French/English Translation
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Abstract
This project uses a combination of hard-coding and statistical techniques in the field of computational linguistics to translate French to English and English to French well enough to be understandable to someone who knows only the output language.

Introduction
Starting with a word-for-word translation from French to English and vice versa, I will give the program grammar rules so that it correctly translates increasingly complex grammar structures. This project can change in size as needed throughout the year. At a minimum, the program should be able to deal with "subject verb object" type sentences with a wide vocabulary range in all tenses. At a maximum, the program will be able to translate all grammatically correct, non-idiomatic sentences in both languages with correct agreement of number and gender and context-specific translation of words with multiple definitions.

Purpose
This project uses computational linguistics to serve students of French or English as a non-native language as well as those who know only one of these languages. The output should be understandable even to someone who knows only the output language. Even a less than perfect translation is useful for surfing the web, reading texts in a foreign language, and communication with someone from another country. It can also be used for students to check their writing by translating back to their native tongue. They can check mechanics and make sure the writing is comprehensible by checking these areas of the translation.

Expected Results
This project will determine methods to best understand the French and English languages and to best translate between the two. Comparing the project with web-based translation programs will provide a standard to compare my program with. It will contrast the method of translation in which grammar rules are hard-coded into a program, which is the method I will primarily use, and the method in which the translation program "learns" grammar rules by using a few basic rules and going over a large corpus of written material in both languages (most current sophisticated programs).

At the end of the project, I will invite users to submit several sentences in either language to be translated. These inputs and corresponding outputs will be presented together to allow for analysis of the results. These outputs can be compared to those of several other, freely available automatic translators and determine which translations have more correct meanings and which are more grammatically correct.

Screen Shots:
Three stages of the Program

1) 
2) 
3)