



Learning Object-Oriented Programming and Design with TDD

About Types and Lookup

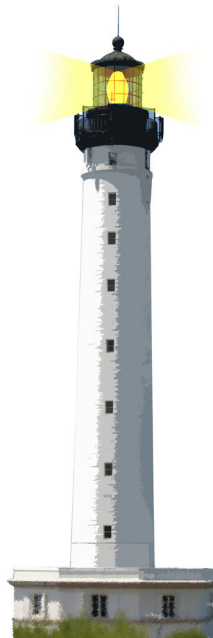
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<http://www.pharo.org>

WXSYY



Remember: Static vs. Dynamic Types

```
A a = new B();
```

- The static type of variable `a` is `A` i.e., the statically declared class to which it belongs.
 - The static type never changes.
- The dynamic type of `a` is `B` i.e., the class of the object currently bound to `a`.
 - The dynamic type may change throughout the program.



Two simple classes

```
public class Machine {  
    public void accept(){System.out.println("accept");}  
    public class Robot extends Machine {  
        public void accept(){System.out.println("accept");}  
        public void agree(){System.out.println("agree");}  
    }  
}
```



Valid and invalid

```
Robot r = new Robot();  
r.accept();  
r.agree();
```

```
Machine m = r;  
m.accept();
```

```
m.agree(); >>> BREAK!  
((Machine)r).agree(); >>> BREAK!
```

- A typechecker rejects programs that would execute without problems to make sure that it can find execution that would fail.



What you should know

- Static types are used to identify at compile time which methods to lookup
- Lookup will look for such method at runtime



A course by Stéphane Ducasse
<http://stephane.ducasse.free.fr>

Reusing some parts of the Pharo Mooc by

Damien Cassou, Stéphane Ducasse, Luc Fabresse
<http://mooc.pharo.org>



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