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 in concept 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
- Deprecated in OpenGL 3 (but still useful)

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