

## What is the Java Reflection API?

- ▶ Class Manipulator?
- ▶ Used to manipulate classes and everything in a class
- ▶ Can slow down a program because the JVM can't optimize the code
- ▶ Can't be used with applets
- ▶ Should be used sparingly

```
1 public class UFOEnemyShip extends EnemyShip{
2
3     private String idcode = "100";
4
5     private String getPrivate() { return "How did you get this"; }
6
7     private String getOtherprivate(int thisInt, String thatString)
8
9         return "How did you get here " + thisInt + " " + thatString;
10    }
11
12
13    public UFOEnemyShip(int number, String randString){
14
15        System.out.println("You sent: " + number + " " + randString);
16
17    }
18 }
```

```
1 import java.lang.reflect.Modifier;
2
3 public class TestingReflection {
4
5     public static void main(String[] args){
6
7         Class reflectClass = UFOEnemyShip.class;
8
9         String className = reflectClass.getName();
10
11         System.out.print(className + "\n");
12
13         int classModifier = reflectClass.getModifiers();
14
15         // isAbstract, isFinal, isInterface, isPrivate, isProtected
16         // isStatic, isStrict, isSynchronized, isVolatile
17
18         System.out.print(Modifier.isPublic(classModifier) + "\n");
19
20     }
21 }
22 }
```

```
23     Class classSuper = reflectClass.getSuperclass();
24
25     System.out.print(classSuper.getName() + "\n");
26
27     Method[] classMethods = reflectClass.getMethods();
28
29     for(Method method : classMethods){
30
31         System.out.print("Method Name: " + method.getName() + "\n");
32
33         if(method.getName().startsWith("get")){
34
35             System.out.print("Getter Method");
36
37         } else if(method.getName().startsWith("set")){
38
39             System.out.print("Setter Method");
40
41         }
42
43     }
44 }
```