

Lab #5: Lua Lab

Due: May 26, 2010 (demonstrate in lab)

Overview

For this lab you will modify your solution to the graph/wapoint lab (lab #3) to support Lua scripting. Your program should (from the previous lab)

- read a file that contains information describing a graph.
- construct an internal representation of the graph.
- “draw” the graph using Irrlicht.
- load the Quake3 map (as done in the tutorials).
- allow the user to move through the map.

For this lab, extend the above to

- initialize the Lua interpreter with a script loaded from a file.
- invoke the Lua function ‘process_node’ on every node in the graph every 50ms. This function will take a single integer label denoting the node to process (these are the labels from the input file).
- register the following functions (implemented in your program) to the Lua code.

GetColor – this function takes a single integer label denoting a node and returns a table with **r**, **g**, **b** fields specifying the current color of the node.

SetColor – this function takes an integer label and a table with **r**, **g**, **b** fields and sets the color of the node with the provided label.

GetOriginalPosition – this function takes a single integer label denoting a node and returns a table with **x**, **y**, **z** fields specifying the original position (as read from the file) of the node.

SetPosition – this function takes a single integer label denoting a node and a table with **x**, **y**, **z** fields and sets the current position of the specified node.

GetDistance – this function takes a single integer label denoting a node and returns the distance from the specified node to the “player” (the camera position).

You will demonstrate your program during lab. To do so, create a Lua script that exercises the above functions.