Turtle Protocol

Overview

The protocol scheme used for the turtle graphics client-server pair will be kept as simple as possible. Utilizing TCP, the connection will persist until closed by the server, and all commands sent and received will be in plain text format.

Command Structure

The overall scheme of communications between the server and the clients will be driven by updates. For each pixel changed by the user, the client will send an update packet. This packet will contain the coordinates of the pixel to be flipped from it's current color to either black or white. Once the server parses the command and applies this change to it's master copy of the array of pixels available, it will send out update packets of it's own to all clients, including the client that sent the original packet. Once this packet is received by a client, it's internal array of pixels is changed to synchronize. It is at this point that the client's screen who originally sent the update will reflect this change.

Communication Example

Client: "22 15"
Server receives message and changes its internal 'master' array. Pixel located at X:22 Y:15 is now flipped from its original color
Server: "22 15"
Client receives message and changes its internal array to sync with master
Pixel change is now reflected on the client's GUI