Mini-Project Specification

You are to design and implement a Java application/applet called ObjectDraw. The interface of ObjectDraw should be similar to that of MiniDraw, with a drawing canvas, control panel, and toolbar/menu for selecting drawing tools. However, in ObjectDraw, objects (lines, rectangles, ovals, freehand figures, text strings) drawn on the canvas should retain their identity as distinct objects. Specifically, you should add another tool which is a "selector arrow". Using this tool, it should be possible to "select" any one of the objects displayed on the canvas. A selected object should be highlighted in some fashion. Once a geometric object (line, rectangle, oval) has been selected, it should be possible to resize the object by clicking on one of its corners (or the corner of the bounding box for oval objects) and dragging the mouse in the direction that you wish to expand or contract the figure. It should also be possible to move a selected object by clicking on some portion of the object other than a corner and dragging the object with the mouse. The color of an object can be changed by selecting a new color on the control panel while the object is selected. When an object is selected, clicking on the eraser tool (or selecting it from the menu) should erase the object from the canvas, leaving other objects undisturbed. Clicking on an area of the control panel outside the bounds of a selected object, or clicking on the selector tool a second time, should deselect the selected object and return the application to its normal drawing function. Note that the above specification contains some ambiguities. At appropriate points in your development process, you will need to identify and resolve these ambiguities.

Mini-Project Specification—Additional Requirements

- Your ObjectDraw application must handle window resizing “properly”.
- Your application should be designed for easy extensibility—i.e. addition of new drawing tools—and your documentation must explicitly describe your approach to achieving this objective.
Mini-Project Specification--Some Clarifications

• Freehand figures & text
  – Should be treated as objects.
  – Must be able to select, move, recolor and erase.
  – Don’t need to implement resizing (but can if you desire).

• Filled shapes
  – Rectangles and Ovals should be filled or unfilled, as in MiniDraw specification.

Mini-Project Teams

• Students will work in teams of TWO.
• With mutual agreement, you may select your own partner.
• I must be informed by e-mail of partner selections no later than Fri., Feb. 25.
• If you are unable to find a partner, notify me by e-mail no later than Thurs., Feb. 24 and I will attempt to assign you a partner.
Mini-Project--Important Points

• You MUST employ an iterative development process.
  – Description of iterations must be handed in by **Wednesday, March 2**
    • number of iterations
    • scope and objectives of each iteration
  – At the conclusion of the project you will be expected to demonstrate the functionality of each iteration, not just the final product.
  – Your grade will be based upon how successfully you carry out your iterative development process.

Mini-Project--Important Points
(Continued)

• You must document each step of your development process.
  – Conceptual model
  – collaboration diagrams
  – discussion of design trade-offs and rationale for selected alternatives.
• You may use MiniDraw as a starting point.
• Project Due Date: **Monday, March 28**