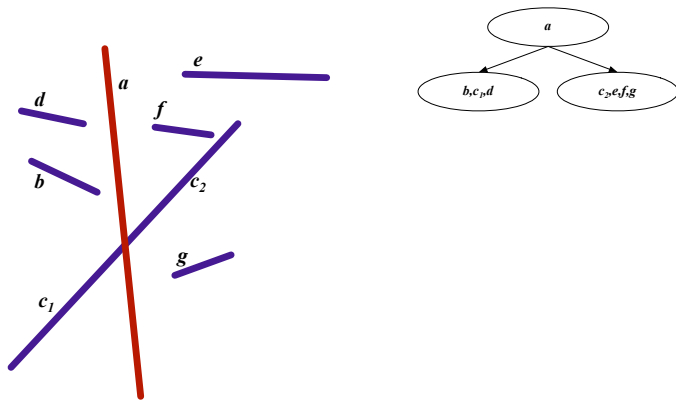
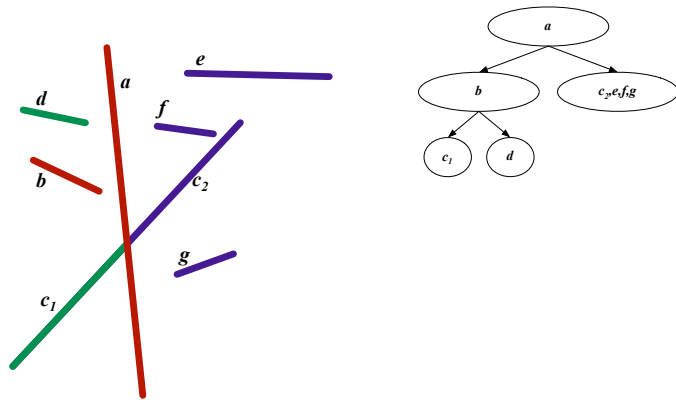


BSP-Trees



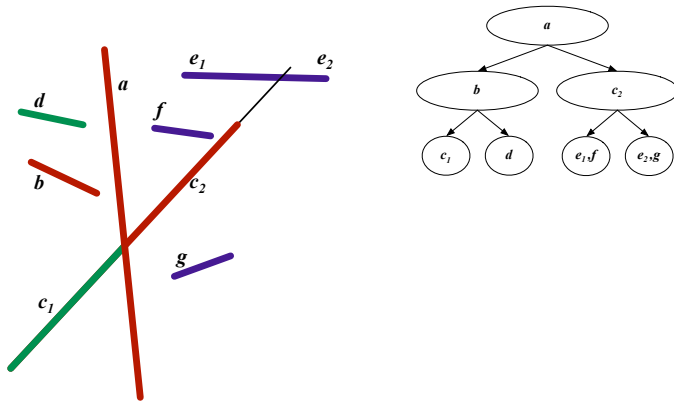
5

BSP-Trees



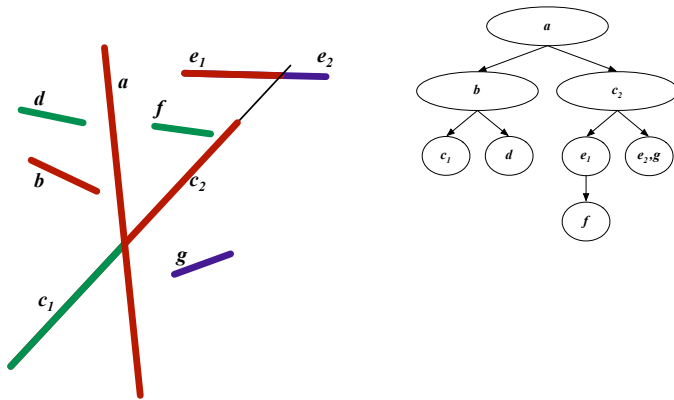
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BSP-Trees



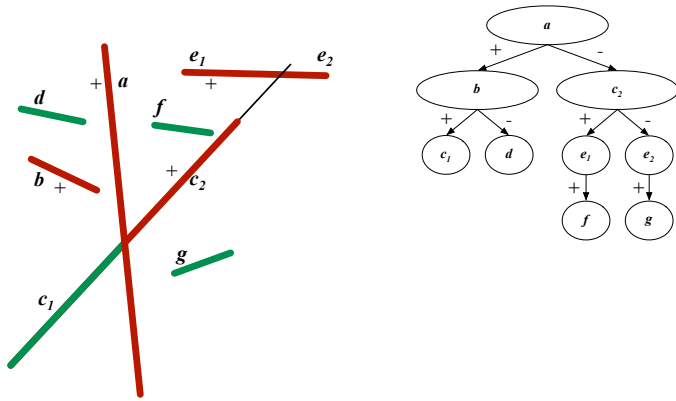
7

BSP-Trees



8

BSP-Trees



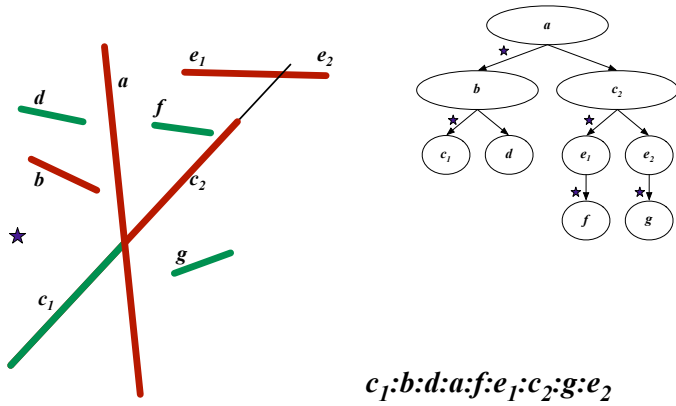
9

BSP-Trees

- Visibility Traversal
 - Variation of in-order-traversal
 - Child one
 - Sub-tree root
 - Child two
 - Select "child one" based on location of viewpoint
 - Child one on same side of sub-tree root as viewpoint

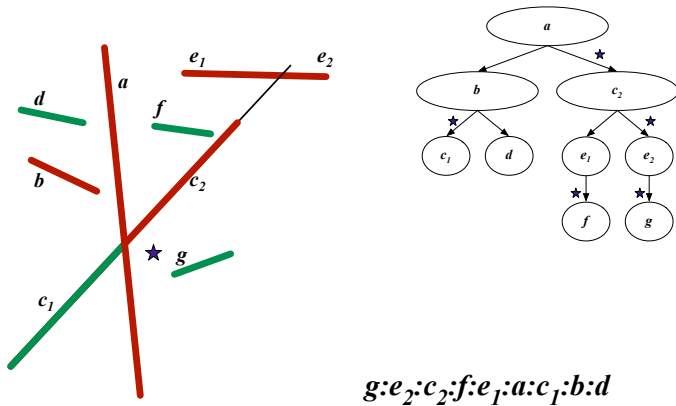
10

BSP-Trees



$c_1:b:d:a:f:e_1:c_2:g:e_2$

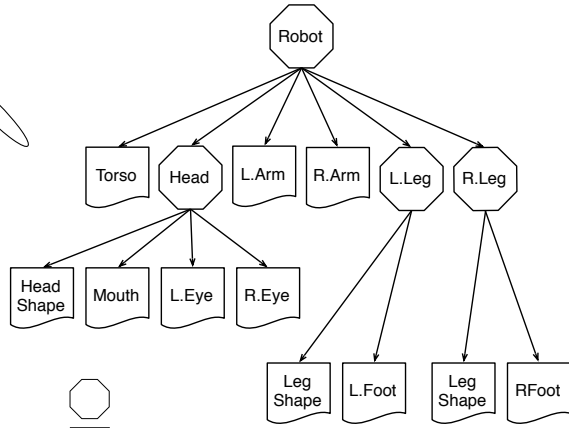
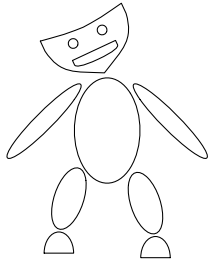
BSP-Trees



$g:e_2:c_2:f:e_1:a:c_1:b:d$

AABB Trees

One of many variations



Group node



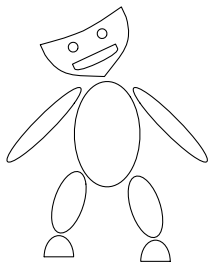
Geometry node



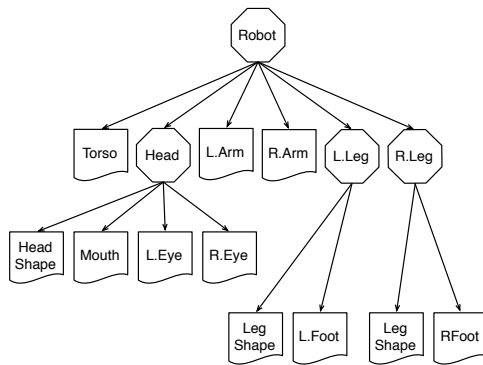
Transformation stored at all nodes

AABB Trees

One of many variations



Geometry node



Head Shape



Geometry



B.Box



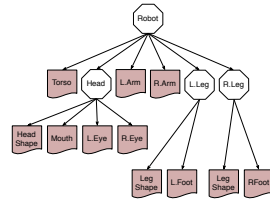
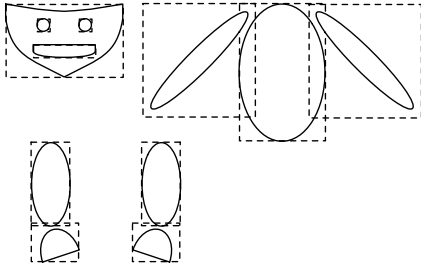
Transformation



XF B.Box

AABB Trees

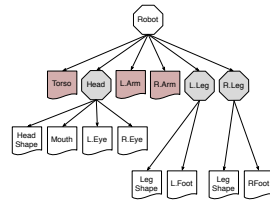
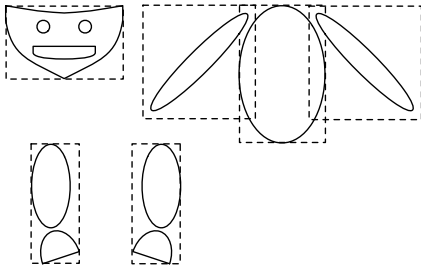
One of many variations



Transformed Bounding Boxes

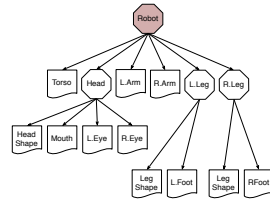
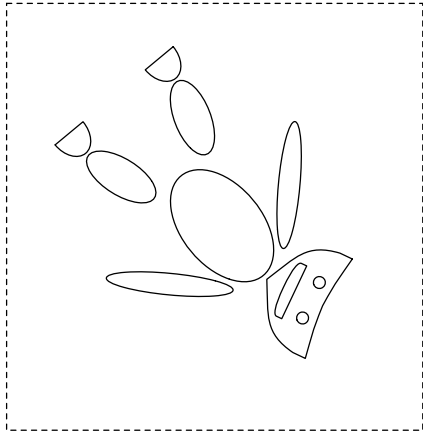
AABB Trees

One of many variations



AABB Trees

One of many variations



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Ray Test Against Bound Tree

- RayHitSubTree(&ray, node)
 - If RayHitsBB(ray, node.xfBB)
 - $ixfRay = Inverse(node.xf) * ray$
 - If RayHitsBB(ixfRay, node.BB)
 - If node is group
 - Foreach child in node.children
 - RayHitSubTree(ixfRay, child)
 - else // node not group
 - RayHitGeometry(ixfRay, node.geom)
 - ray.collusionInfo.update(ixfRay)

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