

Display Lists

CSCI 4229/5229

Computer Graphics

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What is it?

- Sequence of commands stored in an internal representation that is efficiently processed
 - “Compiled” form of commands
 - Similar to Java “bytecodes”
 - Used in OpenGL, Postscript, HP/GL, etc.
 - Can be optimized for hardware
 - Can be executed in hardware/firmware
- OpenGL Display Lists
 - Can be several times faster than direct rendering
 - Typically just structures in memory

OpenGL Display Lists

- Can contain a sequence of most OpenGL calls
- Display lists can be nested
- Identified by a name (integer)
- Watch out for the state machine
 - State can change in a list
 - Existing state applies to the list
 - glEnable(*)
 - Transformations

OpenGL Display List Calls

- `glGenLists(n)`
 - Get unique name(s) for lists
 - Values guaranteed contiguous to allow arithmetic
- `glNewList(id,action)`
 - Start a new list
 - `GL_COMPILE` or `GL_COMPILE_AND_EXECUTE`
- `glEndList()`
 - End list
- `glDeleteLists(id,range)`
 - Delete display lists

OpenGL Display List Calls

- `glCallList(id)`
 - Execute list
- `glCallLists(n,type,ids)`
 - Execute sequence of lists
 - *type* can be int, short, byte, etc.
- `glListBase()`
 - Add an offset to each id