

# Anatomy of an Interactive Application

## Interactive user actions

### MouseButton:

Record button up/down

### MouseDown:

Left mouse drag  
horizontally  
vertically

Right mouse drag  
horizontally

Shift mouse drag  
Shift scroll wheel vertically

Optional perspective operations

### Scroll:

Scroll wheel

### Keyboard:

Record press/release

## State Vars

spin  
tilt

zoom

tx, ty

rx, ry  
front, back

Light dir  
and dist

...

## DrawScene (runs every 1/60 of a second):

WorldView =  $T(tx, ty, -zoom) * Rx(\text{tilt}-90) * Rz(\text{spin})$

WorldProj =  $P(rx, ry, \text{front}, \text{back})$

Compute light position

Send all to GPU

Issue draw commands

## Main:

Initialize OpenGL

Initialize GLFW and open window

Call InitializeScene

Sets up interactive callbacks

while window is open:

Handle user events

Clear screen

Call DrawScene

SwapBuffers

## InitializeScene:

Create scene

Send to GPU

Initialize State Vars

...