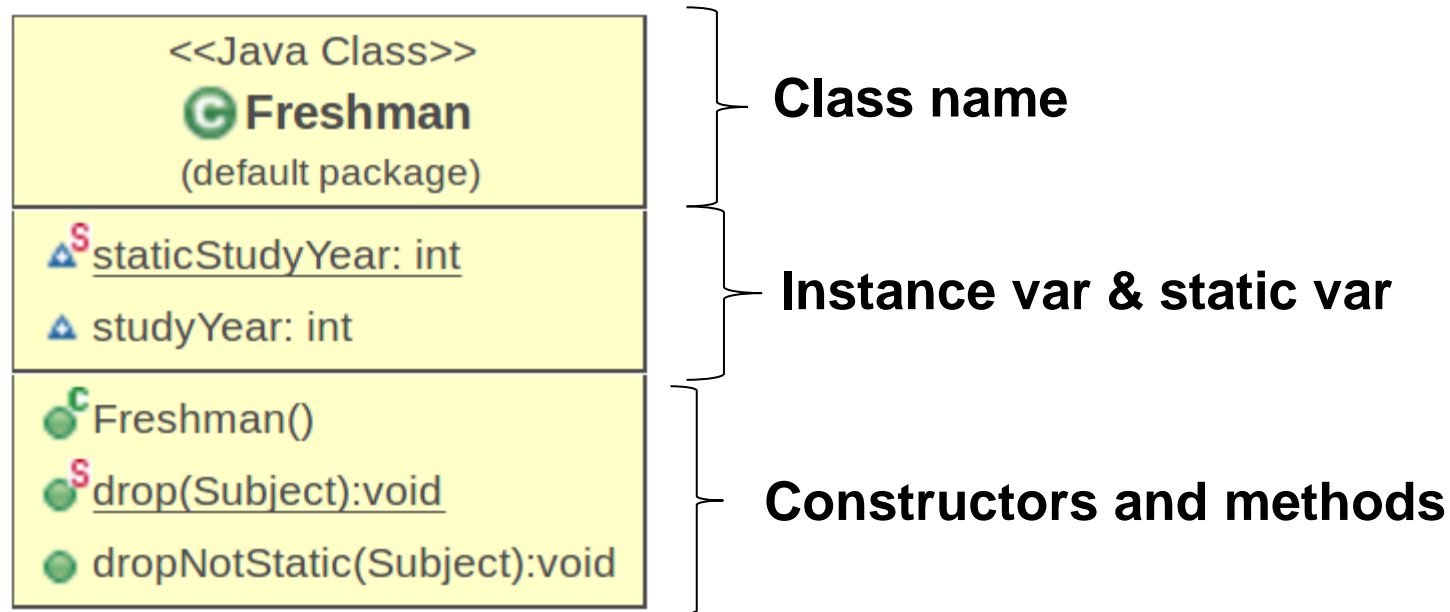
Visibility\Can be access by		Same Class	Same Package	Subclass	Different Package
public	●	Y	Y	Y	Y
protected	◆	Y	Y	Y	N
private	■	Y	N	N	N
package	▲	Y	Y	N	N





# Class Diagram

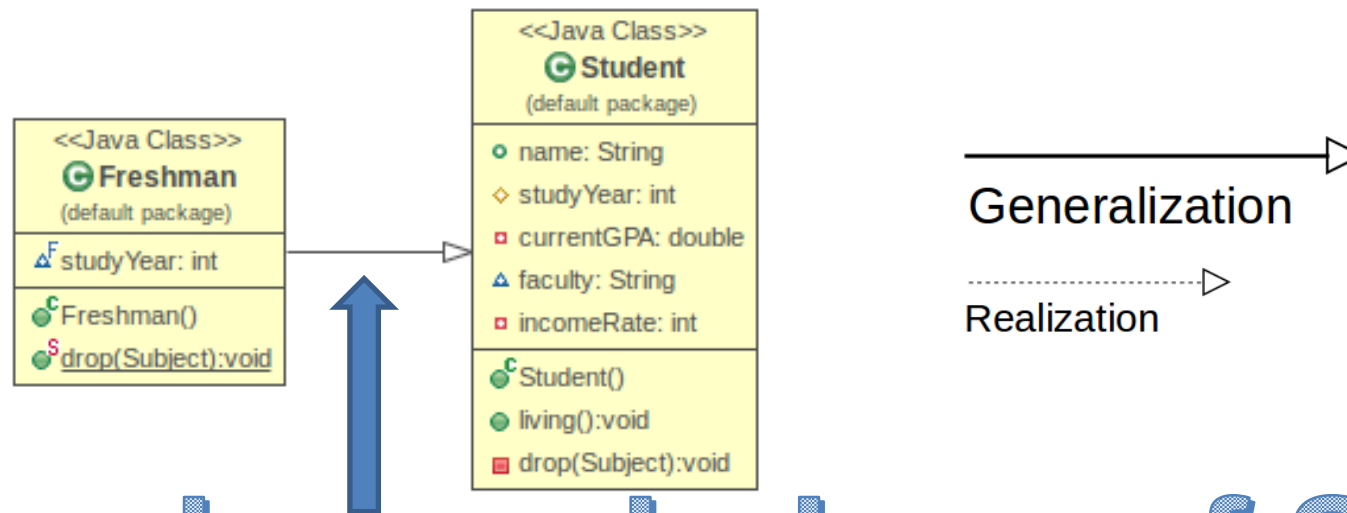
- Static is a keyword for variable or method. A static variable value will be shared through out all instance of the class. Static method can only access statics variable and call to other static methods only.





# Generalization (Lecture 2)

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

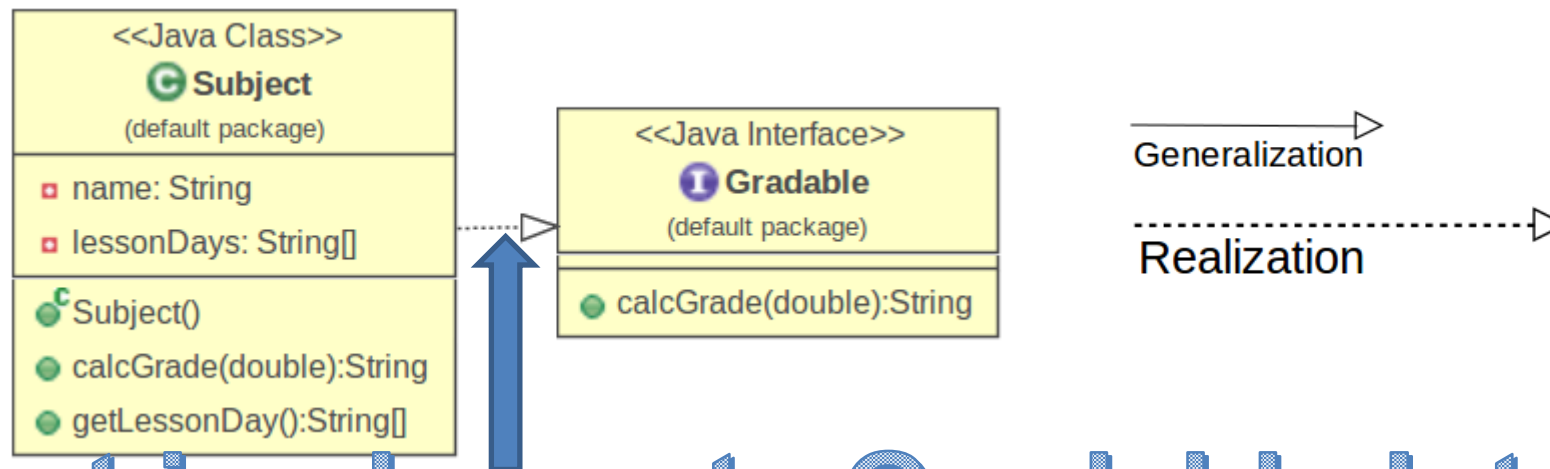


**Freshman is a subclass of Student**



# Realization (Lecture 3)

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

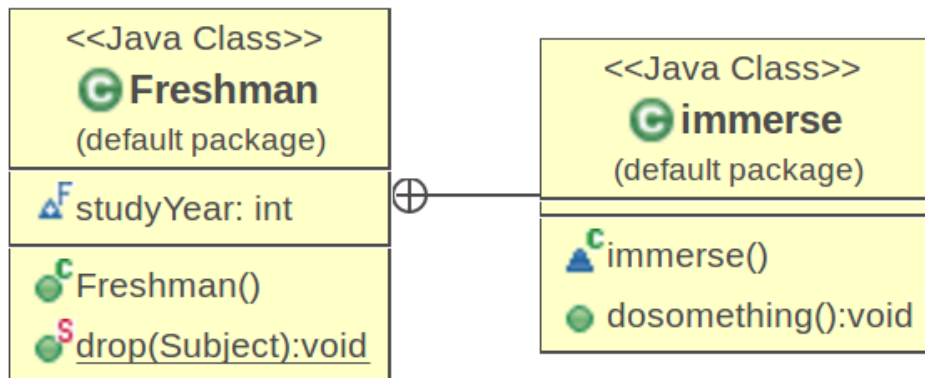


Subject implements Gradable Interface.  
We will study this later on.



# 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(Subjct a){
    }
}
```





# How to **install** Violet UML Editor

- <http://alexdp.free.fr/violetumleditor/page.php>



home	demo
<ul style="list-style-type: none"><li>▪ Home</li><li>▪ What is UML?</li><li>▪ Quick tour</li><li>▪ Features</li><li>▪ Wish List</li><li>▪ Demo</li><li>▪ Download</li><li>▪ Documentation<ul style="list-style-type: none"><li>▪ Installation</li><li>▪ User guide</li><li>▪ Developer guide</li><li>▪ Books</li></ul></li><li>▪ Authors</li><li>▪ Contact us</li></ul>	<h2>Download</h2> <p>Use this link to download Violet UML Editor from sourceforge : <a href="#">here</a></p>



# How to create UML Class diagram

- New->static view -> class diagram

