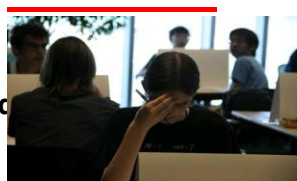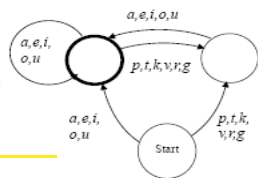# n a c l o

North American Computational Linguistics Olympiad
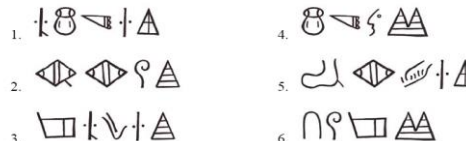
What is NACLO?

A contest in which high school students learn about linguistics and language technologies by solving puzzles

The following are inscriptions in hieroglyphic *Luvian*, an ancient Anatolian language related to (and once thought to be) Hittite. These writings were totally incomprehensible until one scholar discovered the key: many of the words were names of regions, cities, and kings.

Above are six inscriptions that correspond to the names of two regions (*Khamatu, Palaa*), two cities (*Kurkuma, Tuvarnava*), and two kings (*Varpalava, Tarkumuva*). Your job is to match each inscription with the name that it represents. The process you use to solve this puzzle is very similar to what archeological linguists actually do when they discover writings and inscriptions in unknown languages.

Original problem by A. N. Zhurinskj. English adaptation by Valentin Vydrin.

Here is a finite state automaton that can distinguish between possible and impossible words in Rotokas, a language spoken on the island of Bougainville off the coast of New Guinea. Rotokas has a very simple system of sounds and allows us to create a very small FSA.

What is linguistics?

Linguists study human language in general – what kinds of sounds do they have? What kinds of syllables? What kinds of grammar? How do children learn languages? Why is it so much harder for adults to learn languages? Why are there dialects?

How do students benefit?

NACLO helps students identify potential careers related to languages and language technologies and helps them learn about subjects they may want to study in college. They also exercise problem solving skills and have fun.

What is computational linguistics?

Computational linguistics is the science behind language technologies. You use language technologies when you speak to an automated telephone system, or to your car or phone; when you ask a computer to translate something for you; and every time you do a search in a Web browser.
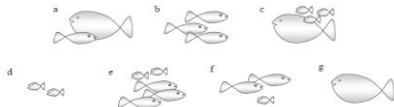
Timeline

Registration is now open: http://www.naclo.cs.cmu.edu

NACLO is free and open to all students under 20 years old who do not yet have a high school diploma.

E1 (practical). Below, seven fishermen describe their catch. Who caught what?

____ 1. "Mä hach'a challwawa challwataxa."
____ 2. "Kimsa hach'a challwawa challwataxa."
____ 3. "Mä challwa mä hach'a challwampiwa challwataxa."
____ 4. "Mä hach'a challwa kimsa challwallampiwa challwataxa."
____ 5. "Paya challwallawa challwataxa."
____ 6. "Mä challwalla paya challwampiwa challwataxa."
____ 7. "Kimsa challwa paya challwallampiwa challwataxa."

Also, watch out! *One of the fishermen is lying.*

Open Round: January 31, 2013

About 1500 students will compete in the US and Canada.
In the Pittsburgh area, you can compete at your school or at Carnegie Mellon University.

Invitational Round: March, 2013

100 students will be selected to compete.

Training: April – June, 2013

20 students will be selected for Skype-based training sessions.

International Linguistics Olympiad: July, 2013, Manchester, UK

8 students will represent the US.

Who sponsors NACLO?

Carnegie Mellon
Language Technologies Institute
School of Computer Science
Gelfand Center for Community Outreach
Department of English

The Association for Computational Linguistics
North American Chapter

MICHIGAN

YAHOO!

National Science Foundation
WHERE DISCOVERIES BEGIN

D E Shaw & Co

IOL International Linguistics Olympiad

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