

Computer Graphics Project #5

Texture Mapping (50%), Billboards (30%) & other effects (30%)

1. Create at least 3 types of texture maps (use them to construct texture objects).
 - a 、 You can use our sample codes to generate the image data. You may also create BMP files offline and import them by using our BMP reader.
2. Glue the textures on some objects in your scene. (for example, the floor, robots, obstacles, rocks, buildings, ...)
3. Please use “modulate” texture function for some texture-mapped surfaces.
 - a 、 For adding shading effects.
4. Basic requirements: (50%)
 - a 、 Create a scene with light sources, objects, robot, ... (everything from the previous project.)
 - b 、 Render the scene using the smooth shading method;
 - c 、 Apply texture mapping; (using at least 3 textures.) If texture-mapping is not performed, you will earn no credit in this project! 沒有材質貼圖，沒有分數！
5. Add billboards to draw complex objects like trees, tall buildings, grasses, clouds... (30%) Don't just create one billboard. You should use many billboards to enrich the scene.
6. Add other things to increase visual effects in the scene. (at most 30%)
 - a 、 A sky dome, 動態畫一個天空盒包住整個場景(包住 View volume) (5%)
 - b 、 Foggy effect + being able to change the fog color, mode, and opacity, (10%)
 - c 、 Animating textures by using texture matrices, (5%)
 - d 、 Using sprites (key frames) to show moving objects, like birds, clouds, other robots in distance, airplanes, etc. (10%)
 - e 、 Other fancy ideas are welcomed.

Due day: one week after the final examination.