Local user:

1. **Lobby GUI:** running which is a connection to the server. This GUI has a list of all users connected to it as well as the list of all Whiteboard instances being held by the server. A user can create a new Whiteboard or join an existing one. No boards can be deleted and will remain active as long as the server is live.
   1. Once a user selects a Whiteboard, he/she is automatically subscribed to this board’s pixel information.
2. **Canvas GUI**: blackbox with two communicating functions
   1. sendPixel(String pixel) takes in a pixel in the form “x y r g b alpha” where the first two values are the x and y positions of the pixel, and rgb alpha are the four color components of the pixel.
   2. drawPixel(String pixel) takes in a pixel, in the same format as sendPixel(), and draws the given pixel.

Server side:

1. **LobbyModel:** it holds all relevant information regarding users and data. It aids the server by doing the data processing while it, the server, simply handles incoming/outgoing packets.
   1. **Map<Whiteboard, Integer>** boards: Map from each unique Whiteboard to a list of unique Users.
   2. **Map<Integer, Integer>** users: Map from each unique user to a timestamp of connection
   3. **String** name: the name of the Lobby. Used by the Lobby GUI.
   4. **AtomicInteger** uniqueUserID: creates new IDs for incoming connections
2. **Whiteboard**: important is to note that the “master copy” of the pixels of the board are kept here. This is a Map from a position to color information. This board is in charge of updating itself whenever it receives a change request, and is supposed to supply a way to get a single pixel update as well as the entire board (used for new users connecting to it)
3. **WhiteboardServer**: TODO