cs171: Introduction to Computer Science

Project: Mosaic

200pts

For this project you will be programming a method to the `Picture` class that will allow you to interpret an existing image as a mosaic. A mosaic is an image (or other artistic medium) which is composed of smaller images. Go to the class webpage and look at `MattMosaic32.jpg` and `MattMosaic64.jpg` as examples of what your method should do.

Notice that the mosaic image is composed of smaller versions of that same image. The smaller versions are *tinted* or colored so as to capture the existing color image.

One of the most important aspects of this assignment is to be able to take a large problem (such as this mosaic creation) and break it down into smaller pieces. You will need to think about the steps involved in making the mosaic and implement each step (and test it) appropriately.

As with any project, the work you do should be entirely your own. This is especially true for the planning phase. You should not be borrowing or copying ideas about how to divide the big problem into smaller ones.

Add a method called `makeMosaic(int)` to your `Picture` class. The integer parameter should be a factor of how many tiny images compose the mosaic. For example, in the `MattMosaic32.jpg` example, the parameter is 32 meaning that the small image is 1/32 of the size of the original. Thus there are 32 small images across each row and 32 in each column. The method should return the new mosaic picture. Of course you will likely have other methods as well.

Submit your `Picture.java` file on email by 11:30am on Monday, May1.