CS/INFO 1305 AI Lab 1
Due Thursday, July 16, at 8:30am

1 NACLO problems

Complete the Maasai problem (handed out during lecture) and the Hawaiian problem from the North American Computational Linguistics Olympiad.

2 Online machine translation

Choose an online translation system, translate.google.com is one possibility, but you may use any you like (if you use another, indicate the URL you chose). Using this system, complete the following tasks.

1. Translate a few sentences from the reading (e.g., Chapter 1 of the textbook) into another language, and then translate the result back into English. Include the original and resulting text in your writeup. What do you think of this translation? Does it preserve the meaning of the original text? Is it grammatical? What sorts of errors are made?

2. Go to a news site in a language you *do not know*. Translate the webpage into English, and choose an article. What do you think of the translation? Can you understand what the article is about? What sorts of errors are made?

3 What to submit

You should submit one document, containing the following pieces:

1. Your solutions to the NACLO problems

2. The translation system you used

3. The result of translating selected sentences from the textbook. Include the original sentences.

4. The answers to the questions above.

Hawaiian

Puzzle by V. Belikov. English adaptation by Valentin Vydrin and Thomas E. Payne

Hawaiian is a Polynesian language, spoken fluently by about 2000 people.

The following Hawaiian sentences, with their English translations, are about a girl named Mele and a boy named Keone:

1. He has seven elder brothers.	Ehiku ona kaikuaana.
2. Mele has one brother.	Ekahi o Mele kaikunane.
3. Keone has one younger brother.	Ekahi o Keone kaikaina.
4. Mele has no elder sisters.	Aohe o Mele kaikuaana.
5. Keone has no sisters.	Aohe o Keone kaikuahine.
6. I have one canoe.	Ekahi ou waa.
7. Mele has no younger sisters.	Aohe o Mele kaikaina.

A: There are two possible English translations for the following Hawaiian sentence. What are they?

Aohe ou kaikuaana.

B: Translate the following sentence into English and indicate who is speaking, Mele or Keone:

Aohe ou kaikuahine.

C. The following English sentences would be difficult to translate directly into Hawaiian. Explain why this is true.

Keone has one brother.

Mele has one younger brother.

Cognates

Linguists group languages into families based on their historical relationship. English belongs to the Indo-European language family along with several hundred other languages and dialects. The Indo-European family of languages is further divided into branches that include Germanic languages (e.g., English, German, and Norwegian), Indo-Iranian languages (such as Hindi, Bengali, or Farsi), and Romance languages (languages descended from Latin such as French, Italian, and Romanian). All these languages share some common vocabulary. Languages in the same branch generally share a greater deal of their vocabulary. Words that are historically related in different languages are called cognates.

Many words in English are cognates that also appear in Romance languages. These languages are also related to each other. The list below includes translations of a number of English words into some number of Romance languages.

> cantare, escola, stella, étoile, estrela, étudier, scuola, escuela, cantar, studiare, école, estrella, estel, estudar, chanter

Questions

1. How many different English words do the fifteen words above correspond to? Hints: Cognates are likely to have somewhat similar spelling. Try to lay out the words in a grid. Note that the same word may appear with identical spelling in more than one language.

2. How many languages are included in the sample?

3. Can you try and translate each of these words into English (knowing that some words in English are also cognates to the words above)?

4. "Escuela" is one of the words in Spanish on the list above. How do you say "étudier" in Spanish (that word is not on the list)? Try to get as close as possible to the correct translation, even if you cannot get it quite right. Explain how you arrived at the solution.