Advanced Object-Oriented Design

Customization degree of hooks

Class vs. instance hooks S.Ducasse, L. Fabresse, G. Polito, and P. Tesone





http://www.pharo.org

Goals

- Thinking about hooks
- Granularity of hooks: class vs instance creation
- Do we customize instance creation or not?
- Customisation of instance creation



Example: Introducing a hook

```
CHInterpreter >> visit...: arg
scope := CHClassScope new xxx
...
scope
```



Extract a class

```
CHInterpreter >> visit...: arg
```

```
scope := self classScopeClass new xxx
```

•••

```
scope
```

```
CHInterpreter >> classScopeClass
^ CHClassScope
```



A subclass can push a different class

CHInterpreter2 >> classScopeClass ^ MyClassScope

• Ok, it works!



Black box parametrization

Object << CHInterpreter
slots: {#classScopeClass};</pre>

With an instance variable and a setter we can also get black box pametrization

CHInterpreter new classScopeClass: myClassScope; yourself





- What if we have a more complex instantiation?
- And we want to encapsulate it and let the extender change it?
- self classScopeClass new xxx is not at a good granularity

```
CHInterpreter >> visit...
scope := self classScopeClass new xxx
...
scope
```



Instance creation

```
CHInterpreter >> visit...: arg
```

```
scope := self newClassScope.
```

•••

```
scope
```

CHInterpreter >> newClassScope

```
^ self newClassScope xxx
```





If you can only pass a class

- you cannot customize and access extra protocols
- you will have to do circumvoluted tricks (wrapping)



Passing object as context

```
CHInterpreter >> visit...: arg
```

```
scope := self newClassScopeNewFor: arg
```

•••

scope

CHInterpreter >> newClassScopeNewFor: arg

^ self newClassScope doSomethingWith: arg

- When we pass arg, we give the class the possibility to customise instantiation.
- Subclasses can customize/extend doSomethingWith:



Conclusion

- Class hooks are nice
- But think also about others hooks



Produced as part of the course on http://www.fun-mooc.fr

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