Reverse Engineering with Omondo

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Version 1.0 – March 2005

Contenuti

- Creation of diagrams
- Editing diagrams
- Workarounds
  - Undetected associations
- Diagram export

Sample project

- Package esempio
  - Three classes

```
package esempio;
import java.util.LinkedList;

public class Home {
  LinkedList sectionList;
  Altro altroOggetto;
}
```

```
package esempio;

public class Altro {
}
```

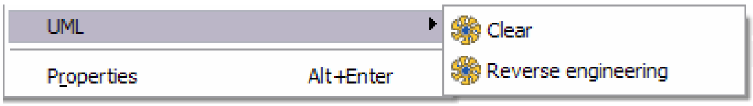
```
package esempio;

public class Section {
  String nome;
}
```

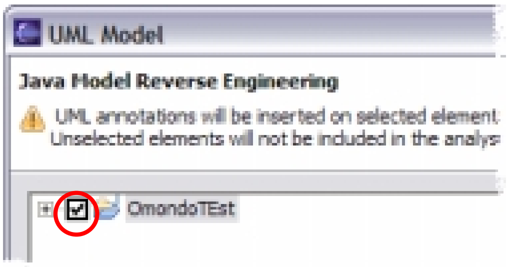
Creation of Diagrams

- Start Omondo “Reverse Engineering” feature
  - Analizes the source code and generates UML informations
- Create the required diagrams
  - Insert the classes
  - Show the associations
  - Select the methods and attributes to be shown

Reverse Engineering

- Start Omondo Reverse Engineering
  - Right-click on the project
  - UML
    - Reverse Engineering
- Select the whole project




UML Model

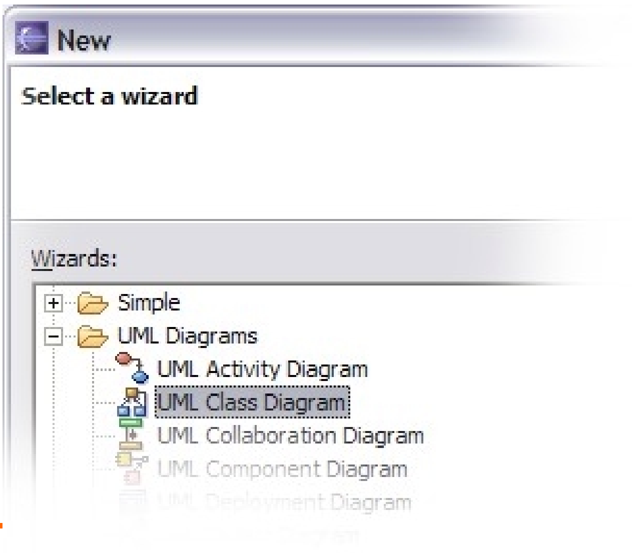
Java Model Reverse Engineering

UML annotations will be inserted on selected element. Unselected elements will not be included in the analys

☑ OmondoTEst

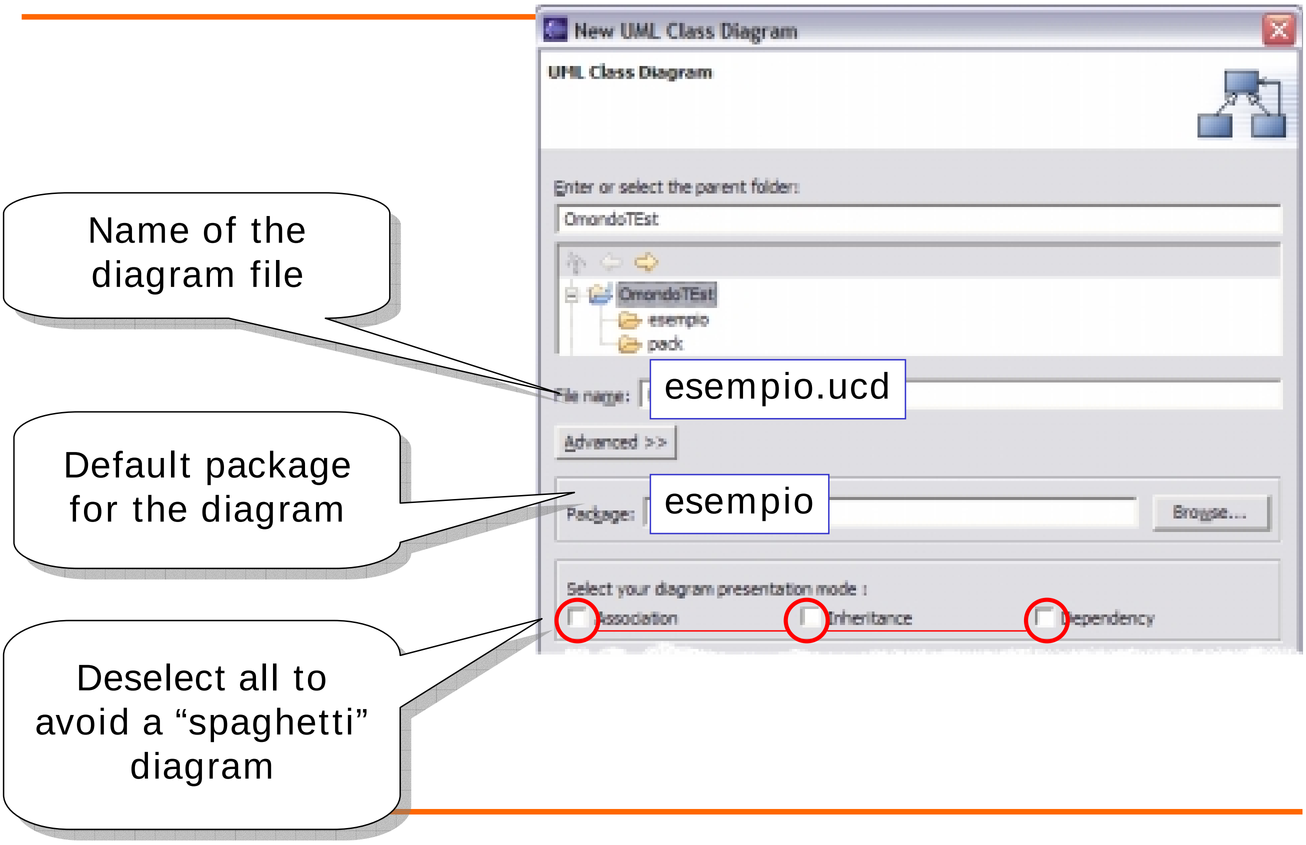
Create a new Class Diagram

- New
  - Other…
- UML Class Diagram


New

Select a wizard

Class diagram Parameters



New UML Class Diagram

UML Class Diagram

Enter or select the parent folder: OmondoTEst

- OmondoTEst
  - esempio
  - pack

File name: esempio.ucd

Advanced >>

Package: esempio Browse...

Select your diagram presentation mode :

☐ Association ☐ Inheritance ☐ Dependency

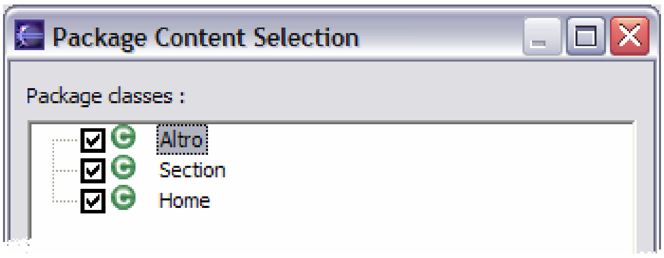
Name of the diagram file

Default package for the diagram

Deselect all to avoid a “spaghetti” diagram

Diagram contents

- Select the classes from the default package to be shown in the diagram
  - Later you can add some classes or hide some others



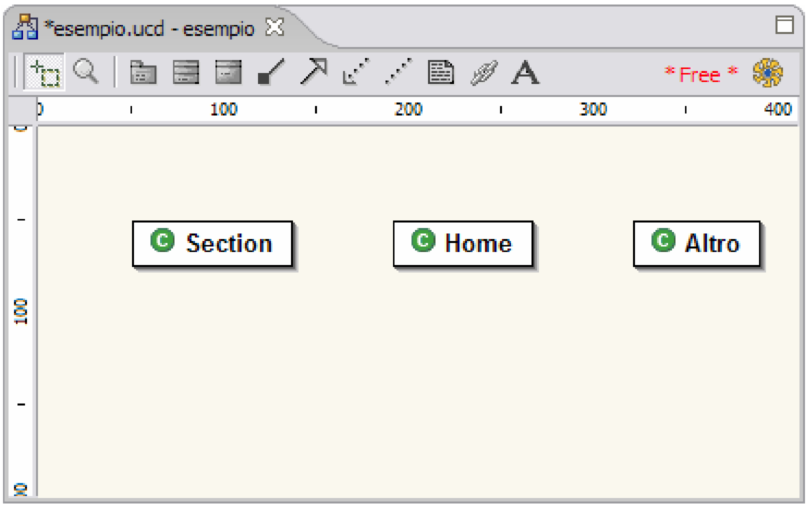
Package Content Selection

Package classes :

- ☑ Altro
- ☑ Section
- ☑ Home

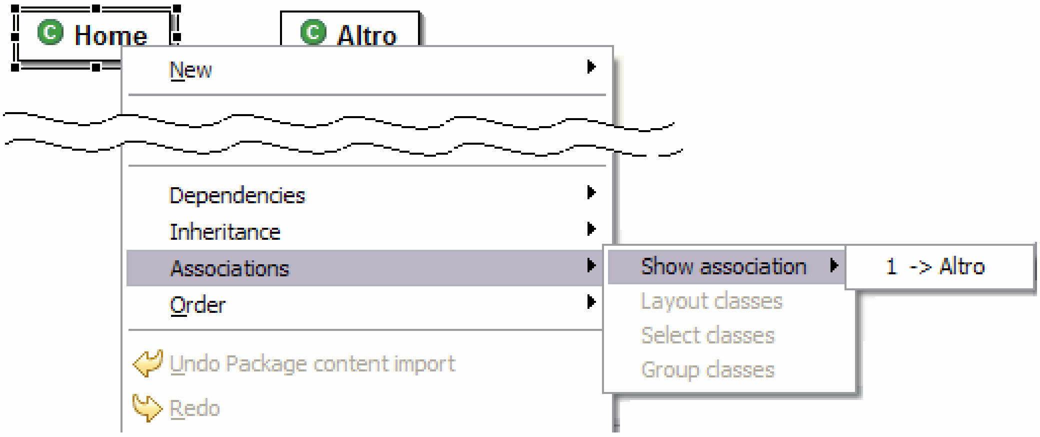
Diagram

- The resulting diagram has no associations



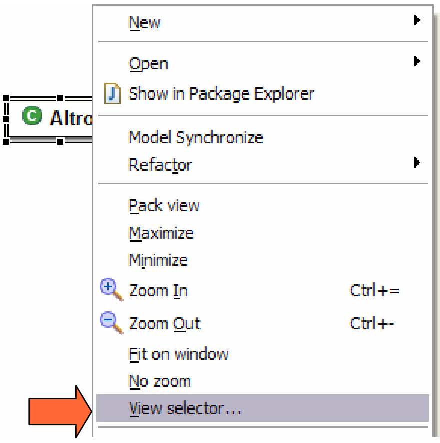
Show Associations

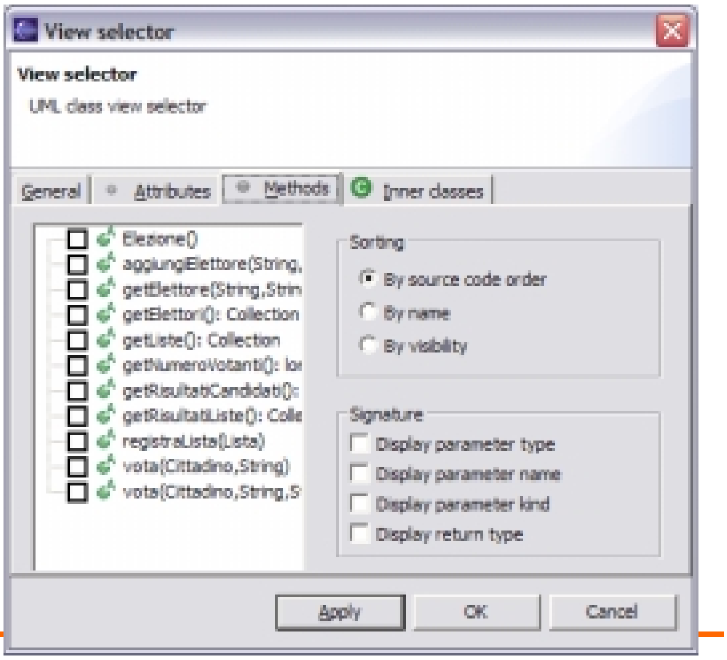
- Right-click on a class
  - Associations; Show associations
  - Select the association to show



Select the Members to Show

- Right-click on a class
  - View selector…





☐ Elezione()
☐ aggiungiElettore(String,
☐ getElettore(String,Strin
☐ getElettori(): Collection
☐ getListe(): Collection
☐ getNumeroVotanti(): lo
☐ getRisultatiCandidati():
☐ getRisultatiListe(): Colle
☐ registraLista(Lista)
☐ vota(Cittadino,String)
☐ vota(Cittadino,String,S

Sorting
● By source code order
○ By name
○ By visibility

Signature
☐ Display parameter type
☐ Display parameter name
☐ Display parameter kind
☐ Display return type

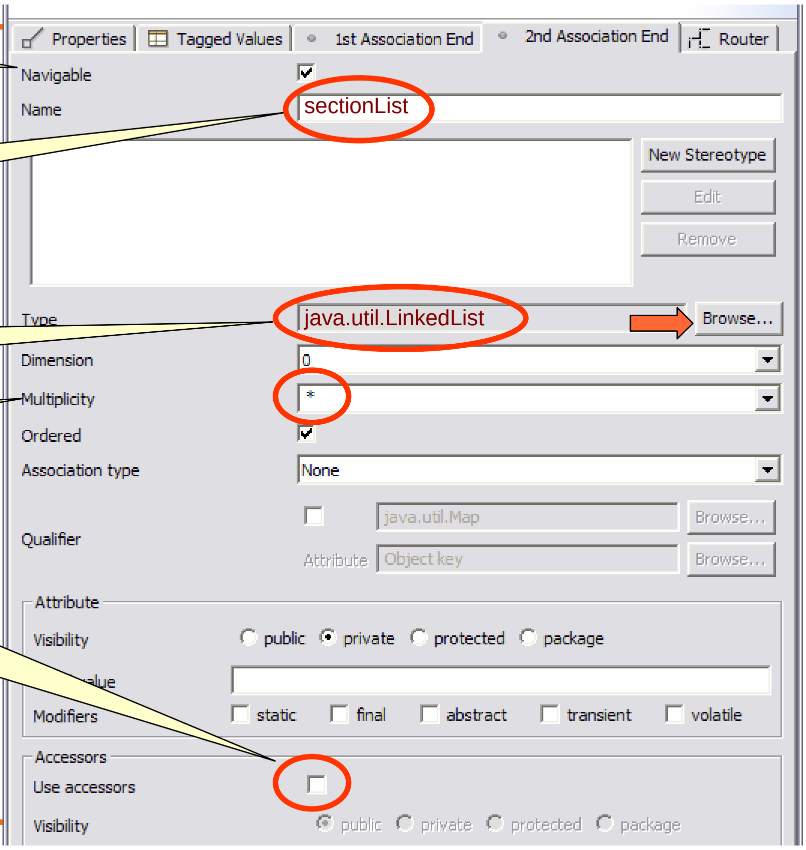
Undetected Associations

- Omondo is not able to detect some kinds of associations
  - Typically those based on collections
  - Es. **`LinkedList sectionList;`**
- We need to redefine graphically the association.

Associations - StepByStep

- (Re)create graphically the association
  - Save the diagram
  - An error is found: duplicate attribute
- Remove (comment) the old attribute
  - Save the class
  - The association disappears from the diagram
- Show the association as described before

Association



Navigable ☑

Name sectionList

Type java.util.LinkedList

Dimension 0

Multiplicity *

Ordered ☑

Association type None

Qualifier □ java.util.Map

Attribute Object key

Attribute

Visibility ○ public ● private ○ protected ○ package

...alue

Modifiers □ static □ final □ abstract □ transient □ volatile

Accessors

Use accessors □

Visibility ● public ○ private ○ protected ○ package

Navigable on in this direction

Name = name of the attribute

Type = type of the attribute

Multiplicity= *

Avoids a plethora of methods

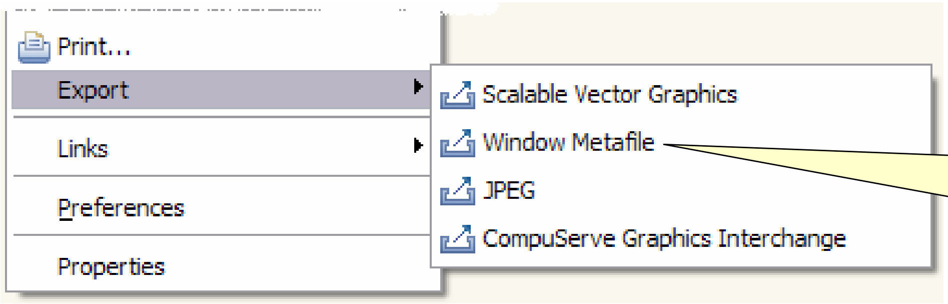
Result

- A new attribute with the same name and type is inserted in the class
  - We need to remove the old attribute

```
  //LinkedList sectionList
//…
  /**
  *
  * @uml.property name=“sectionList"
  * @uml.associationEnd inverse= …
  */
  private LinkedList sectionList;
```

Export a Diagram

- Deselect anything
  - by clicking on the diagram background
- Right-click on the background



Not enabled in Omondo free