Please note that the slides published AFTER the lectures and workshops are the official slides and are the ones that should be used for revision.

COMP2013
Software Maintenance

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Workshop 2 (with answers)

CW1 Release; IDEs + Java 9/10/11 additions; Maintaining the ZooApp

Peer-Olaf Siebers

University of Nottingham
UK | CHINA | MALAYSIA

Week 2 Organisation

- Lecture 2:
  - Going through more advanced Java topics
    - Java Collections framework
    - Implementation of object
- Lab 2:
  - Working further on the ZooApp example
  - Looking at packages
- Workshop 2:
  - CW1 Release
  - IDEs + Java 9/10/11 additions
  - Maintaining the ZooApp (basic maintenance)

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eclipse and intelli

Useful Website to Learn More about the IDEs

- TutorialsPoint: Eclipse (+ Java)
  - https://www.tutorialspoint.com/eclipse/index.htm

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- TutorialsPoint: IntelliJ
  - https://www.tutorialspoint.com/intellij_idea

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- JetBrains: IntelliJ Video Tutorials
  - https://www.jetbrains.com/idea/documentation/

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what's new in Jav 0/11

What's new in Java 9/10/11

- Java 9
  - Modules
  - jShell (read-evaluate-print loop tool)
- Java 10
  - Local-Variable Type Inference
  - Enhancements for garbage collection and compilation
- Java 11
  - Removal of JavaFX, which is now available as a standalone technology

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Notes from Demonstration

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maintainin management soft

Basic Maintenance

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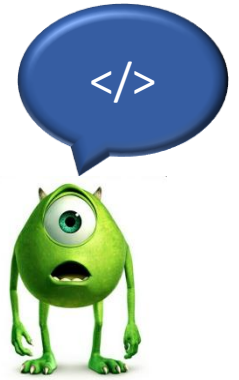
Basic Maintenance



- What would you propose how we should get started?

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- Use Eclipse

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- Use IntelliJ

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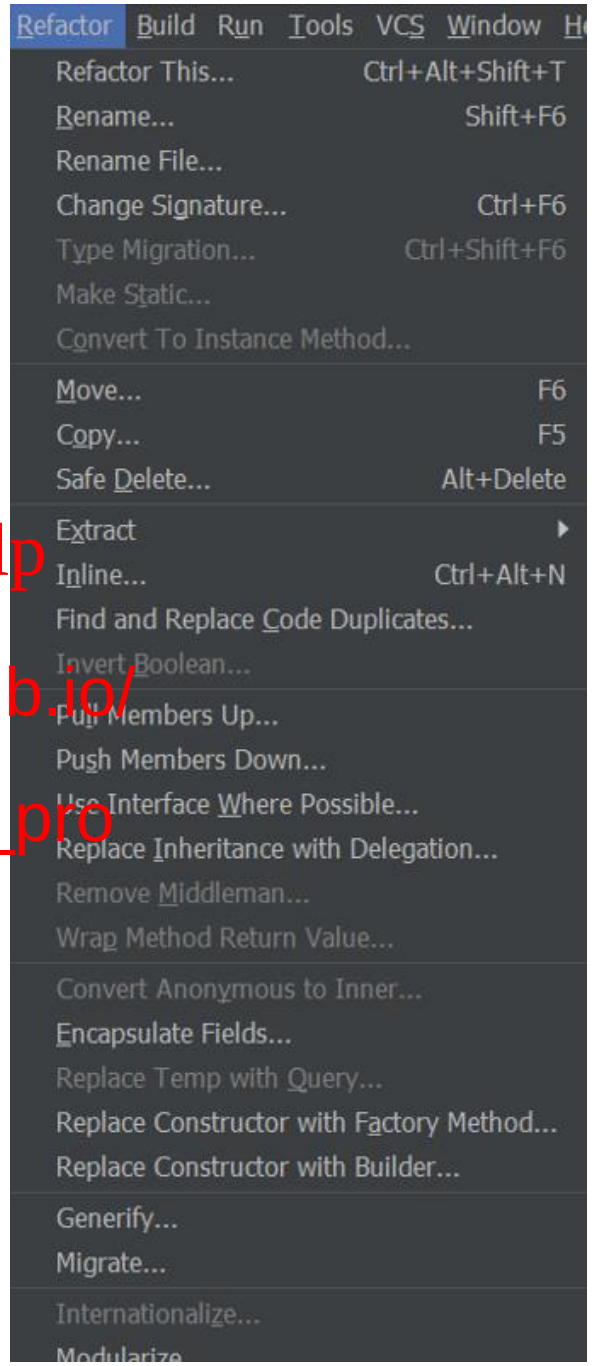

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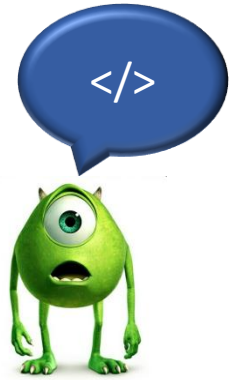

- Dividing all classes into packages
  - Why is this useful?
- Making all animal subclasses abstract
  - They should not be instanti
- Removing redundant code
  - "buildNewEnclosure()" is not required any mo
  - Remove some setters (to gain control)
- Commenting code and producing Javadocs

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- Packages are used in Java in order to prevent naming conflicts, to control access, to make searching/locating and usage of classes, interfaces, enumerations and annotations easier, etc.

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Remark: This and the following screenshots are based on an earlier version of ZooApp

Basic Maintenance

- Javadocs

```
/**
* xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.
* <p>
* xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
* @param  variable          Description.
* @return                   Description.
*/
```

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@author John Smith	Class, Interface, Enum
@version version	Class, Interface, Enum
@since since-text	Class, Interface, Enum, Field, Method
@see reference	Class, Interface, Enum, Field, Method
@param name description	Method
@return description	Method
@deprecated description	Class, Interface, Enum, Field, Method

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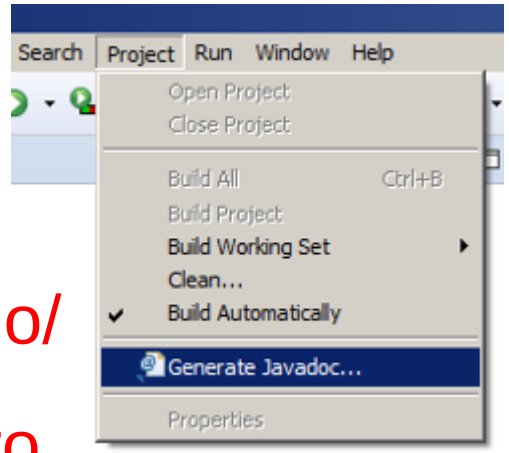

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And finally ...

- Two things we have not dealt with which are vital for SWM
  - Version control (e.g. GIT Repository)
  - Unit testing

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