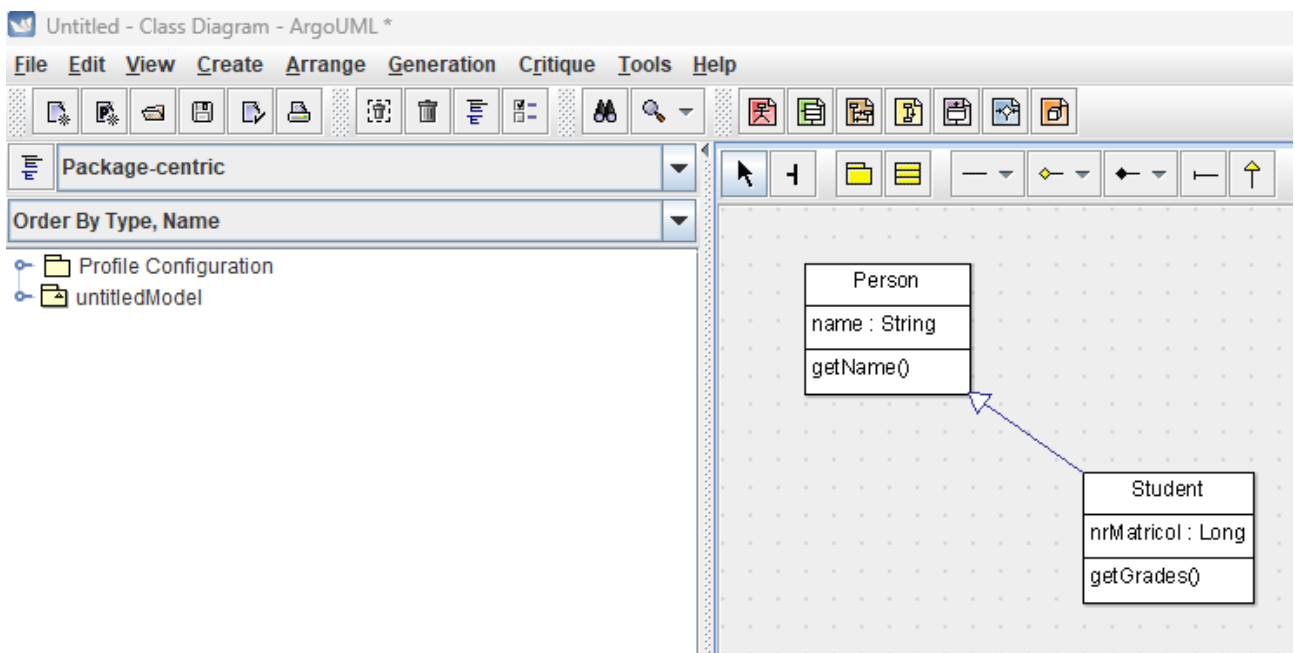# Software Engineering - Lab 4 Demo

Tools to have
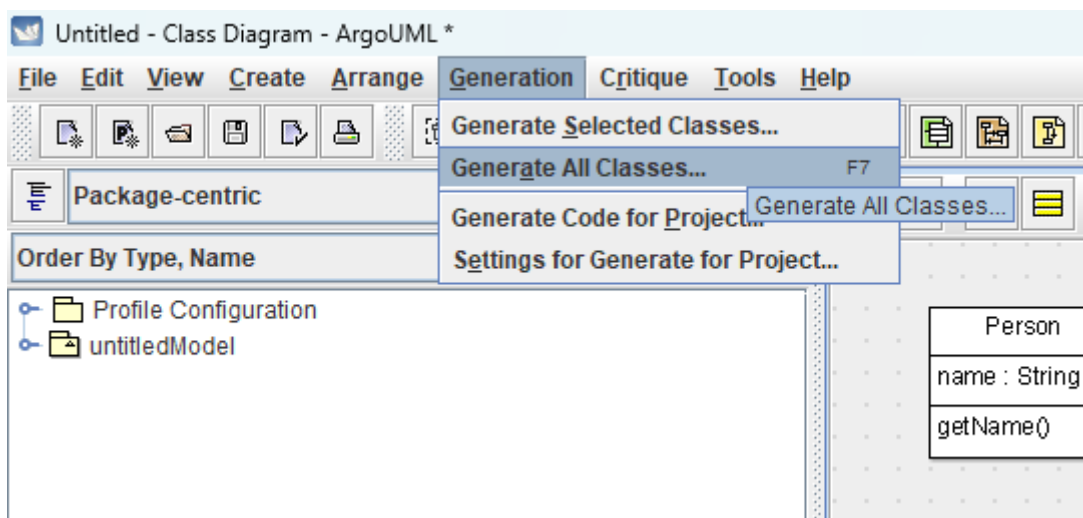- **ArgoUML** - link
- **DJ Decompiler** - link
- **Java** - link

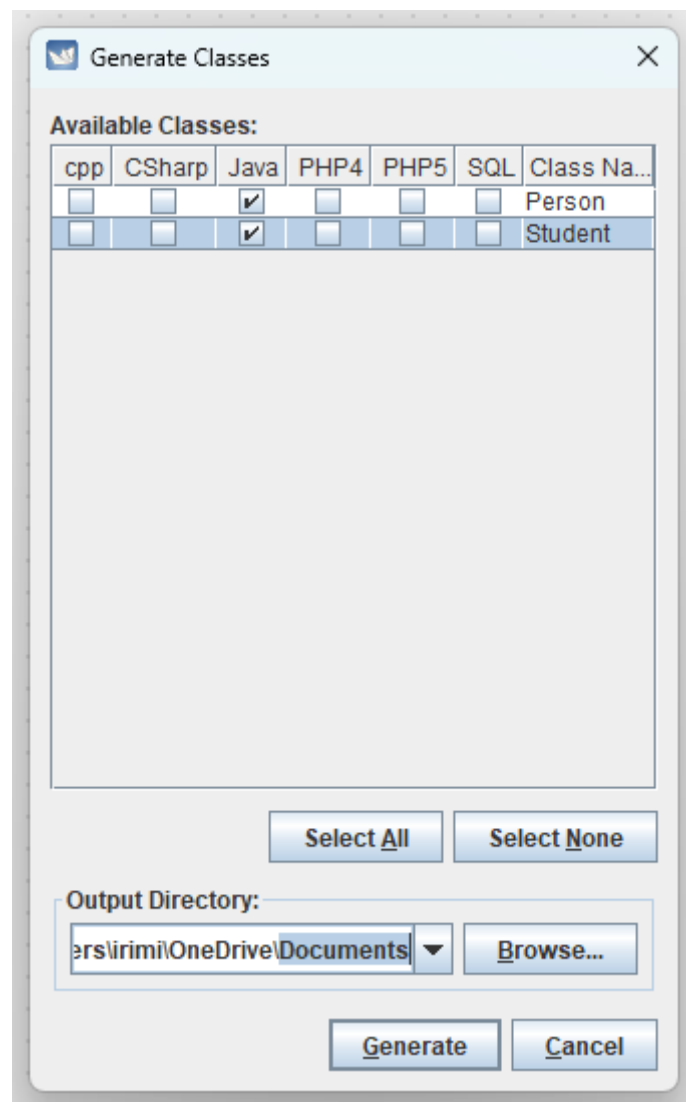1. Run ArgoUML using `**java -jar argouml.jar**`

2. Create your OOP model

2. Generate classes from the model

Generate Classes ✕

Available Classes:

cpp	CSharp	Java	PHP4	PHP5	SQL	Class Na...
☐	☐	✔	☐	☐	☐	Person
☐	☐	✔	☐	☐	☐	Student

Select All   Select None

Output Directory:

ers\irimi\OneDrive\Documents ▼   Browse...

Generate   Cancel

3. Now you have Java classes from the diagrams

ⓒ Person.java ✕   ⋮   ⓒ Student.java ✕

```
1 usage  1 inheritor              ⚠ 1 ^ ∨
1  public class Person {
2
3    public String name;
4
   no usages
5    public void getAge() {
6    }
7
8  }
```

```
no usages
1  public class Student extends Person {
2
   no usages
3    public Long nrMatricol;
4
   no usages
5    public void getGrades() {
6    }
7
8  }
```

4. Compile the files to obtain .class files

```
PS F:\Faculty\IP\Lab4> ls


    Directory: F:\Faculty\IP\Lab4


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        3/12/2023    3:51 PM                .idea
-a----        3/12/2023    3:51 PM            429 Lab4.iml
-a----        3/12/2023    3:34 PM             84 Person.java
-a----        3/12/2023    3:34 PM            107 Student.java


PS F:\Faculty\IP\Lab4> javac Person.java Student.java
PS F:\Faculty\IP\Lab4> ls


    Directory: F:\Faculty\IP\Lab4


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        3/12/2023    3:51 PM                .idea
-a----        3/12/2023    3:51 PM            429 Lab4.iml
-a----        3/12/2023    3:54 PM            270 Person.class
-a----        3/12/2023    3:34 PM             84 Person.java
-a----        3/12/2023    3:54 PM            269 Student.class
-a----        3/12/2023    3:34 PM            107 Student.java
```
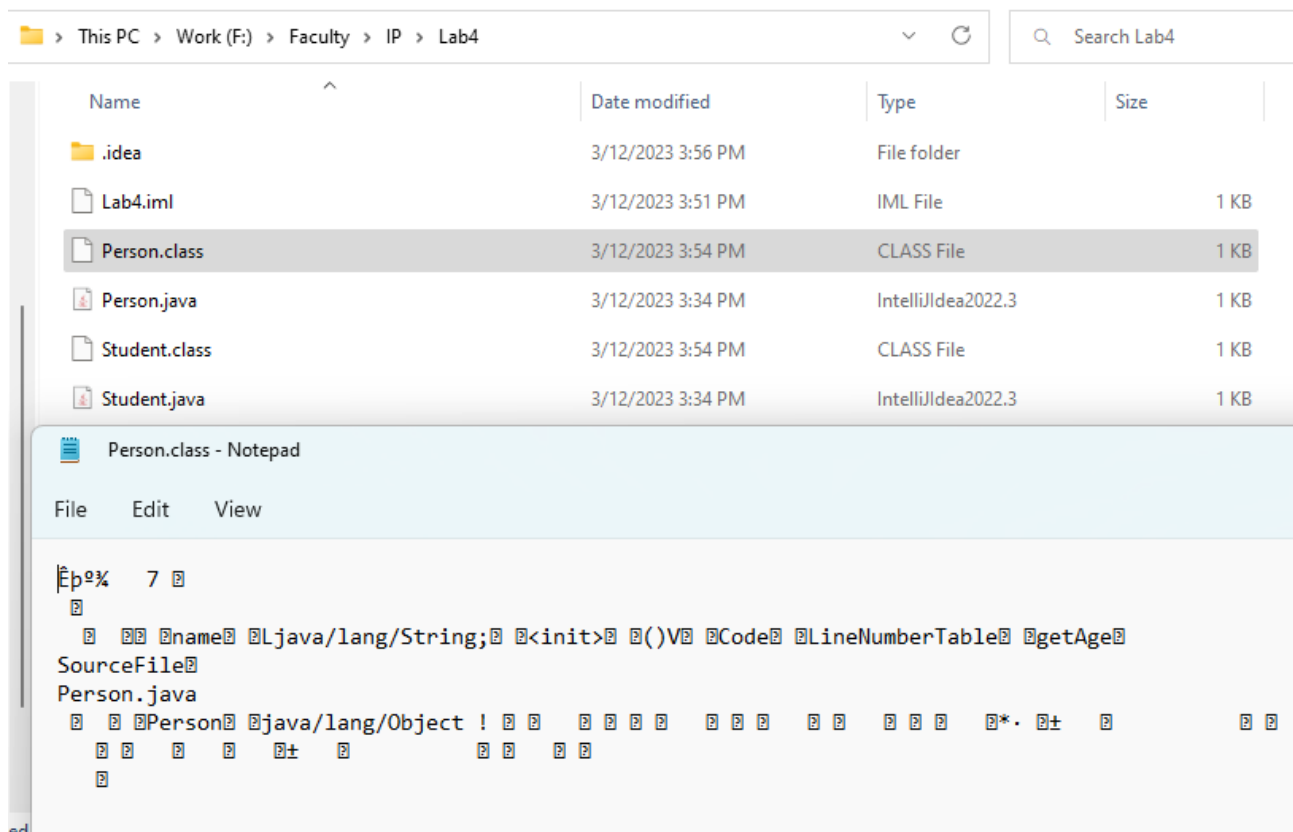
5. .class files are not human readable. Let's decompile them to .java classes again

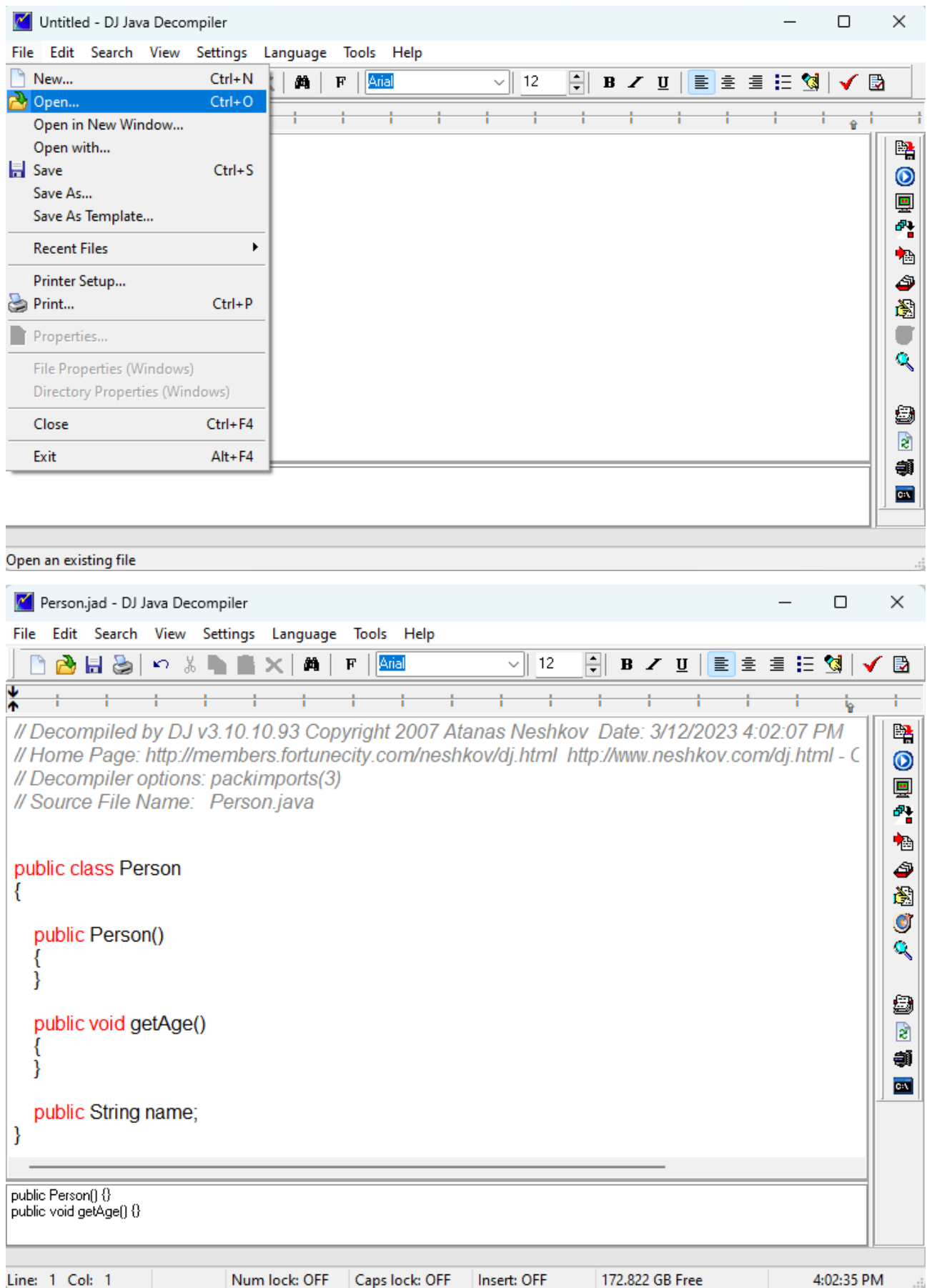| Name	Date modified	Type	Size
.idea	3/12/2023 3:56 PM	File folder	
Lab4.iml	3/12/2023 3:51 PM	IML File	1 KB
Person.class	3/12/2023 3:54 PM	CLASS File	1 KB
Person.java	3/12/2023 3:34 PM	IntelliJIdea2022.3	1 KB
Student.class	3/12/2023 3:54 PM	CLASS File	1 KB
Student.java	3/12/2023 3:34 PM	IntelliJIdea2022.3	1 KB

Person.class - Notepad

File   Edit   View

```
Êþº%   7 ▯
 ▯
  ▯  ▯▯ ▯name▯ ▯Ljava/lang/String;▯ ▯<init>▯ ▯()V▯ ▯Code▯ ▯LineNumberTable▯ ▯getAge▯
SourceFile▯
Person.java
 ▯ ▯ ▯Person▯ ▯java/lang/Object ! ▯ ▯   ▯ ▯ ▯ ▯   ▯ ▯ ▯   ▯ ▯   ▯ ▯ ▯    ▯*. ▯±   ▯           ▯ ▯
   ▯ ▯   ▯   ▯   ▯±   ▯          ▯ ▯   ▯ ▯
   ▯
```
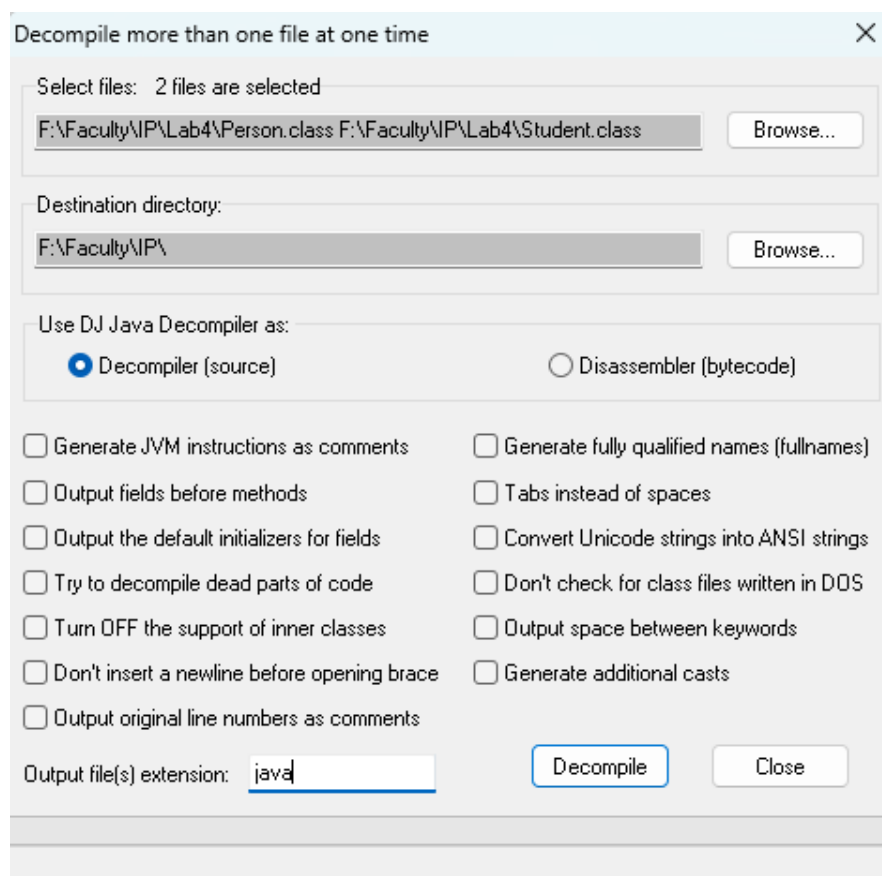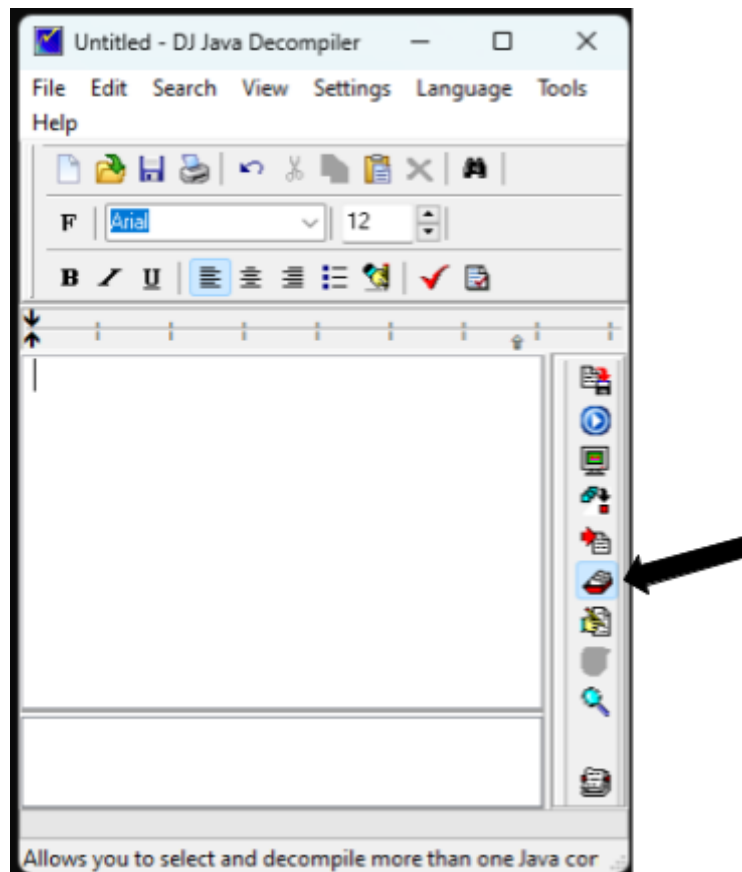
ed

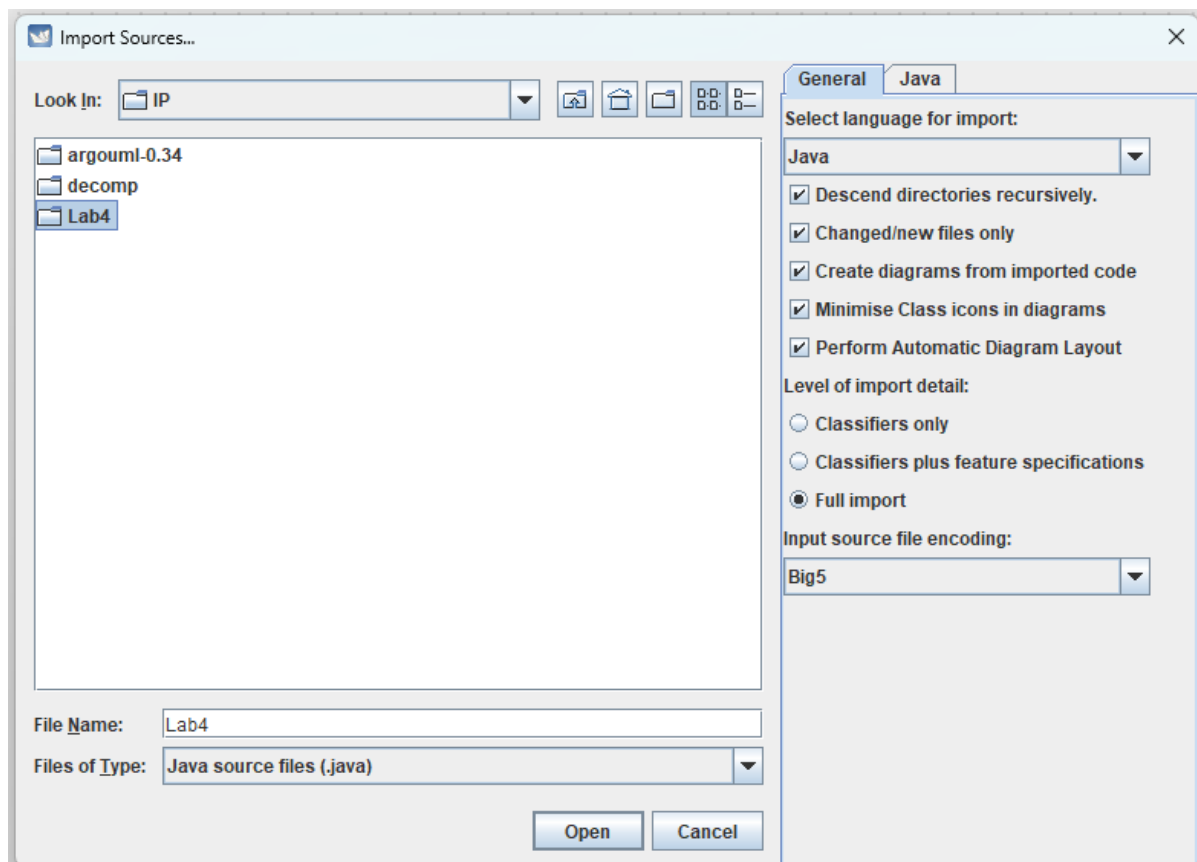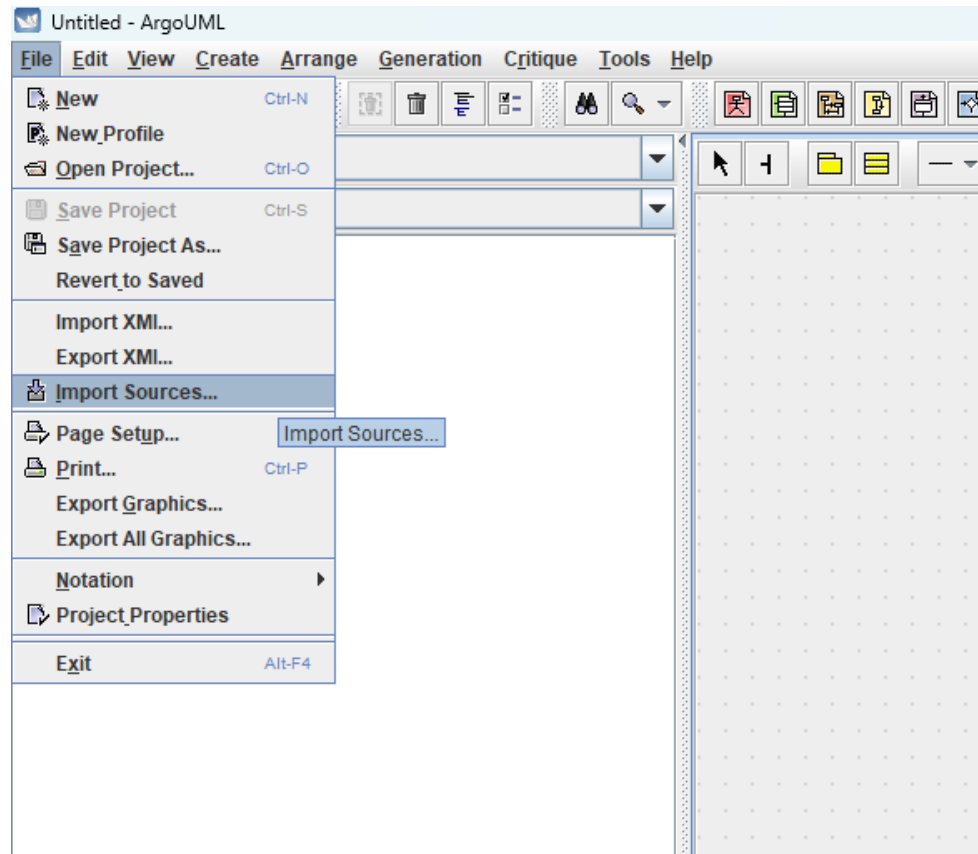## 6. With DJ Java Decompiler, Open the .class files

We can now see the initial code, decompiled from the .class files
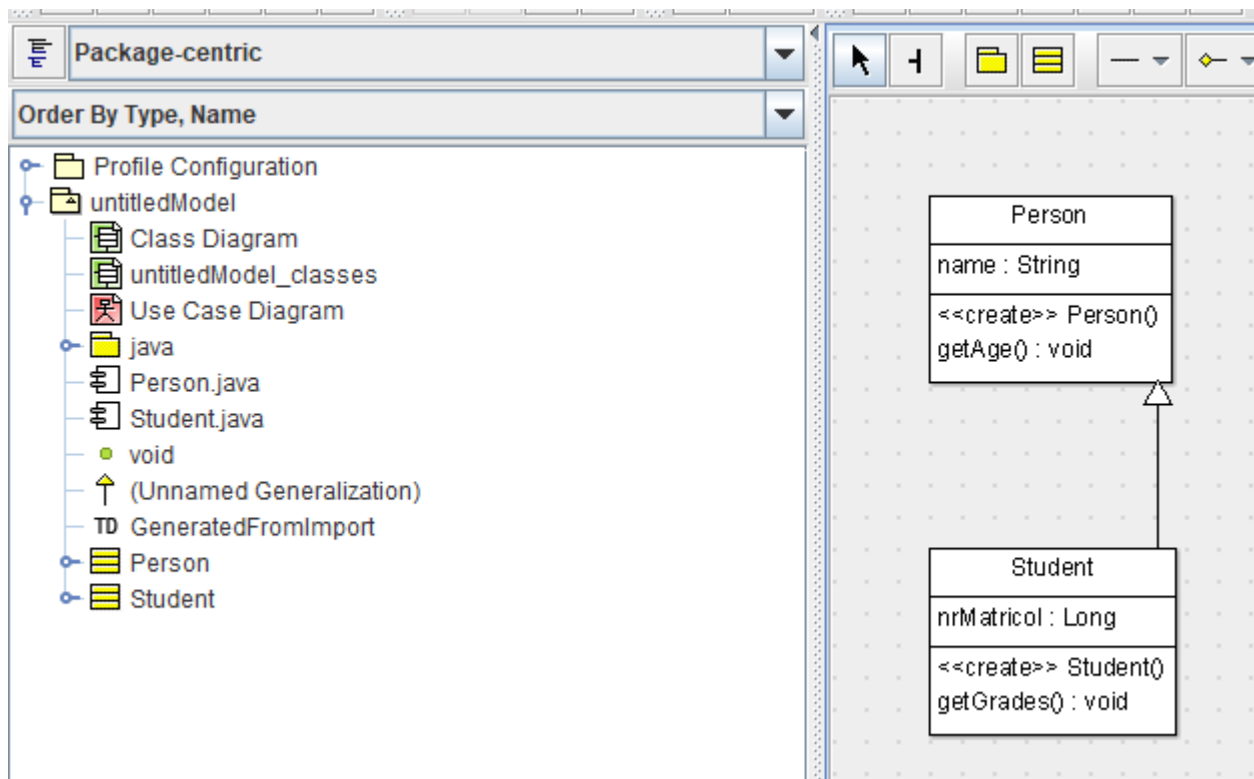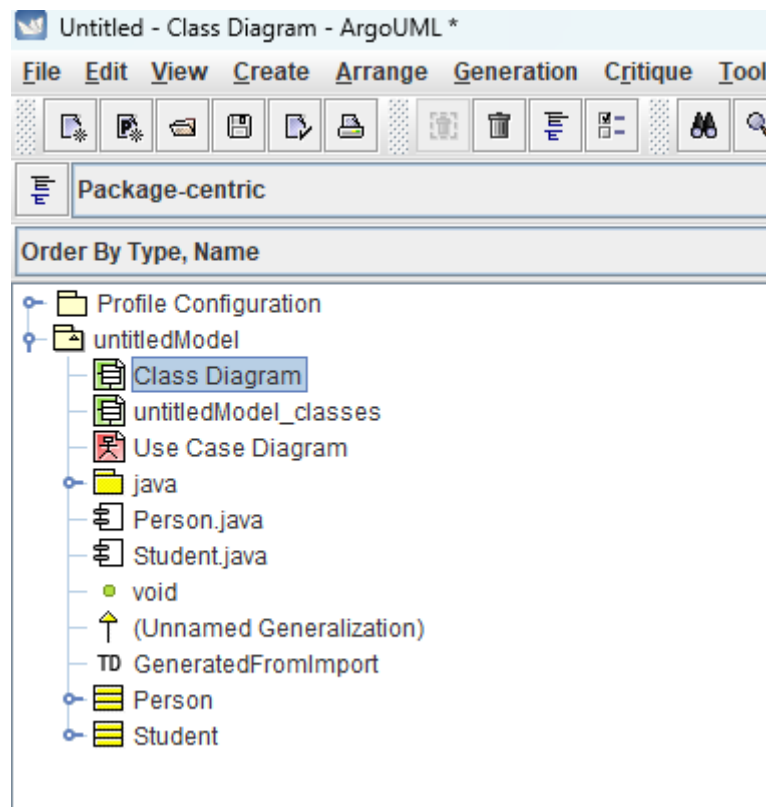
7. You can import multiple files at once

Select the files to import, the destination directory and the output extension as **'java'.** This way, we can recover our java code from the .class files.

8. Import the Java classes back into a **New project** from **ArgoUML**

9. Done. Enjoy your points for today because you finished the job!