

Lab: Reflection

Problems for exercises and homework for the ["Java OOP Advanced" course @ SoftUni](#).

You can check your solutions here: <https://judge.softuni.bg/Contests/526/Reflection-Lab>

1. Reflection

Import **"Reflection class"** to your **"src"** folder in your project. Try to use **reflection** and print some information about this class. Print everything on new line:

- **This class type**
- **Super class type**
- **All interfaces** that are implemented by this class
- **Instantiate object** using reflection and print it too

Don't change anything in **"Reflection class"**!

Solution

```
Class<Reflection> aClass = Reflection.class;
System.out.println(aClass);
System.out.println(aClass.getSuperclass());
Class[] interfaces = aClass.getInterfaces();
for (Class anInterface : interfaces) {
    System.out.println(anInterface);
}

//Reflection ref = aClass.newInstance();//Deprecated since Java 9
Reflection ref = aClass.getDeclaredConstructor().newInstance();
System.out.println(ref);
```

2. Getters and Setters

Using reflection to get all **"Reflection class"** methods. Then prepare an algorithm that will recognize, which methods are **getters** and **setters**. Sort each collection **alphabetically** by methods names. Print to console each **getter** on new line in format:

{name} will return {Return Type}

Then print all **setters** in format:

{name} and will set field of {Parameter Type}

Do this without changing anything in **"Reflection class"**

3. High Quality Mistakes

You are already expert of **High Quality Code**, so you know what kind of **access modifiers** must be set to members of class. Time for **revenge** has come. Now you have to check code produced by your **"Beautiful and Smart"** trainers in class **Reflection**. Check all **fields and methods access modifiers**. Sort each category of members **alphabetically**. Print on console all **mistakes** in format:

- Fields
 - **{fieldName} must be private!**
- Getters
 - **{methodName} have to be public!**
- Setters
 - **{methodName} have to be private!**

If you find more than **3 errors** go to your trainer and tell him "Your code is full of bugs. You don't understand encapsulation man"