Student's Name_____ Grader's Name_____

2012 Winter EECS 351 Grading Sheet: Project B

J. Tumblin 2012.02.01

_____**10% Report:** clear illustrated PDF file report with your name project title, goals, user-guide, code-guide, and example results.

_____**5% User instructions:** 'help' key prints console or on-screen instructions that explain how to use your program.

_____**10% Ground-Plane Grid:** Project shows x,y ground-plane grid that extends to horizon, and lets us easily assess changes to camera position and aiming directions.

_____**15% Adjustable Jointed Shape**: draws at least one shape with at least three cascaded joints, connected (hands stay on arms, etc), and smoothly adjustable, with no effect on camera or viewing.

_____**10% Additional Multi-color 3D Shapes:** draws at least four more separate, 3D shapes, each shape with at least 3 different vertex colors specified. (OK if these objects NOT jointed…)

_____**5% 3D Axes:** Draws 3D world-space coord. axes on-screen, and at least one more set of 3D axes to depict the coordinate system used for a rotatable joint or movable part in the jointed object.

_____**10% 4 Viewports (3 fixed orthographic front,side,top + 1 movable projection view):** Divides display window evenly into 2x2 grid of viewports that always fill the screen and never distort (squash/stretch) the images when users re-size window for taller or wider images.

_____**15% Smoothly adjustable 3D View Control:** User interaction provides smoothly adjustable viewpoint control (adjust to any 3D position, any 3D viewing direction) by changing GL_MODELVIEW matrix for the 4th 'movable' projection view.

_____**10% Switchable 3D Camera:** Switches back and forth between a Perspective Camera and an Orthographic camera, without changing current viewpoint or viewing direction.

_____**10% On-Screen Image/Bitmaps:** show at least 3 user-movable images loaded from a file by your program, and transferred to the on-screen framebuffer using openGL commands.

_____2% extra credit: asymmetric camera-parameter controls (left, right, top, bottom adjusts)

_____4% extra credit: Vertex Buffer Objects instead of vertex array objects.

_____4% extra credit: Pixel Buffer Objects instead of fixed-pipeline pixel-transfer calls.

==========TOTAL (15% of final grade)