

Professional Quality Graph Layout for GEF

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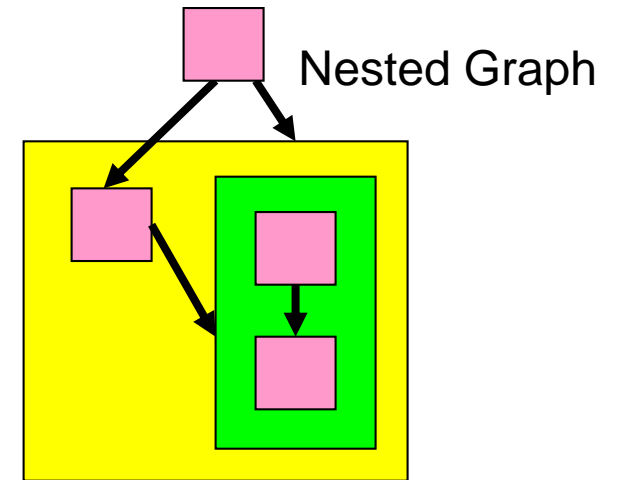
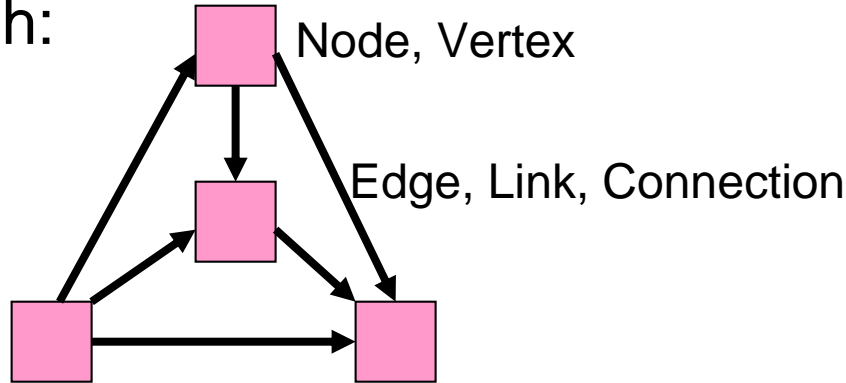
Overview



- What is Graph Layout
- What is the Eclipse Graphical Editing Framework
- The GEF Graph Layout Architecture
- Layout in the View
- Layout in the Model
- The ILOG JViews Graph Layout Architecture
- Professional Graph Layout
- Demos

What is Graph Layout

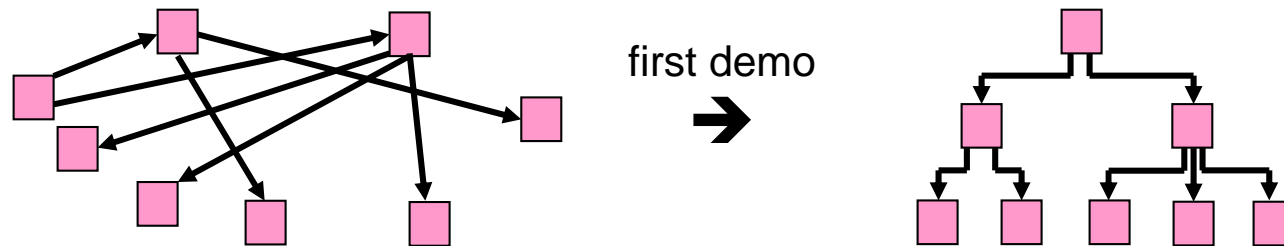
- Graph:



- Graph Layout:

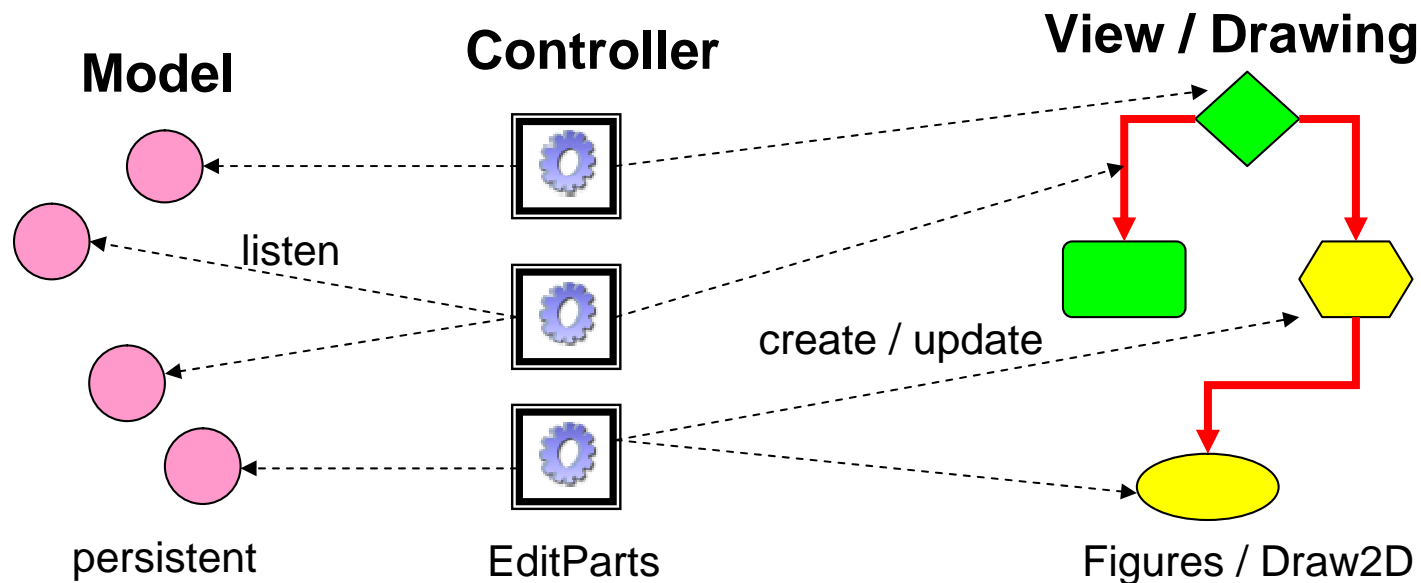
Compute Automatically Node Positions and Edge Routings

- ◆ Aesthetically: symmetry, avoid crossings and overlaps, ...
- ◆ Domain specific: Pert Chart layout, Org Chart layout, ...

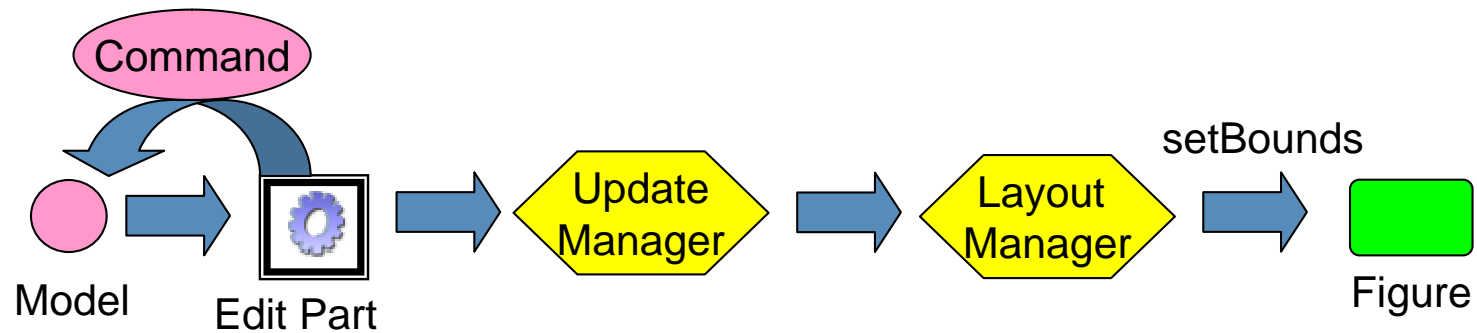


Eclipse Graphical Editing Framework

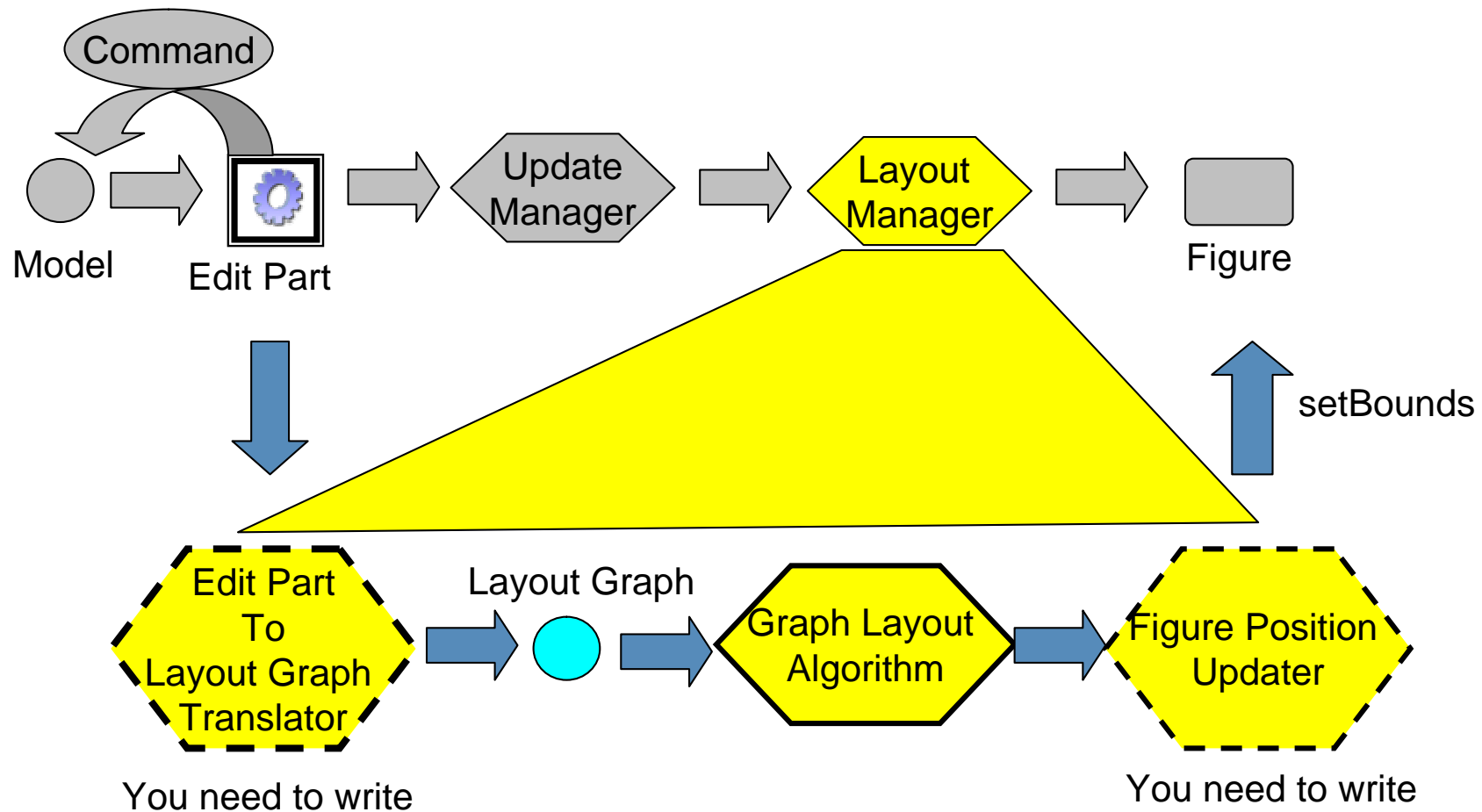
- GEF = Graphical Editing Framework
 - ◆ Eclipse Tools Project, by Randy Hudson, e.a.
 - ◆ <http://www.eclipse.org/gef/>
- MVC Toolset for building Graph Editors



- GEF Graph Layout Algorithms are part of Draw2D



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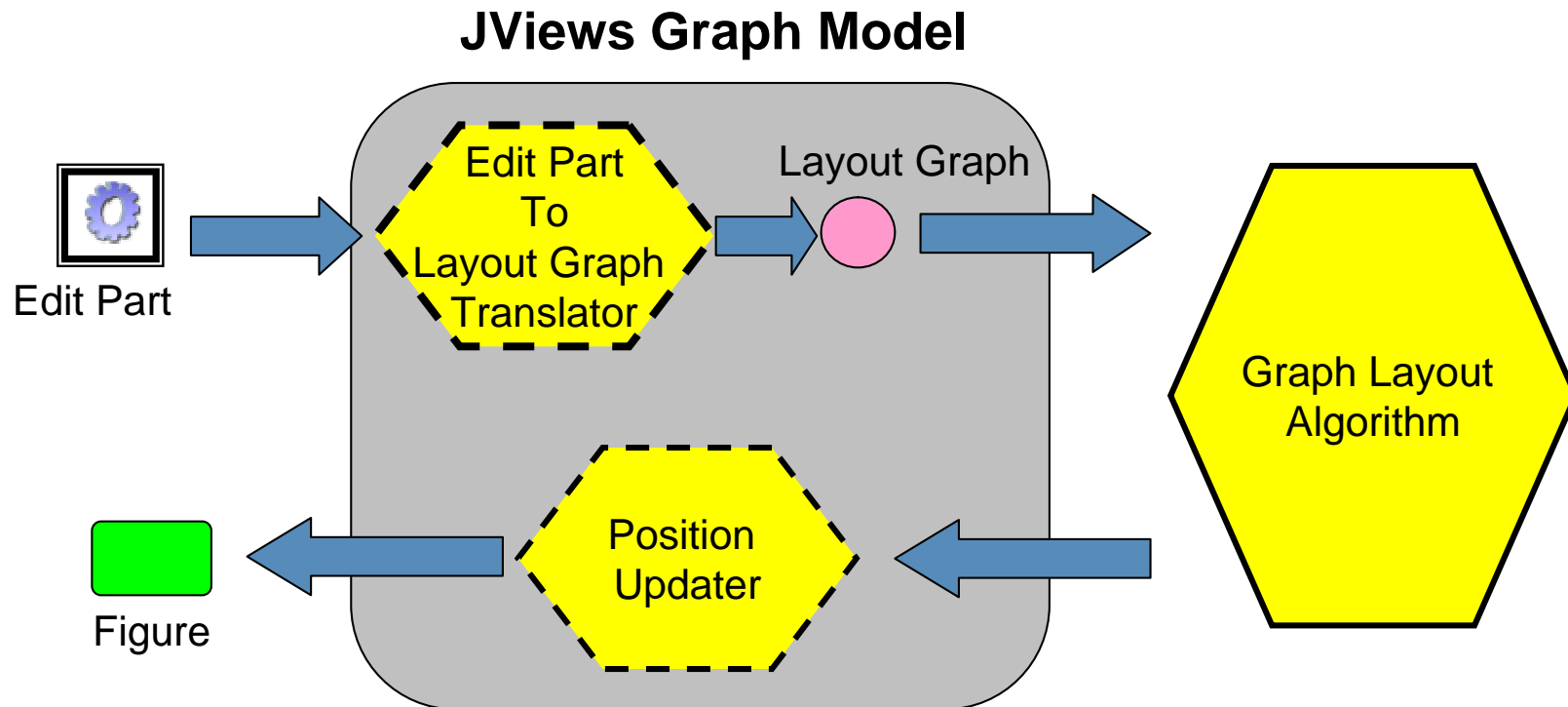
- Disadvantages

- ◆ API on Graph Layout not uniform
 - Different layout graph data structures for different layouts
- ◆ Too much work for you (the developer)
 - EditPart to Layout Graph Translator
 - Figure Position Updator
- ◆ Not integrated in the data model
 - Not persistent
 - Not based on commands
 - Not undoable

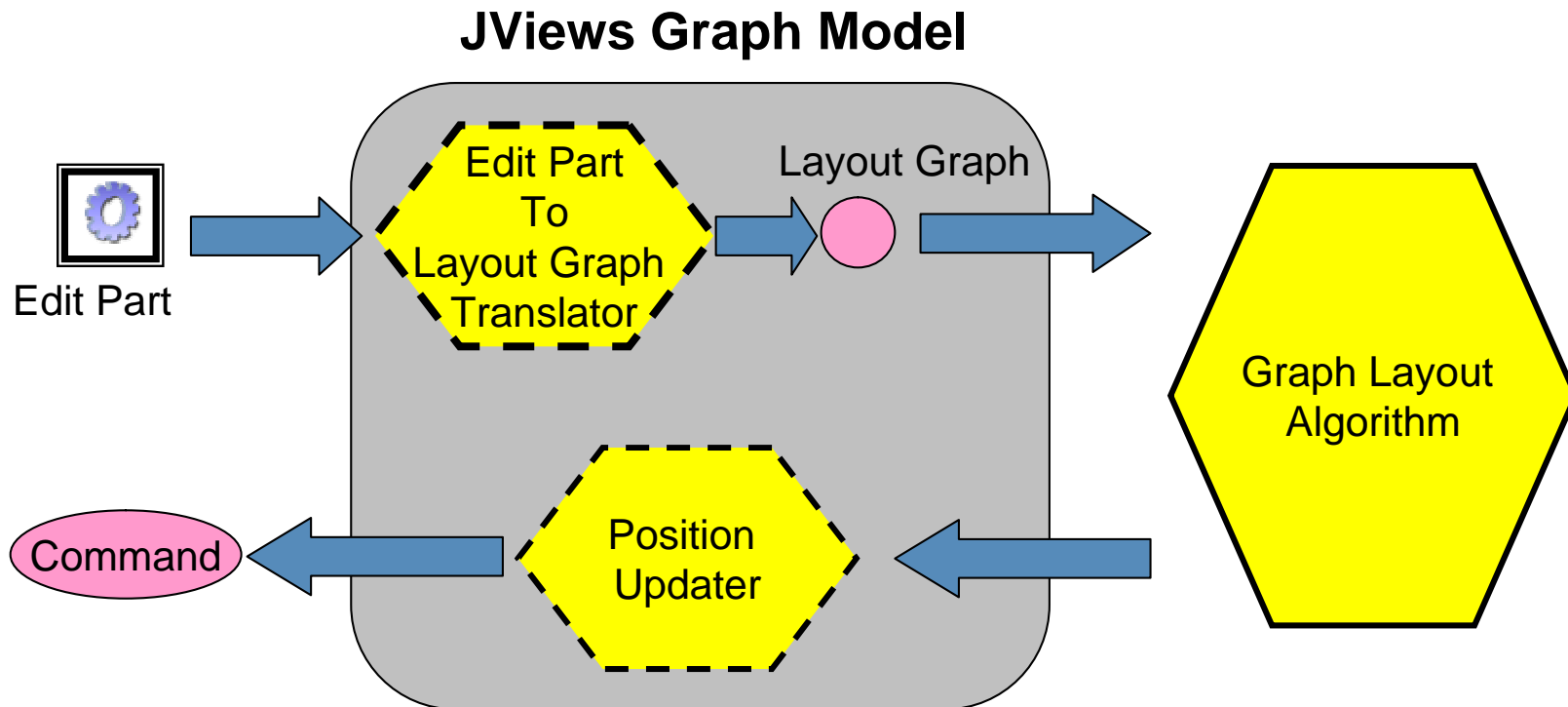
=> We can make it simpler & more powerful

Layout in the GEF View

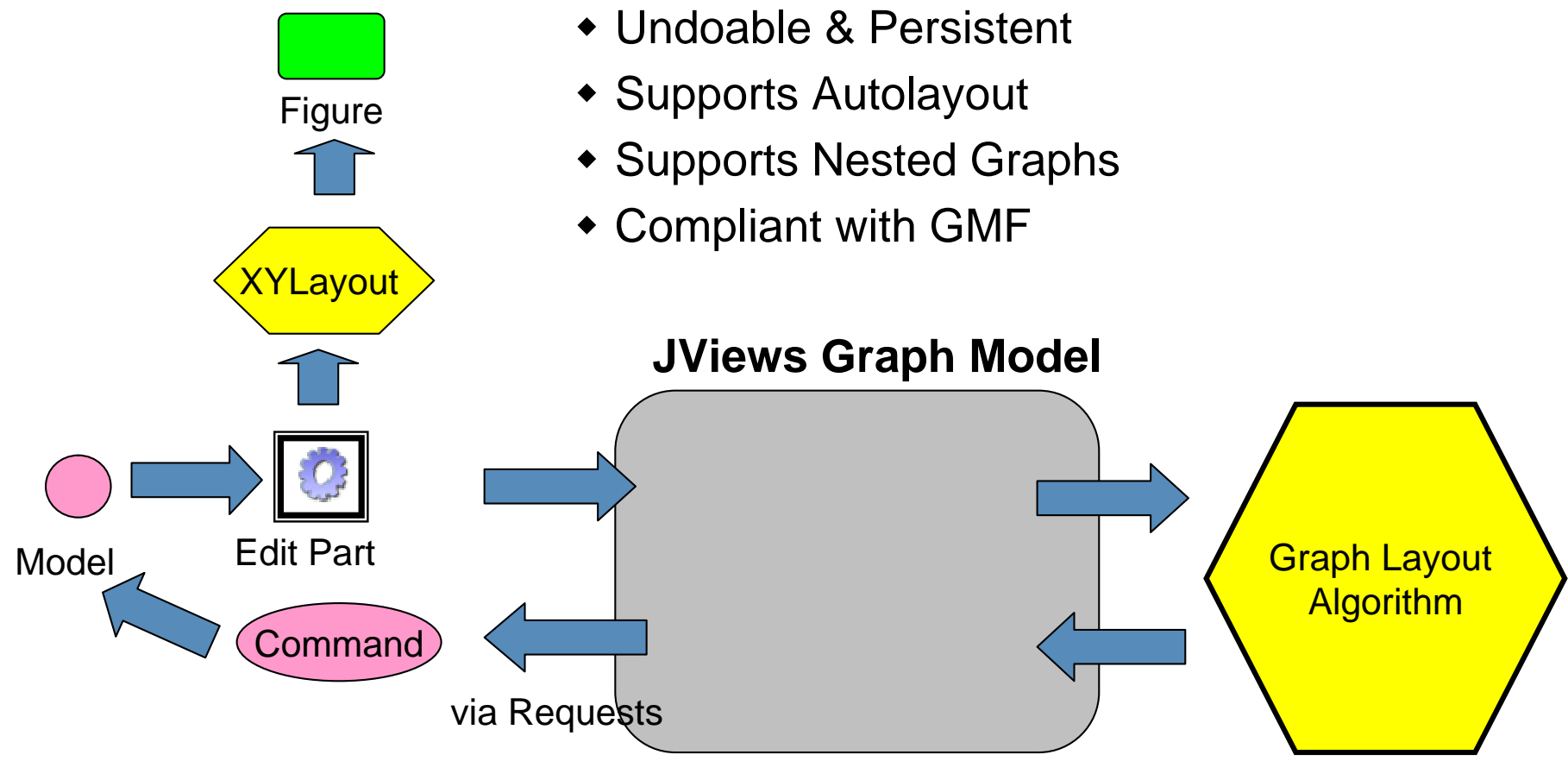
- Lots of stuff is standard => hide it !



- **Work on commands => undo & persistence support**



- JViews Graph Model based on Commands



- ◆ Undoable & Persistent
- ◆ Supports Autolayout
- ◆ Supports Nested Graphs
- ◆ Compliant with GMF

The JViews Graph Model relies on the GEF Requests

- *REQ_MOVE (node)*
- *REQ_RECONNECT_SOURCE (end point)*
- *REQ_RECONNECT_TARGET (end point)*
- *REQ_SET_ALL_BENDPOINTS (bend point)*

https://bugs.eclipse.org/bugs/show_bug.cgi?id=213171

Move from GMF to GEF

- *REQ_SIZE (nested graph)*

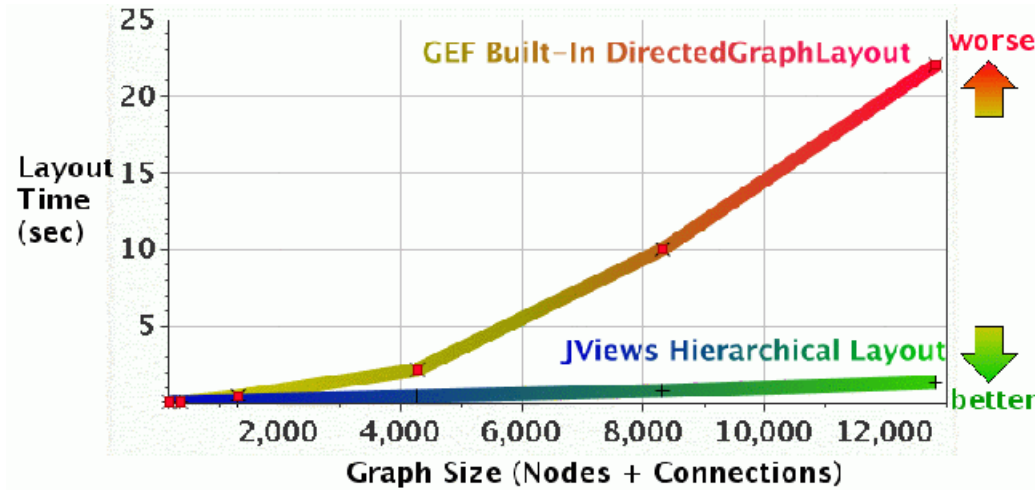
ILOG JViews Graph Layout Architecture

- Various Predefined JViews Graph Model
 - ◆ Ready to use, no work, no overhead
 - ◆ All tricks are automagical
- Various Graph Layout Algorithms
 - ◆ Work directly on graph models
 - ◆ Work for flat and nested graphs
 - ◆ Large set of parameters for different application domains
 - ◆ Layout constraints

=> Makes the Usage of Graph Layout really easy

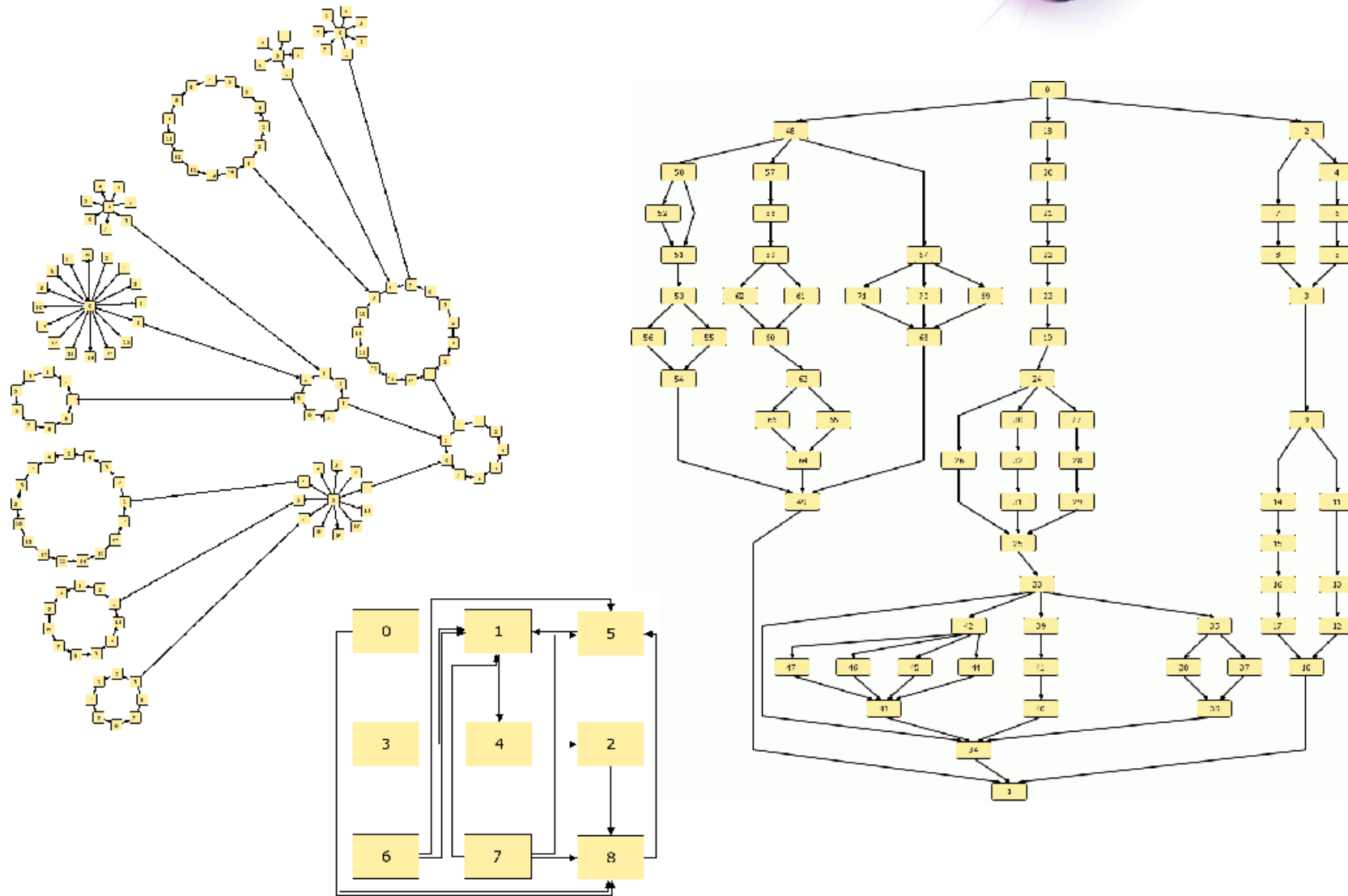
Professional Graph Layout

- Professional graph layout must scale in performance and quality

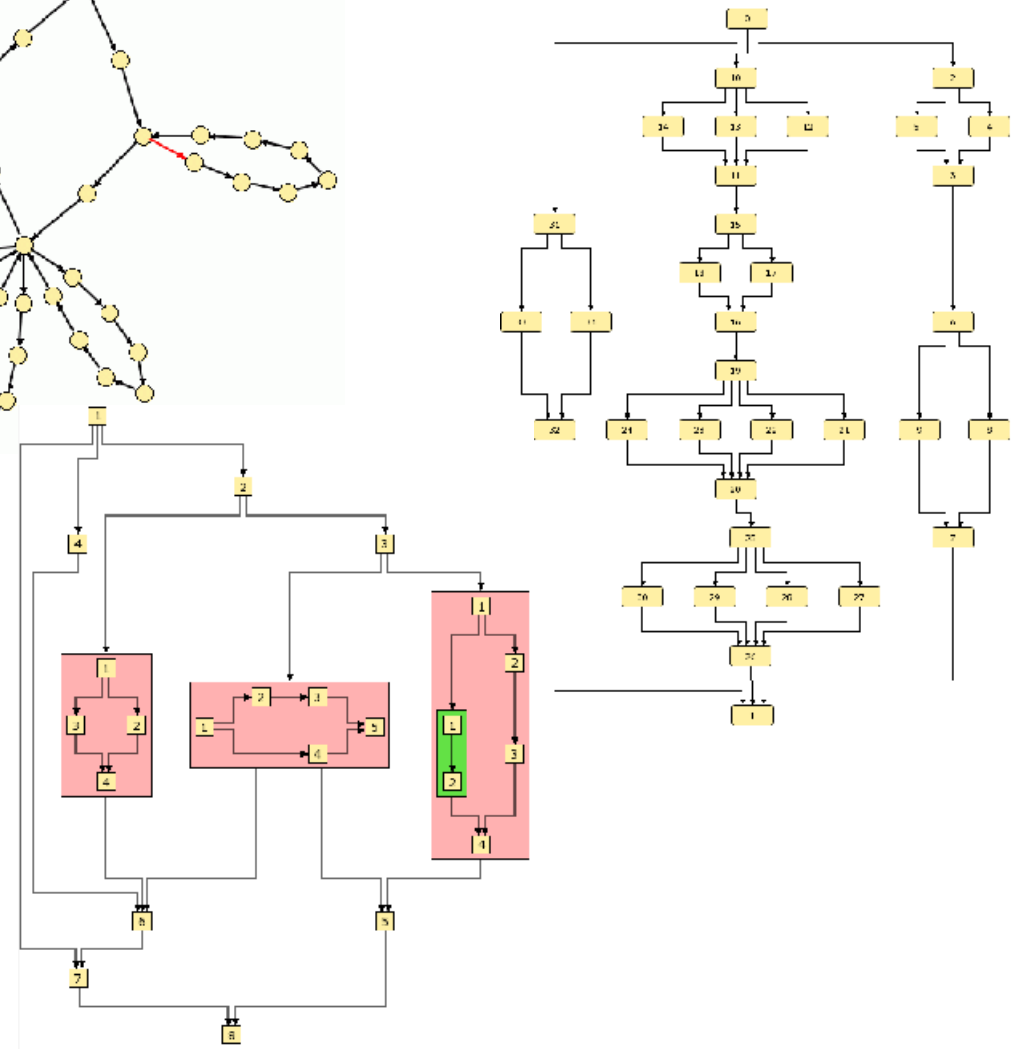
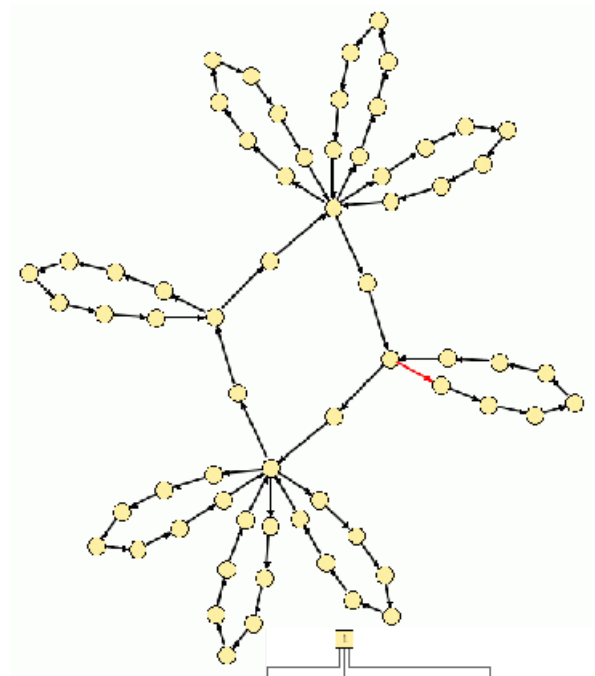
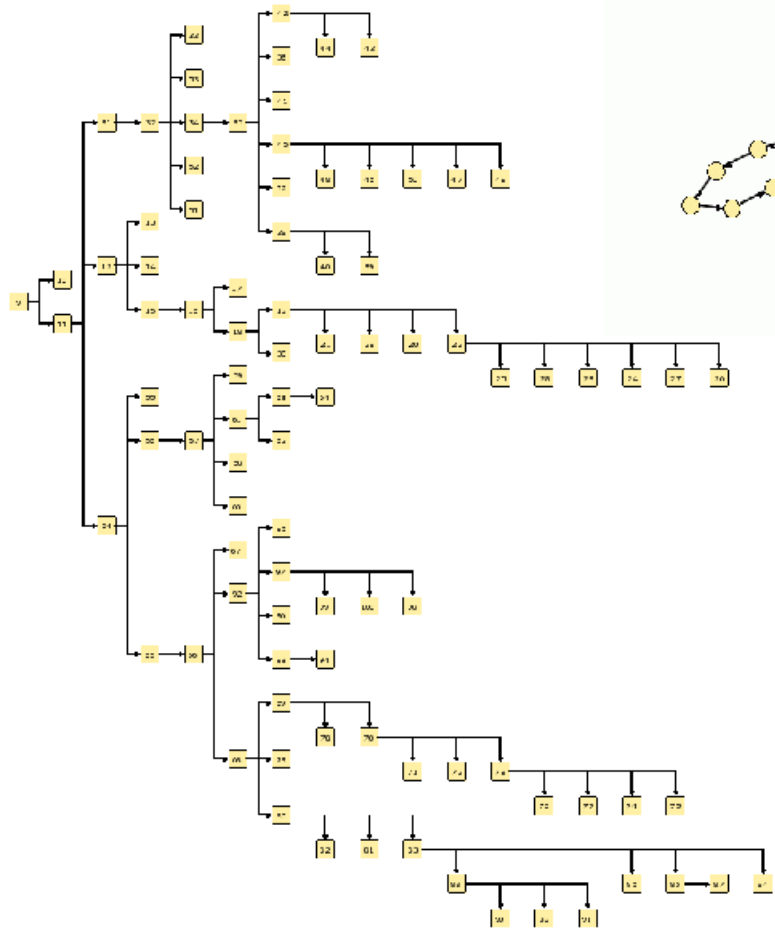


- Different layout styles
 - ◆ Hierarchical Layout
 - ◆ Tree Layout
 - ◆ Link Layout
 - ◆ Uniform Layout
 - ◆ Circular Layout
 - ◆ Bus Layout
 - ◆ Grid Layout
 - ◆ Topological Mesh Layout
- Autolayout
- Layout of nested graphs

Demos



Demos



Thank You!

More info about JViews Graph Layout for Eclipse:
<http://www.ilog.com/products/jviews/diagrammer/latestversion.cfm>

Code Examples & Eclipse Plugin Templates:
<ftp://ftp.ilog.com/pub/share/eclipseconsamples.zip>

(The directory is invisible, but the direct access to the file works)