

# Graphiti

The Graphical Tooling Infrastructure  
Speaking Plain Java



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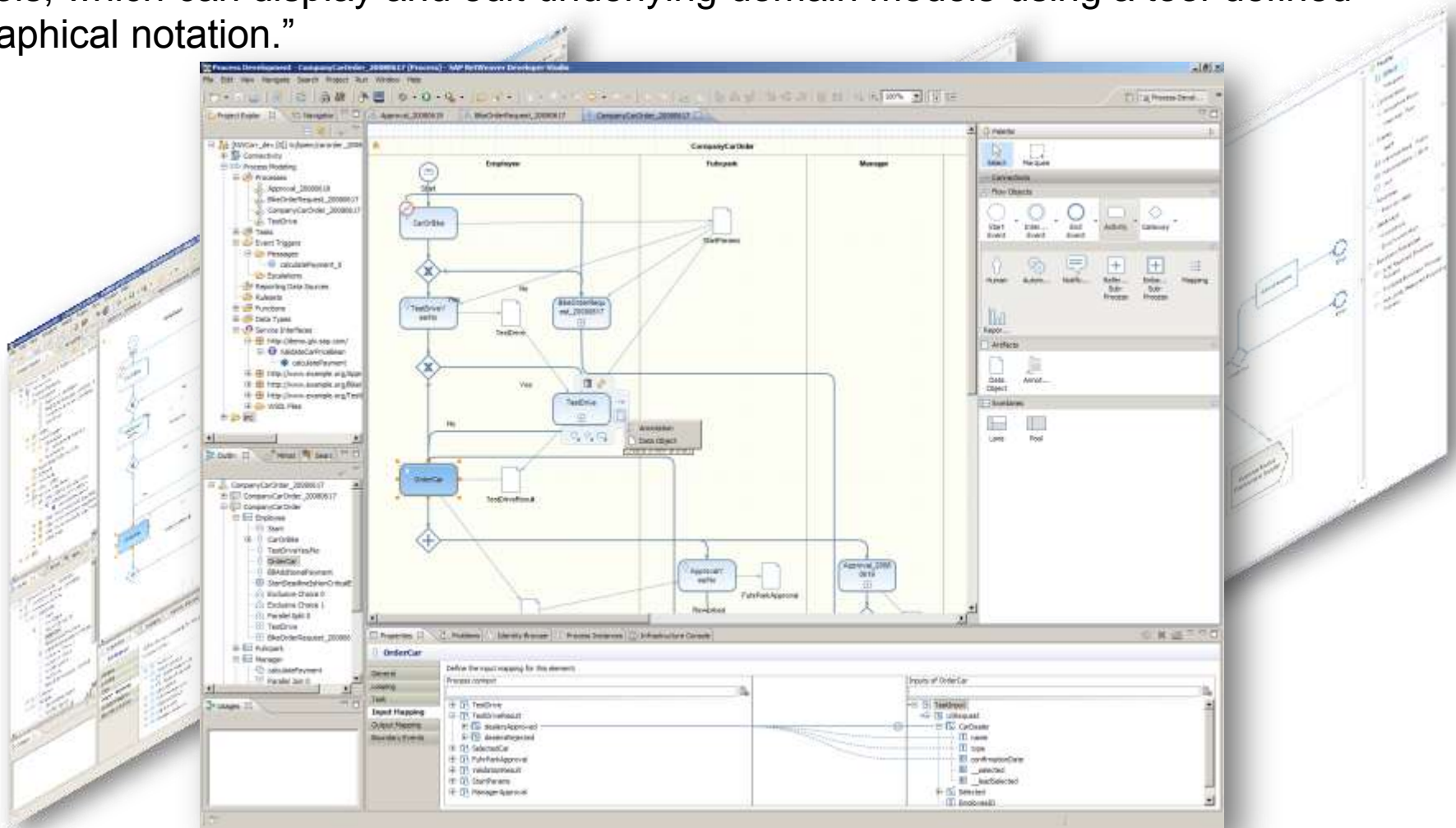
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# What Is Graphiti All About ?

“The goal of Graphiti is to support the fast and easy creation of unified graphical tools, which can display and edit underlying domain models using a tool-defined graphical notation.”



# Why Should I Want to Use Graphiti ?



## Flat learning curve

- Platform specific technology (e.g. GEF / Draw2D on Eclipse) is hidden from developer

## Fast and easy development of graphical editors for various domain models

- First results with very low effort by using default implementations and strong framework

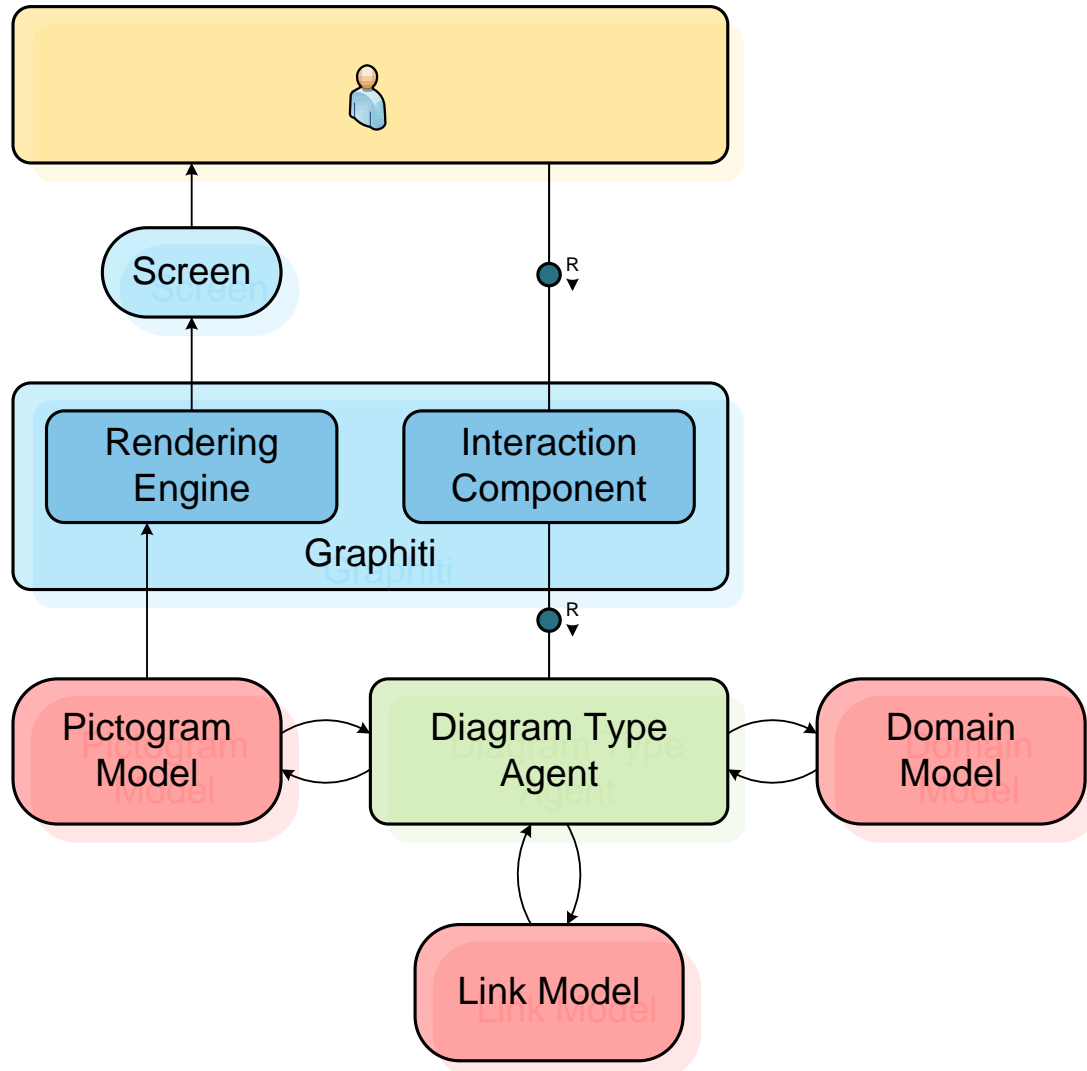
## Common look and feel with sensible defaults

- User interactions were designed in close co-operation with usability specialists

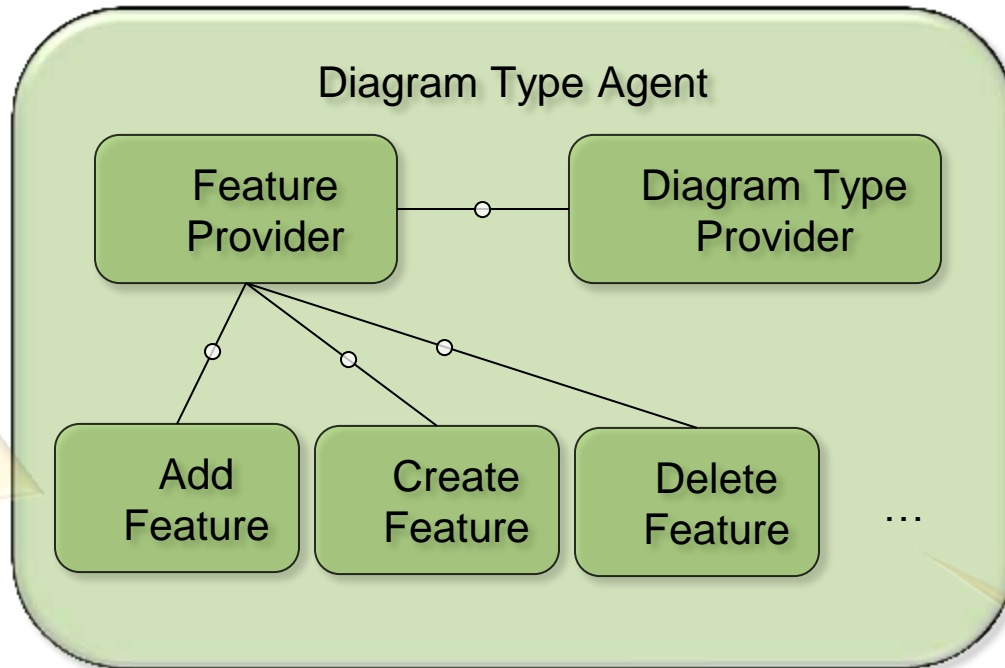
## Option to support different platforms

- Diagrams are defined platform independently
- Currently only Eclipse is supported
- Platform specifics (color-dialog, font-dialog, ...) can be integrated

# How Does Graphiti Work ?



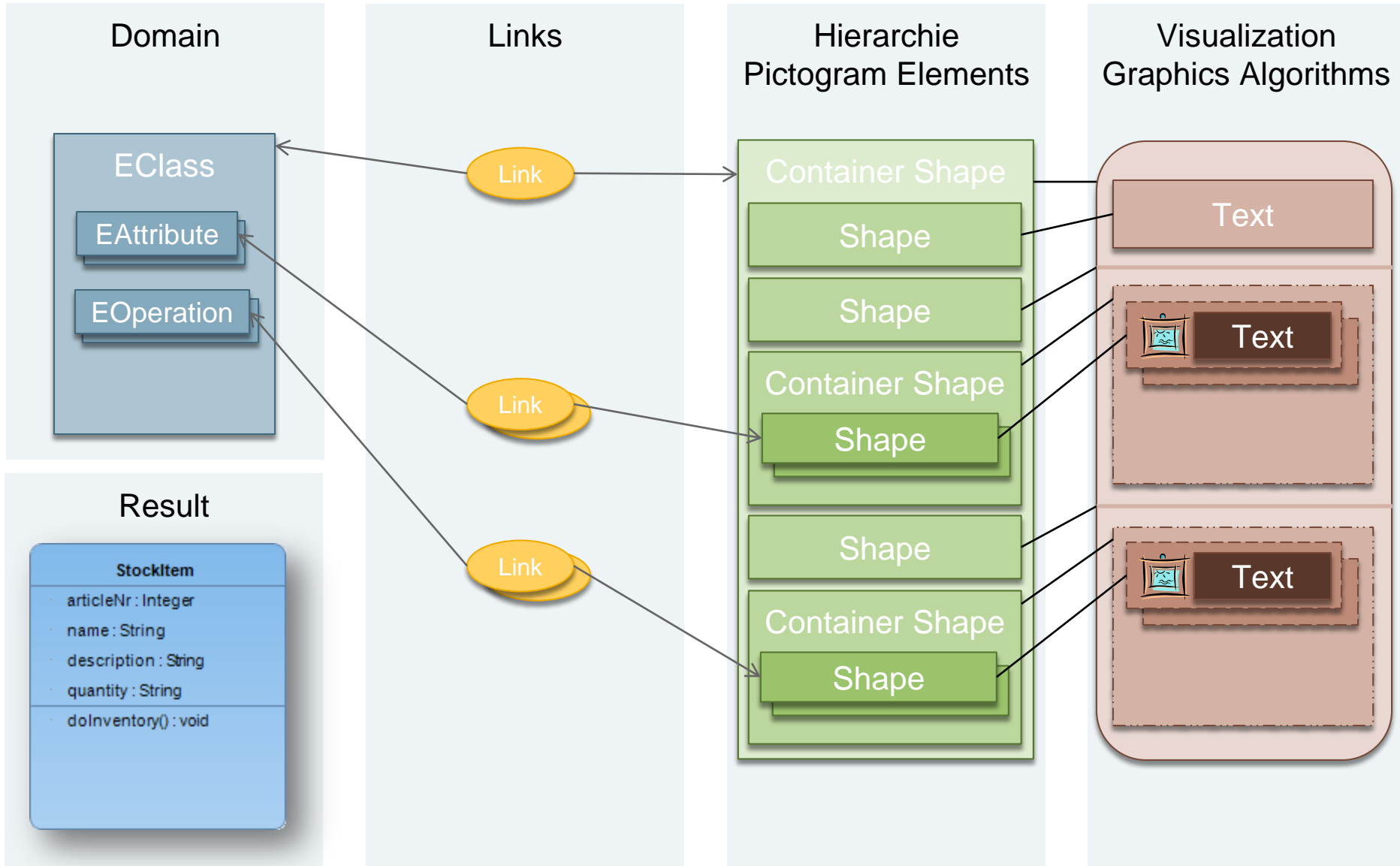
# What about the Diagram Type Agent ?



A feature implements an operation for a domain object and defines the context in which the operation can be triggered

Specialized features for common user interactions available

# Which Objects Do I Deal with ?



Implement a Diagram Type Provider

Register the Diagram Type Provider for a Diagram Type

Implement a Feature Provider

Implement Features

# Well Then - How Do I Build a Tool ?



```
package org.eclipse.graphiti.tutorial;  
  
import org.eclipse.graphiti.dt.AbstractDiagramTypeProvider;  
  
public class TutorialDiagramTypeProvider extends AbstractDiagramTypeProvider {  
  
    public TutorialDiagramTypeProvider() {  
        super();  
    }  
}
```

Register the Diagram Type  
Provider for a Diagram Type

Implement a Feature  
Provider

Implement Features



# Well Then - How Do I Build a Tool ?



```
...
<extension point="org.eclipse.graphiti.eclipse.diagramTypes">
  <diagramType
    id="org.eclipse.graphiti.tutorial.TutorialDiagramType,,
    type="tutorial,,
    name="Tutorial Diagram Type,,
    description="This is the diagram type for the Graphiti tutorial">
  </diagramType>
</extension>

<extension point="org.eclipse.graphiti.eclipse.diagramTypeProviders">
  <diagramTypeProvider
    id="org.eclipse.graphiti.tutorial.TutorialDiagramTypeProvider,,
    name="Tutorial Editor,,
    class="org.eclipse.graphiti.tutorial.TutorialDiagramTypeProvider,,
    description="This is the editor for the Graphiti tutorial">
    <diagramType
      id="org.eclipse.graphiti.tutorial.TutorialDiagramType">
    </diagramType>
  </diagramTypeProvider>
</extension>
...
```

Implement Features

# Well Then - How Do I Build a Tool ?



```
package org.eclipse.graphiti.tutorial;
...
public class TutorialFeatureProvider extends DefaultFeatureProvider {

    public TutorialFeatureProvider(IDiagramTypeProvider dtp) {
        super(dtp);
    }
}
```

Register the Diagram Type  
Provider for a Diagram Type

```
...
public TutorialDiagramTypeProvider() {
    super();
    setFeatureProvider(new TutorialFeatureProvider(this));
}
...
```

Implement Features

# Well Then - How Do I Build a Tool ?



```
...
public class TutorialAddEClassFeature extends AbstractAddShapeFeature {
    public TutorialAddEClassFeature(IFeatureProvider fp) {
        super(fp);
    }

    @Override
    public boolean canAdd(IAddContext context) {
        // Check if user wants to add an EClass
        if (context.getNewObject() instanceof EClass) {
            // Check if user wants to add to a diagram
            if (context.getTargetContainer() instanceof Diagram) {
                return true;
            }
        }
        return false;
    }

    @Override
    public PictogramElement add(IAddContext context) {
        ...
    }
}
```

# Well Then - How Do I Build a Tool ?



```
public PictogramElement add(IAddContext context) {
    EClass addedClass = (EClass) context.getNewObject();
    Diagram targetDiagram = (Diagram) context.getTargetContainer();
    int w = context.getWidth() <= 0 ? 100 : context.getWidth();
    int h = context.getHeight() <= 0 ? 50 : context.getHeight();

    ContainerShape containerShape = PeUtil.createContainerShape(targetDiagram, true);
    RoundedRectangle roundedRectangle = GaUtil.createRoundedRectangle(containerShape, 5, 5);
    roundedRectangle.setForeground(manageColor(CLASS_FOREGROUND));
    roundedRectangle.setBackground(manageColor(CLASS_BACKGROUND));
    roundedRectangle.setLineWidth(2);
    GaUtil.setLocationAndSizeOfGraphicsAlgorithm(roundedRectangle, context.getX(), context.getY(), w, h);
    link(containerShape, addedClass);

    Shape shape = PeUtil.createShape(containerShape, false);
    Text text = GaUtil.createDefaultText(shape, addedClass.getName());
    text.setForeground(manageColor(CLASS_TEXT_FOREGROUND));
    text.setHorizontalAlignment(Orientation.ALIGNMENT_CENTER);
    text.setVerticalAlignment(Orientation.ALIGNMENT_CENTER);
    text.getFont().setBold(true);
    GaUtil.setLocationAndSizeOfGraphicsAlgorithm(text, 0, 0, width, 20);

    shape = PeUtil.createShape(containerShape, false);
    Polyline polyline = GaUtil.createPolyline(shape, new int[] { 0, 20, width, 20 });
    polyline.setForeground(manageColor(CLASS_FOREGROUND));
    polyline.setLineWidth(2);

    return containerShape;
}
```

PredefinedEClass

## Implement a Diagram Type

```
public class TutorialFeatureProvider extends DefaultFeatureProvider {  
    ...  
    @Override  
    public IAddFeature getAddFeature(IAddContext context) {  
        if (context.getNewObject() instanceof EClass) {  
            return new TutorialAddEClassFeature(this);  
        }  
        return super.getAddFeature(context);  
    }  
}
```

Register the Diagram Type  
Provider for a Diagram Type

Implement a Feature  
Provider

Implement Features





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