SUMMARY

In this lab you will practice drawing by creating a board image for the game Battleship.

IN-LAB

So far you have learned how to create effects to images by changing the colors of certain pixels. You can use the same techniques to paint pixels and create images from scratch.

In this lab you will create an image version of the board for the game Battleship. See the image of the actual board to the right. You want to create the board part, so just the grid plus headers.

The grid has ten columns labeled 1-10 and ten rows labeled A-J. You should recreate this board with the grid lines, circles for pegs, different colors for header cells and grid cells, and header labels.

Here's what to do:

• Create a class called Battleship.
  In that class declare a method as public static Picture makeBoard(). This method should start by creating a blank image for the board and return the image once it is created. What size should the image be? Try making each square 50x50. What should the width of your grid lines be? What is the size of the full board?

• To paint the board do the following:

  1. Paint the header colors and board colors. Don't worry about the swirly water lines for now. To get the colors try downloading an image of a real board from the internet, creating a picture object of that image in the interactions pane, and open the explorer on the image. To paint the squares just use nested for loops to set all pixels in the given area (rectangle) to the color you want.

  2. Draw the grid lines. Use nested for loops with increments greater than one to paint the grid lines.

  3. Draw the circles for the pegs. Use the drawOval method in the Graphics class to draw each circle. Use nested for loops to repeat the drawing for each cell. You can get a graphics object from your picture with the getGraphics() method (called on your Picture object). Look up the Graphics class in the Java API to see what methods are available and how they work.

  4. Draw labels in the header cells. Use the drawString method in the Graphics class to draw the labels in each header cell. Use loops. Refer to the API.

Testing your method is easy. Just call the static method using the Picture class and show the result.
```java
Picture board = Battleship.makeBoard();
board.show();
```

**GET CREDIT**

Don't forget to show a coach what you’ve done before you leave so you get credit for attending and participating in the lab.

**POST-LAB**

Try improving this board or creating other boards from scratch. This is the first step in creating a game.