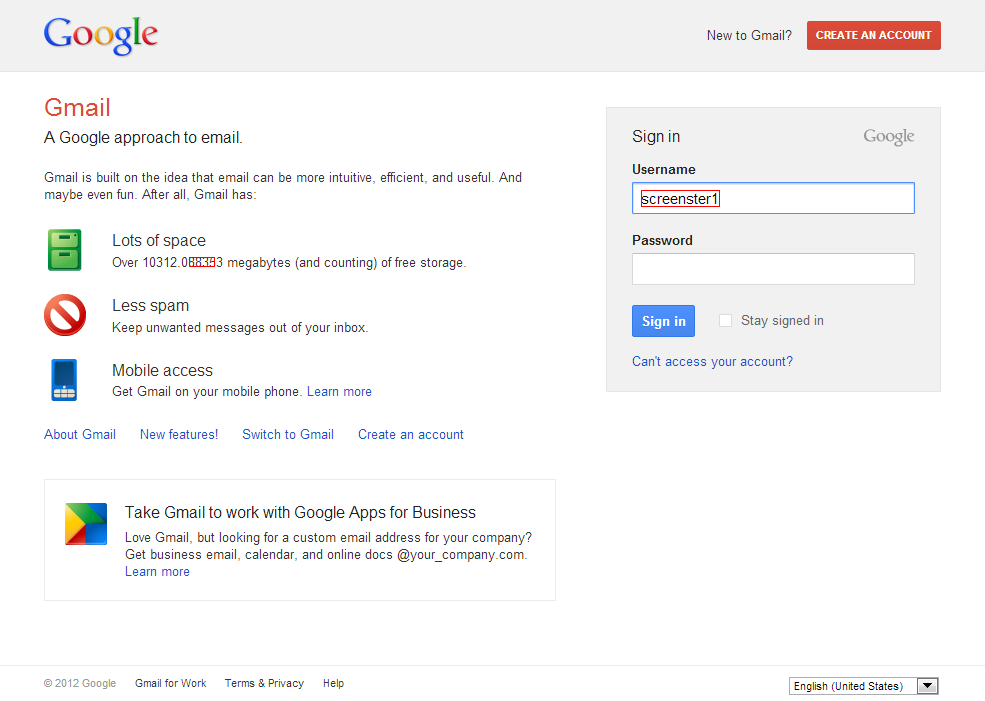
# Image Comparison Requirements

Write a program in Java that compares any 2 images and shows the differences visually. Remember that Working Software is the main value, so something simple that works is generally better than a complex unfinished solution.

## Must have

1. Implementation should use only standard core language and platform features, no 3rd party libraries and plagiarized code is permitted.
2. Pixels (with the same coordinates in two images) can be visually similar, but have different values of RGB. We should only consider 2 pixels to be "different" if the difference between them is more than 10%.
3. The output of the comparison should be a copy of one of the images image with differences outlined with red rectangles as shown below.
4. We need to see your own code. No third party libraries and borrowed code is allowed.
5. Target completion time is 2 hours, but you may choose to use up to 4 hours. Submissions sent after 4 hours will be disqualified. Note that in addition to quality, time is also factored into scoring the task. The closer you get to 2 hours the higher is the score.



## Nice to have

1. It should be possible to exclude certain parts of the image from comparison, for example a clock or dynamically generated number. They will be provided by the caller as a list of rectangles to exclude.
2. Provide some sort of UI either as a web page or GUI that allows the user to select the images and view differences as an overlay on either of the images.

## Expected Deliverables

1. Source code.
2. Binary version of the algorithm that runs and produces output of comparison. No build should be required.
3. Output image showing the result of comparison.

## **Tips and Hints**

1. Use javax.imageio.ImageIO to read/write images.
2. Consider java.awt.image.BufferedImage#createGraphics() to draw on in-memory images.