Overview:
Open Inventor
Open Inventor

• set of building blocks
• based on OpenGL - uses OpenGL for rendering
• focuses on creating 3D objects
• commonly used to render the objects
• creates a scene graph
  • directed, acyclic graph of nodes
  • state machine
  • some nodes modify state
  • object nodes are rendered according to current state
Inventor Objects

- database primitives
  - shape
  - property
  - group
  - engine

- manipulators
  - handle box
  - trackball
  - components
    - materials
    - directional lights

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Hierarchical Traversal

<table>
<thead>
<tr>
<th>Separator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separator</td>
</tr>
<tr>
<td>RotationXYZ</td>
</tr>
<tr>
<td>axis Z</td>
</tr>
<tr>
<td>angle 0 =</td>
</tr>
<tr>
<td>ElapsedTime</td>
</tr>
<tr>
<td>speed 0.4</td>
</tr>
<tr>
<td>. Timeout</td>
</tr>
<tr>
<td>Transform</td>
</tr>
<tr>
<td>translation 0 0 0.5</td>
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<tr>
<td>}</td>
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<td>}</td>
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<td>Separator { …</td>
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</tbody>
</table>
The Scene Database

Transformation node

Separator node

Object node

Property node
Sample Graph

Group

Transform

Property

Transform

Separator

Object

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Class Tree

SoBase
  SoFieldContainer
    SoNode
      SoCamera
      SoShape
        SoCube
      ...
    SoEngine
      SoCalculator

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Etc.

Callback function at node
Selection callback node
Event callbacks
manipulators
OSU inventor flattens tree

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