Interactive Mapping

The following dramatizes the interaction between classes in one possible implementation of a map-drawing application. The behavior here is similar though not identical to those of classes you will create and work with for homework assignment #2.

Artist: The artist draws things on the whiteboard.

Personal data:

Surveyor who supplies her data

Whatever is on the whiteboard

Actions:

Draw a map outline (get specifics from Executive),

Put specified color in specified square

Executive: The executive issues commands to get things done. Her goal is to make some part of the map appear on the whiteboard

Personal data:

Surveyor(s) and Artist(s) who work for her

Actions:

Begin map display (have outline drawn, then fill in colors supplied by Surveyor)

Report map dimensions (ask surveyor)

Surveyor: The surveyor is in charge of the map data, and can answer questions about what is on the map.

Personal data:

Map grid, showing dimensions and colors

Actions:

Report map dimensions

Report color in specified square
Executive: Ok, let’s see. I’m supposed to get some maps drawn on this whiteboard. First I’m going to need to get a map. Surveyor!

Surveyor *(stands up)*: Yes boss?

Executive: I need you to keep track of some map data for me and answer questions for any Artists who want to draw it. You can take the map data from this image here. Ok?

Surveyor: Anything you say, boss.

Executive: Ok, now I want to have the map drawn. Artist!

Artist #1 *(stands up)*: Yes boss?

Executive: I want you to draw a map for me on the whiteboard. Make it about one foot square. Ask the Surveyor here for the details.

Artist #1: Ok boss, will do. Surveyor, what are the map dimensions?

Surveyor: The map is six columns wide, marked A through F. It is six rows tall, marked 1 through 6.

Artist #1: All right. *(Draws 6x6 grid, each square approximately 2 inches on a side.)* What color is A1?

Surveyor: A1 is green.

Artist #1: *(Fills green in A1.)* What color is A2?

Surveyor: A2 is also green.

Artist #1: *(Fills green in A2.)* How about A3?

Surveyor: A3 is black.

*(They continue like this until the map is drawn.)*

Artist #1: Hey boss, I finished the drawing.

Executive: Did you? Very good, thank you. Hmm, I think I need another map drawn. New artist!

Artist #2 *(stands up)*: Yes boss?

Artist #1: Hey, what about me?

Executive *(to Artist #1)*: You’re still in charge of the first drawing. I’ll need you to fix it if it ever gets erased. Artist #2, I want you to draw a map for me on the whiteboard. Make it big, about three feet square, but I only want you to show part of the map, a 3x3 section with A3 in the upper left corner. Here’s the Surveyor who has the map details.

Artist #2: Ok, I can do that. *(Draws 3x3 grid, each square approximately 1 foot square.)* I’ll start with A3. What color is it?

Surveyor: A3 is black.

*(They continue like this until the map is drawn. Meanwhile, the professor erases part of the first map.)*

Artist #2: Hey boss, I finished the drawing.

Executive: Very good, thank you. Hmm, it looks like part of the first map has been erased. Artist #1, can you fix it please?

Artist #1: Sure I can. But I don’t remember what the colors were. I’ll have to ask the Surveyor. *(Asks Surveyor for colors and draws them in.)*

Artist #1: All done!

Executive: Good work everybody. We’re finished here.