Title: Word Search Solver

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Description:
For this project, I will be working alone and using MATLAB. The main goal of the project is to solve word search puzzles. The user will input an image/picture of a word search puzzle, such as the one seen above. My algorithm will then perform OCR to process the letter grid as well as the word bank. I will then iteratively process the words in the word bank and find their locations in the puzzle. The end result will be a solved puzzle as the output image, with oval outlines such as the one seen above, corresponding in color to the crossed out word in the word bank. There might be opportunity to extend the project to include multiple languages.

There are a few main challenges in this project. Of primary concern will be to find a good general binarization/thresholding algorithm to handle the variety of input images [1]. I hope to allow carelessly taken photos of word searches. Another major challenge will be to find a good OCR algorithm to handle a variety of fonts and styles [2]. Finally, it will be important to write an efficient algorithm to solve the word search itself. It will be helpful to see how similar projects solving other puzzles using OCR (such as Sudoku [3]) were completed.

References: