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THE TWENTIETH ANNUAL

North American Computational Linguistics Open Competition

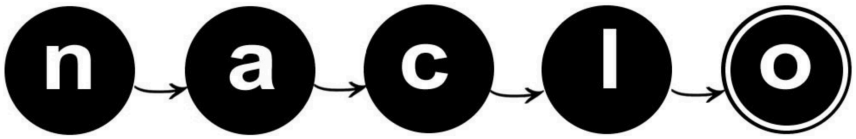
2026

Open Round: January 29, 2026

www.naclo.org

> *"Serious language puzzles that are surprisingly fun!"*
>
> —Will Shortz, *crossword editor of The New York Times and Puzzlemaster for NPR*

2026



Welcome to the twentieth annual North American Computational Linguistics Open Competition! We (the NACLO organizers) are excited for you to participate in this unique event. In order to be completely fair to all participants across North America, we need you to read, understand, and follow these rules completely.

Rules

1. The contest is three hours long and includes 9 problems, labeled A to I.
2. Follow the facilitators' instructions carefully.
3. No electronic devices of any kind may be used or accessed during the contest. All such devices must be turned off and put away as instructed by the facilitators. No aids are permitted other than blank paper and writing utensils.
4. If you want clarification on any of the problems, talk to a facilitator. The facilitator will consult with the jury before answering.
5. You may not discuss the problems with anyone except as described in items 4 & 12.
6. Each problem is worth a specified number of points, with a total of 100 points. No points will be given for explanations. **Make sure to fill out all the answer boxes properly in accordance with the guidelines on the cover of the Answer Sheets.**
7. All your answers should be written clearly in the Answer Sheets at the end of this booklet. **ONLY THE ANSWER SHEETS WILL BE GRADED.**
8. Write your name and NACLO ID on each page of the Answer Sheets.
9. The top 10% of participants (approximately) across the United States and Anglophone Canada in the Open Round will be invited to the Invitational Round.
10. Some problems are more difficult than others, but all can be solved using ordinary reasoning and some basic analytic skills. You don't need to know anything about linguistics or about these languages in order to solve them.
11. Don't be discouraged if you don't finish everything! This is a *contest*, and not a *test*—there is no "passing" or "failing" score. If we have done our job well, very few people will solve all these problems completely in the time allotted.
12. **DO NOT DISCUSS THE PROBLEMS UNTIL THEY HAVE BEEN POSTED ONLINE! THIS MAY BE A COUPLE OF MONTHS AFTER THE END OF THE CONTEST.**

Oh, and have fun!

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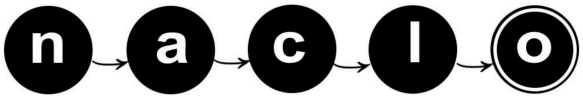

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Arul Kolla

Problem Credits:
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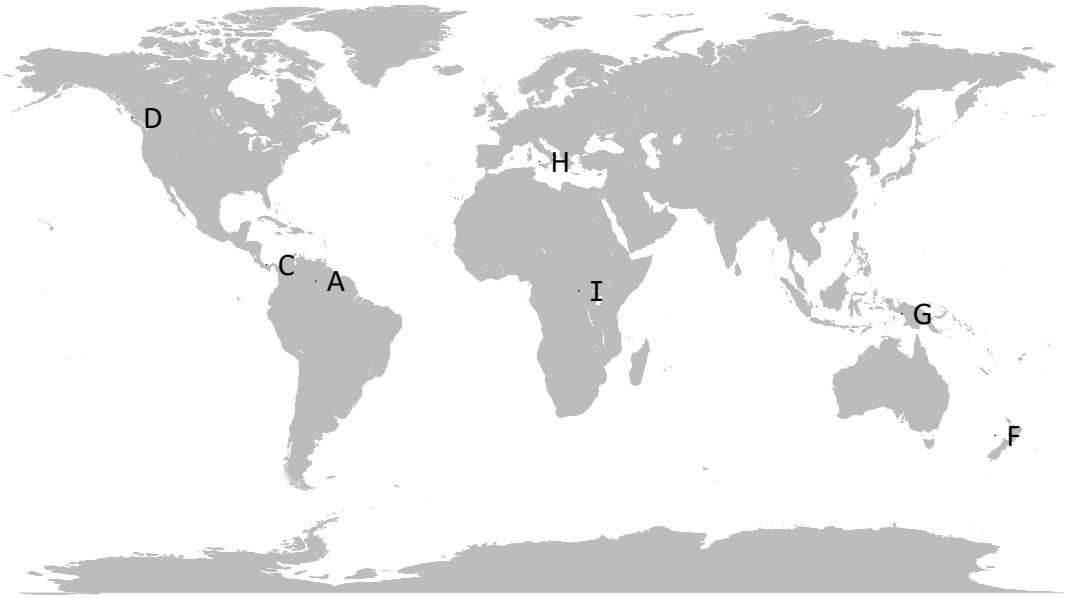
(B) Tom McCoy
(C) Devin Joe and Nina Stadermann
(D) Arul Kolla
(E) Kyle Zhang and Nina Stadermann
(F) Aidan Wang
(G) Arul Kolla
(H) Kyle Zhang
(I) Devin Joe



Locations in the map are approximate.

We are grateful for the support of many institutional and individual donors who make this contest possible.

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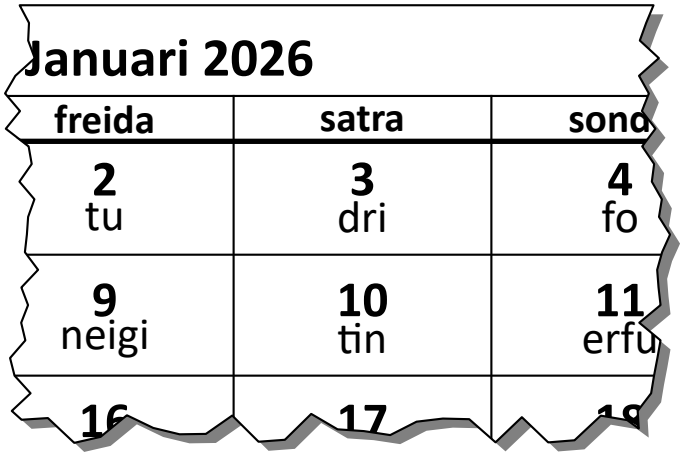
(A) The Horse Before the Cart (1/2) [10 Points]

Sranan Tongo is a language spoken by around 670,000 people in Suriname, a country on the northern coast of South America. Much of its vocabulary is based on English. For example, the Sranan Tongo word **kaw** is borrowed from English *cow*. It is also heavily influenced by various African languages and by Dutch, as Suriname is a former colony of the Netherlands.

You came across a Sranan Tongo calendar for this month, January 2026. A portion of the calendar is pictured below. (It may be helpful to know that today, January 29, is a Thursday.)

A1. Below are five days of the week in Sranan Tongo. In your Answer Sheets, identify the English day of the week they each correspond to.

1. **munde**
2. **sonde**
3. **tudewroko**
4. **fodewroko**
5. **dridewroko**



Below are some more words in Sranan Tongo, along with their English translations, given in arbitrary order.

6. **amerkankondre**
7. **asipen**
8. **asiwagi**
9. **babywagi**
10. **fokanti**
11. **liba**
12. **libakanti**
13. **osowroko**
14. **pikin kaw**

A. *calf*
B. *horse cart*
C. *horse pen*
D. *housework*
E. *river*
F. *riverside*
G. *square*
H. *stroller*
I. *the USA*

A2. In your Answer Sheets, match each Sranan Tongo word or phrase 6–14 to its English translation A–I.

Make sure you record your answers in your Answer Sheets!

(A) The Horse Before the Cart (2/2)

Below are some more words in Sranan Tongo, along with their English translations, given in arbitrary order.

15. **baiman**
16. **bakra**
17. **bakrakawfrei**
18. **bakratongo**
19. **fayadosu**
20. **fayatongo**
21. **freigron**
22. **gadobuku**
23. **gadokondre**
24. **gronman**
25. **manpikin**
26. **onifrei**
27. **pikintongo**
28. **pokudosu**
29. **wortubuku**
30. **wrokoman**

J. *airstrip*
K. *bee*
L. *Bible*
M. *customer*
N. *dictionary*
O. *Dutch language*
P. *employee*
Q. *farmer*
R. *flame*
S. *heaven*
T. *lighter (fire-producing device)*
U. *radio*
V. *son*
W. *uvula*
X. *white gadfly*
Y. *white person*

Notes: An *airstrip* is a strip of land where airplanes land and take off. A *gadfly* is a fly that feeds on the blood of large animals. A *uvula* is the small, teardrop-shaped piece of tissue that hangs at the back of the mouth.

A3. In your Answer Sheets, match each Sranan Tongo word 15–30 to its English translation J–Y.

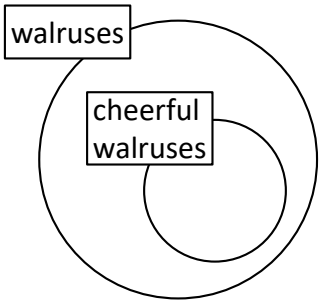
A4. Translate into English: **bakrakondre**, **faya**, **gado**, **pikin**, **wroko**.

A5. Translate into Sranan Tongo: *field*, *honey*, *music*, *Suriname*, *word*.

Make sure you record your answers in your Answer Sheets!

(B) Game: Set Match (1/1) [10 Points]

Consider the word *walruses* and the phrase *cheerful walruses*. The diagram on the right shows one way to illustrate the relationship between these phrases.



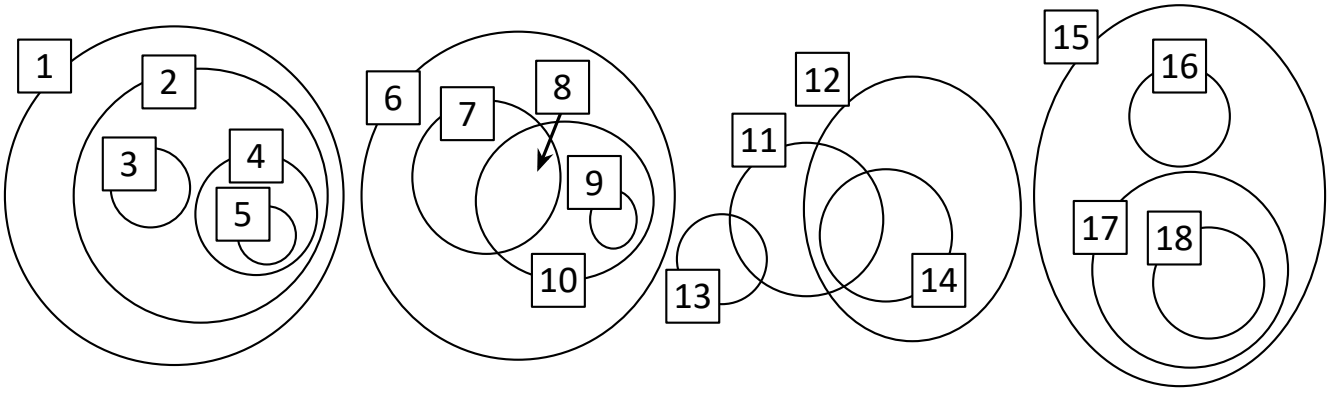
Each circle stands for the set of things that could be described by the relevant word or phrase. Since all cheerful walruses are walruses, the region for *cheerful walruses* is fully contained inside the region for *walruses*. The sizes of the circles are irrelevant; what matters is how they overlap and which ones are contained inside others.

This example relates to an important question: how does the meaning of a phrase relate to the meanings of the words that make it up? This question comes up in computational linguistics because computers that process language must be able to determine the meanings of complex phrases. In this problem, we highlight some of the nuances of this topic.

Note that this problem only gives a partial picture of meaning in language. The diagrams on this page depict the relationships between certain words and phrases, but they do not provide complete meanings for these words and phrases. Some of the nuances that are left out of this problem are important in linguistic theories, but for the sake of this problem you should only use the information on this page.

Below are 18 words and phrases given in arbitrary order, along with a diagram representing their meanings.

A. *alleged spies*
B. *berries*
C. *big elephants*
D. *blueberries*
E. *cars*
F. *elephants*
G. *fruits*
H. *future spies*
I. *green cars*
J. *green Italian cars*
K. *happy spies*
L. *Italian cars*
M. *purple Italian cars*
N. *small big elephants*
O. *small blueberries*
P. *small elephants*
Q. *spies*
R. *strawberries*



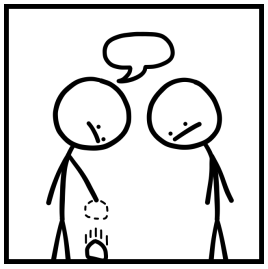
B1. Each of these words or phrases corresponds to one of the regions 1–18 in the diagram. In your Answer Sheets, match each region to the word or phrase it corresponds to. *Notes:*

- Each number goes with the circle that it touches, except for 8, which goes with the intersection of the 7 and 10 circles.
- *Alleged spies* are people who have been accused of being spies but who may or may not actually be spies.
- The phrase *small big elephants* may be confusing without context. Here's an example where it can occur: "That's a big elephant, but compared to other big elephants it's relatively small; it's a small big elephant."
- We assume that cars cannot be both green and purple at the same time.
- We use the informal definition of the word *berry*, in which strawberries are a type of berry, even though there is a technical definition of *berry* that excludes strawberries.
- We assume that elephants cannot be spies. In real life, this is a dangerous assumption to make.

Make sure you record your answers in your Answer Sheets!

(C) Sheninagans in Kogi (1/1) [10 Points]

Kogi is a language spoken by around 10,000 people in Colombia. Two Kogi-speaking friends are talking to each other. The picture below shows one situation where the phrase **akhiengua nigukú** might occur in their dialogue.

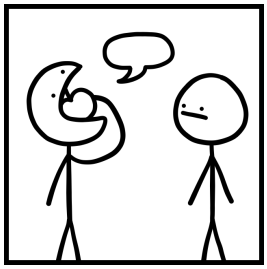


akhiengua nigukú

Below are eight more excerpts of dialogue and the situations in which they might occur, in arbitrary order.

1. **akhiengua nagukú**
2. **akhiengua namagu**
3. **ga nigukú**
4. **ga nimagu**
5. **kwisaté nagukú**
6. **kwisaté nigukú**
7. **mowi nagukú**
8. **mowi nimagu**

A.



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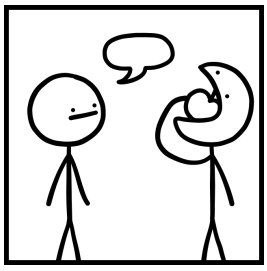
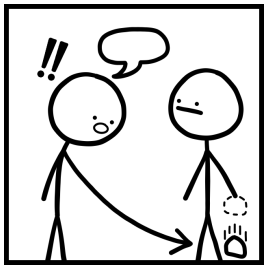
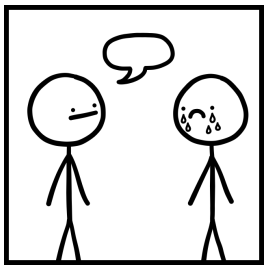


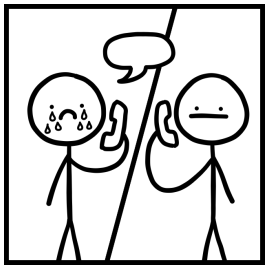
C.



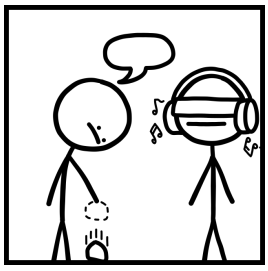
D.



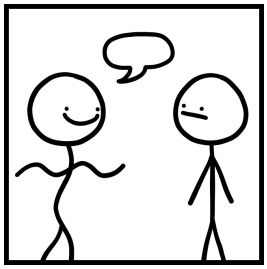
E.



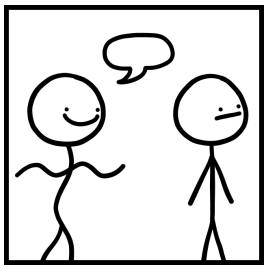
F.



G.



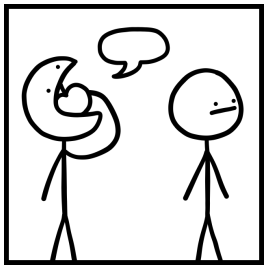
H.



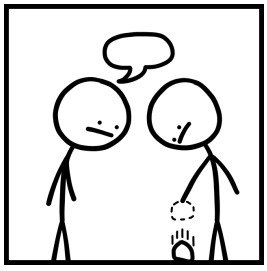
C1. In your Answer Sheets, match each excerpt of dialogue 1–8 to its corresponding situation A–H.

C2. Write the Kogi dialogue that would be appropriate for each of the following situations:

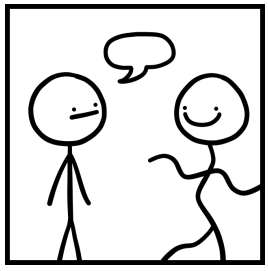
9.



10.



11.



Make sure you record your answers in your Answer Sheets!

(D) Witsuwit'en Word Salad (1/1) [10 Points]

Witsuwit'en is a language spoken by around 3,500 people in British Columbia, Canada. Here are some sentences in Witsuwit'en and their English translations. It may be helpful to know that **c'**, **dz**, **gh**, **kw**, **k'**, **lh**, **ts**, **t'**, **y**, and **'** are consonants, while **ë** and **ï** are vowels.

lemidec yini'alh	—	*He's eating a potato.*
c'ighïz nildïlh	—	*He's eating (e.g. hard-boiled) eggs.*
lisuc hildïlh	—	*He's eating sugar.*
lesucam yini'alh	—	*He's eating a turnip.*
be' yi'alh	—	*He's eating dried fish.*
dïndze yini'alh	—	*He's eating a blueberry.*
tazil yi'alh	—	*He's eating (thick) soup.*
c'it'an hildïlh	—	*He's eating leaves (e.g. kale).*
c'it'an tsïlhghis yini'alh	—	*He's eating a head of lettuce.*
hida tsiy yi'alh	—	*He's eating moose meat.*
silhts'ec hildïlh	—	*He's eating (ground) pepper.*
k'inïh sigï hildïlh	—	*He's eating cornflakes.*
lhës yi'alh	—	*He's eating a slice of bread.*
cit'an hilhtsin nildïlh	—	*He's eating onions.*
ligalat yi'alh	—	*He's eating a carrot.*
c'ik'agh hildïlh	—	*He's eating strips of bacon.*
lemidec nïlhtiz (1)	—	*He's eating mashed potatoes.*
lemidec st'ë (2)	—	*He's eating french fries.*
lemidec sigï (3)	—	*He's eating a potato chip.*
gus (4)	—	*He's eating stalks of rhubarb.*
c'itsiy dïnïltiz (5)	—	*He's eating sausages.*
lhës sigï (6)	—	*He's eating a cracker.*
sniw (7)	—	*He's eating cherries.*
tsalic këkwin' (8)	—	*He's eating a hazelnut.*
mï'o (9)	—	*He's eating cranberries.*
tselh ghïl (10)	—	*He's eating a tomato.*

turnip

head of lettuce

cornflakes

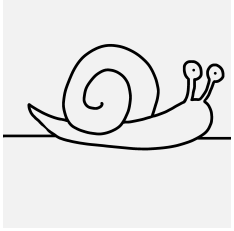
rhubarb

hazelnuts

D1. In your Answer Sheets, fill in the gaps (1)–(10).

Make sure you record your answers in your Answer Sheets!

(E) A Typical Problem (1/2) [15 Points]

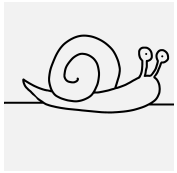


What do you see on the right? You may recognize the image as a snail; however, that quick judgment comes from a lot of behind-the-scenes processing. Your brain picks up on a variety of visual cues, perhaps including a rounded shell, two eyes poking out, and an outstretched body. Then, it combines these cues to make a guess that the image is of a snail.

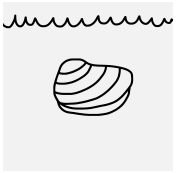
Even though the picture is not photorealistic, those cues let you quickly identify the animal in the image. In machine learning, these cues are called *features*: aspects of data that a system uses to decide on a label (in this case, the label is "snail").

Now that we've seen how your brain might use features to identify a snail, let's see how a simple algorithm might use features to make its own guesses. NACLOLabs wants to design an algorithm that can take in an image and determine which one of eight animals it is.

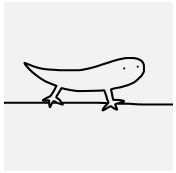
This algorithm will look at the image and ask three questions as its features: *is it underwater?*, *does it have legs?*, and *does it have a shell?*. Then, it will look up the row of the table that matches those features, and produce what it sees in the "output" column. For example, if the answer to all three questions is no (represented by N), then it says that the image contains a snake. However, NACLOLabs left some gaps in the table!



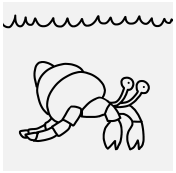
snail



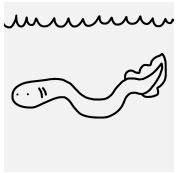
clam



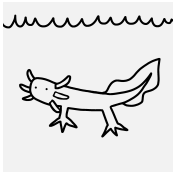
lizard



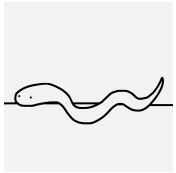
hermit crab



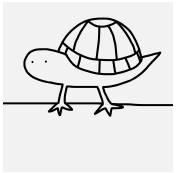
eel



axolotl



snake



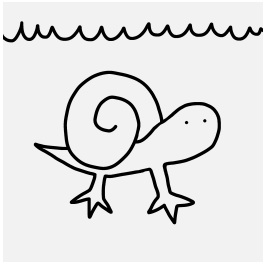
tortoise

(a)	(b)	(c)	Output
N	N	N	*snake*
N	N	Y	*snail*
N	Y	(1)	*clam*
N	(2)	(3)	*eel*
Y	(4)	(5)	*lizard*
Y	(6)	N	*axolotl*
Y	N	Y	*tortoise*
Y	Y	Y	*hermit crab*

E1. On your Answer Sheets, match each of **(a)**, **(b)**, and **(c)** to its feature (*underwater*, *has legs*, and *has a shell*).

E2. Fill in the gaps (1)–(6) in the table above so that the algorithm works on all eight images shown.

E3. NACLOLabs decides to run its animal-labeling algorithm on an additional input, but gets an unexpected result. Which animal does the algorithm output for the image below?



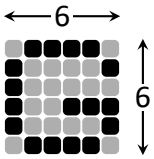
One way that NACLOLabs can improve its algorithm is to use the same feature for several regions of an image, so that it outputs multiple values for each feature (the *value* of a feature refers to whether that feature is indicated as being Y or N). We will see this approach in action on the next page!

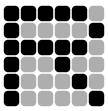
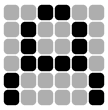
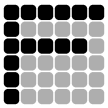
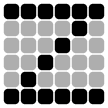
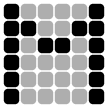
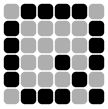
Make sure you record your answers in your Answer Sheets!

(E) A Typical Problem (2/2)

One place where computational linguistics uses the idea of features is in *optical character recognition*. These methods represent each letter by decomposing it into a set of features. By using the values of all the features together, we can make a reasonable guess about what the original letter is[1]! For example, a circle shape is likely an **O**, while a circle with a tail is likely a **Q**.

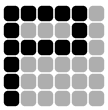
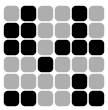
NACLOLabs uses a basic font where every capital letter sits on a grid of thirty-six pixels; one example is shown on the right. For each feature, the algorithm considers nine regions of this grid and outputs a sequence of yes and no answers based on that feature. Six inputs and four features are listed below, but there are some gaps in the table.



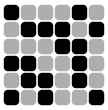
Input	Feature 1	Feature 2	Feature 3	Feature 4	Output
	YNN/YYN/NNN	YYY/YYY/YNY	NYN/NNN/YNN	NNY/NNN/NNY	**R**
	NNN/NNN/NNN		NYN/YYY/YNY		**A**
		YYY/YYY/YNN	(7)		**F**
	(8)	YYY/NYN/YYY		NNN/NYN/NNN	**Z**
	(9)	(10)			**M**
			(11)	(12)	**Q**

E4. Fill in the gaps (7)–(12). (You don't have to fill in the shaded cells.)

E5. NACLOLabs decides to run its letter-labeling algorithm on some additional inputs, but gets some unexpected results. Which letter does the algorithm output for each of the two inputs below?

E6. Sometimes the algorithm gets confused and has two possible answers for a given input. Which two letters does the algorithm output for the input below?



[1] In fact, some NACLO problems are often graded automatically with these techniques!

Make sure you record your answers in your Answer Sheets!

(F) Meowing in Māori (1/1) [15 Points]

Māori is a language spoken by around 50,000 people in New Zealand. Here are some sentences in Māori and their English translations. It may be helpful to know that **ng** and **wh** are consonants, and that the mark ¯ denotes a long vowel.

Kāhore au i te kite i a koe.	—	*I do not see you.*
Kua kite koe i a ia.	—	*You have seen her.*
Kei te haere tāu ngeru ki ngā whare.	—	*Your cat goes to the houses.*
Kāhore ngā tāne kia haere ki tōu whare.	—	*The men have not gone to your house.*
Kei te kite tōku matua tāne i āu ngeru.	—	*My father sees your cats.*
Kua kite au i tētahi whare.	—	*I have seen a house.*
Kei te haere āku ngeru ki tāna tāne.	—	*My cats go to her husband.*
Kāhore koe kia kōrero ki ahau.	—	*You have not spoken to me.*
Kāhore tāku tāne i te haere ki te wahine.	—	*My husband does not go to the woman.*
Kua kite te ngeru i ōna whare.	—	*The cat has seen her houses.*
Kāhore tāku tamawahine kia kōrero ki āku tamatāne.	—	*My daughter has not spoken to my sons.*

F1. In your Answer Sheets, translate into English:

1. **Kei te kite au i ētahi wahine.**
2. **Kua haere ia ki te whare.**
3. **Kāhore āna ngeru kia kite i ōku whare.**
4. **Kei te kōrero tōu matua wahine ki a ia.**

F2. In your Answer Sheets, translate into Māori:

5. *I have not seen your houses.*
6. *Some men have seen me.*
7. *Her parents go to my house.*
8. *Your wife has spoken to you.*

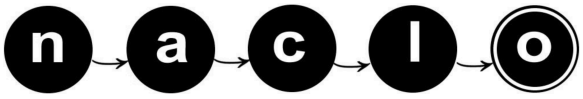
(G) A Manam Family (1/1) [10 Points]

Manam is a language spoken by approx. 8,000 people in Papua New Guinea. The table below shows how three sisters and three brothers in one Manam family address each other. Each cell indicates how the leftmost person in the row refers to the one at the top; for example, Tsedam refers to Mamboti as **a'o**.

	Tsedam	Lakia	Mamboti	Kakodo	Baliau	Aibobe
Tsedam	**ngau**	(1)	**a'o**	**tari**	**to'a**	**tari**
Lakia	(2)	**ngau**	(3)	(4)	**tari**	**a'o**
Mamboti	**to'a**		(5)	**to'a**		
Kakodo	**to'a**		**tari**	(6)	**to'a**	**a'o**
Baliau	**a'o**	(7)	(8)	**tari**	**ngau**	(9)
Aibobe	(10)	(11)		**to'a**	(12)	**ngau**

G1. In your Answer Sheets, fill in the gaps (1)–(12). You don't have to fill in the shaded cells.

Make sure you record your answers in your Answer Sheets!



(H) A Tale of Three Scripts (1/1) [15 Points]

Albanian is a language spoken by around 7.5 million people, primarily in Albania and neighboring regions. The modern language is written in a standardized Latin-based alphabet (using many of the same letters English does), but this was not always the case. Earlier writers used several different scripts, including scripts created for Albanian in the 18th century such as Elbasan, created for a single document known as the Elbasan Gospel Manuscript, and Todhri, invented by Albanian teacher Theodhor Haxhifilipi.

Below are fifteen Albanian words. Each word appears exactly twice: once in the left column and once in the right column. The two instances of each word are in different scripts (Elbasan, Todhri, or the modern Albanian Latin script), and the columns are arranged in <u>arbitrary order</u>.

1. mbasi
2. 𐔰𐔴𐔤𐔦𐔻𐔵
3. njeriu
4. 𐔖𐔘𐔤𐔴𐔣
5. 𐔠𐔬𐔹𐔦𐔭𐔦
6. 𐔠𐔪𐔰𐔯𐔶
7. 𐔳𐔘𐔯𐔯
8. 𐔣𐔰𐔤𐔬𐔡𐔷𐔫
9. 𐔴𐔬𐔶𐔴
10. është
11. 𐔷𐔘𐔯𐔦𐔯
12. 𐔱𐔦𐔯𐔦𐔯
13. gëzojnë
14. kohën
15. përsa

A. njohja
B. 𐔫𐔣𐔘𐔷𐔴
C. lindur
D. kundër
E. shtetet
F. 𐔗𐔷𐔤𐔘𐔴
G. 𐔶𐔡𐔢𐔬𐔘𐔫𐔡
H. 𐔹𐔴𐔘
I. burrave
J. 𐔹𐔶𐔬𐔺𐔦𐔴
K. 𐔠𐔬𐔺𐔯𐔴
L. gjithë
M. 𐔓𐔬𐔣𐔰𐔷𐔻𐔵
N. 𐔘𐔯𐔶𐔹𐔴
O. 𐔡𐔅𐔴𐔡

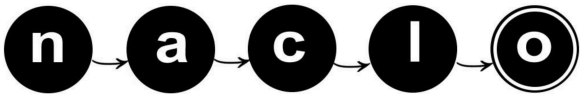
H1. In your Answer Sheets, match each Albanian word 1–15 to its corresponding word A–O.

H2. Write in the modern script: **(a)** 𐔳𐔘𐔰𐔦𐔯 (Todhri) **(b)** 𐔺𐔤𐔘𐔘𐔫𐔡 (Elbasan)

H3. Write in the Elbasan script: **(a)** kështu **(b)** njerëzit

H4. Write in the Todhri script: **(a)** gjatë **(b)** nënshtrohet

<u>Make sure you record your answers in your Answer Sheets!</u>



(I) Up in Flames (1/1) [5 Points]

Ik is a language spoken by around 14,000 people in Uganda. Below are some nouns in Ik in their singular and plural forms, along with their English translations.

It may be helpful to know that **ɛ**, **ɨ**, **ɔ**, and **ʉ** are vowels pronounced similarly to **e**, **i**, **o**, and **u**, respectively, but with the base of the tongue positioned farther back[1]. All of **ɓ**, **ɗ**, **ɟ**, **ƙ**, **ŋ**, **ɲ**, and **ts'** are consonants.

Singular	Plural	Translation
agɨta	**agɨtɨka**	*metal ring*
arira	(1)	*flame*
babaa	**babaika**	*armpit*
bɛfa	(2)	*viper*
ɓoo	(3)	*cliff*
ats'a	(4)	*fig tree*
isuɗama	**isuɗamika**	*lie*
ɟakama	(5)	*elder, ancestor*
ɟulama	(6)	*chunk, piece*
kale	**kalitini**	*debt*
keama	**kea**	*soldier*
kɨnama	**kɨnamɨka**	*mushroom*
lɔŋɔtɔma	**lɔŋɔta**	*enemy*
ɲanɨnɔɔ	(7)	*leather whip*
ɲeƙurumoti	**ɲeƙurumotika**	*trench*
(8)	**ŋɨmɔkɔkaa**	*young man*
ɔɟa	**ɔɟɨtɨnɨ**	*sore, wound*
ts'ɛa	**ts'ɛɨtɨnɨ**	*skin, hide*

I1. In your Answer Sheets, fill in the gaps (1)–(8).

[1]Ik is usually written with tones, but they have been ignored for the purposes of this problem.

Make sure you record your answers in your Answer Sheets!

The North American Computational Linguistics Open Competition
www.naclo.org

Answer Sheets

NACLO ID					

Name: _____

Contest Site: _____

Site ID: | | | | |

Grade: | |

Instructions for Filling Out the Answer Sheets

1. Write all answers clearly and in **dark, legible** writing. Because your responses will be scanned (and some may be graded automatically using optical character recognition software), faint or illegible responses cannot be graded. If your answers cannot be read, they may not be scored properly!
2. To change a response, **erase it cleanly**. If you cannot, clearly cross out the incorrect answer completely and write the new answer next to it.
3. For questions involving selecting one answer out of a list, fill in the circle for the **singular correct option** completely: ● Correct option ○ Incorrect option

   Examples of **INVALID** marks: ⊘ ⊗ ⊖ ⊙ ◶
4. For questions of the form "select all that apply", fill in the appropriate boxes for **all correct options** completely: ■ Correct option 1 ☐ Incorrect option ■ Correct option 2

   Examples of **INVALID** marks: ☑ ☒ ⊟ ⊡ ◪
5. For matching questions, write the **CAPITAL LETTER** of each correct match clearly beside its corresponding number: 1. A 2. C 3. B

SIGN YOUR NAME BELOW TO CONFIRM THAT YOU WILL NOT DISCUSS THESE PROBLEMS WITH ANYONE UNTIL THEY HAVE BEEN OFFICIALLY POSTED ON THE NACLO WEBSITE.

Signature: _____

YOUR NAME: NACLO ID: | | | | | | |

Answer Sheets (1/6)

(A) The Horse Before the Cart

A1. For each Sranan Tongo day of the week, fill in the circle for its corresponding English day of the week:

1. **munde** — ○ Sun ○ Mon ○ Tue ○ Wed ○ Thu ○ Fri ○ Sat
2. **sonde** — ○ Sun ○ Mon ○ Tue ○ Wed ○ Thu ○ Fri ○ Sat
3. **tudewroko** — ○ Sun ○ Mon ○ Tue ○ Wed ○ Thu ○ Fri ○ Sat
4. **fodewroko** — ○ Sun ○ Mon ○ Tue ○ Wed ○ Thu ○ Fri ○ Sat
5. **dridewroko** — ○ Sun ○ Mon ○ Tue ○ Wed ○ Thu ○ Fri ○ Sat

A2. Write one capital letter (A–I) per box to match each Sranan Tongo word or phrase to its English translation:

6. ☐ 7. ☐ 8. ☐ 9. ☐ 10. ☐ 11. ☐ 12. ☐ 13. ☐ 14. ☐

A3. Write one capital letter (J–Y) per box to match each Sranan Tongo word to its English translation:

15. ☐ 16. ☐ 17. ☐ 18. ☐ 19. ☐ 20. ☐ 21. ☐ 22. ☐
23. ☐ 24. ☐ 25. ☐ 26. ☐ 27. ☐ 28. ☐ 29. ☐ 30. ☐

A4. Translate each Sranan Tongo word into English:

bakrakondre ☐ **faya** ☐ **gado** ☐
pikin ☐ **wroko** ☐

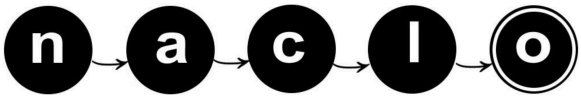
A5. Translate each English word into Sranan Tongo:

field ☐ *honey* ☐ *music* ☐
Suriname ☐ *word* ☐

(B) Game: Set Match

B1. Write one capital letter (A–R) per box to match each region to its corresponding word or phrase:

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐
7. ☐ 8. ☐ 9. ☐ 10. ☐ 11. ☐ 12. ☐
13. ☐ 14. ☐ 15. ☐ 16. ☐ 17. ☐ 18. ☐



YOUR NAME: NACLO ID: | | | | | | |

Answer Sheets (2/6)

(C) Sheninagans in Kogi

C1. Write one capital letter (A–H) per box to match each Kogi excerpt to its corresponding situation:

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☐ 8. ☐

C2. Write the Kogi dialogue that would be appropriate for each situation 9–11:

9. ☐ 10. ☐ 11. ☐

(D) Witsuwit'en Word Salad

D1. For each Witsuwit'en sentence, fill in the circle next to the word that completes each blank:

(1)	**lemidec nïlhtiz**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating mashed potatoes.*
(2)	**lemidec st'ë**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating french fries.*
(3)	**lemidec sigï**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating a potato chip.*
(4)	**gus**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating stalks of rhubarb.*
(5)	**c'itsiy dïnïltiz**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating sausages.*
(6)	**lhës sigï**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating a cracker.*
(7)	**sniw**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating cherries.*
(8)	**tsalic këkwin'**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating a hazelnut.*
(9)	**mï'o**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating cranberries.*
(10)	**tselh ghïl**	○ **hildïlh**	○ **nildïlh**	○ **yini'alh**	○ **yi'alh**	— *He's eating a tomato.*

(E) A Typical Problem

E1. Match each row **(a)**, **(b)**, and **(c)** of the table to its feature:

(a) — ○ *underwater* ○ *has legs* ○ *has a shell*
(b) — ○ *underwater* ○ *has legs* ○ *has a shell*
(c) — ○ *underwater* ○ *has legs* ○ *has a shell*

E2. Fill in the gaps in the table by filling in the appropriate circle (the shaded cells are already given):

(a) *(see **E1**)*	**(b)** *(see **E1**)*	**(c)** *(see **E1**)*	**Output**
N	Y	○ Y ○ N	*clam*
N	○ Y ○ N	○ Y ○ N	*eel*
Y	○ Y ○ N	○ Y ○ N	*lizard*
Y	○ Y ○ N	N	*axolotl*

E3. Fill in the circle corresponding to the animal the algorithm detects:

○ *snake* ○ *snail* ○ *clam* ○ *eel* ○ *lizard* ○ *axolotl* ○ *tortoise* ○ *hermit crab*

Problem (E) continues on the next page.

YOUR NAME: NACLO ID:

Answer Sheets (3/6)

(E) A Typical Problem (continued)

E4. Fill in the gaps in the table by writing one capital letter (`Y` or `N`) in each box:

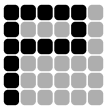
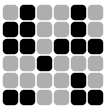
(7) ___ / ___ / ___ (8) ___ / ___ / ___

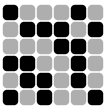
(9) ___ / ___ / ___ (10) ___ / ___ / ___

(11) ___ / ___ / ___ (12) ___ / ___ / ___

For convenience, the table is reprinted below; however, answers marked in the table will **not be graded**:

Input	Feature 1	Feature 2	Feature 3	Feature 4	Output
		YYY/YYY/YNN	(7)		F
	(8)	YYY/NYN/YYY		NNN/NYN/NNN	Z
	(9)	(10)			M
			(11)	(12)	Q

E5. Write the capital letter the algorithm outputs:  ☐  ☐

E6. Write the two capital letters the algorithm outputs, one per box (in either order):  ☐ & ☐

(F) Meowing in Māori

F1. Translate to English:

1. **Kei te kite au i ētahi wahine.**
2. **Kua haere ia ki te whare.**
3. **Kāhore āna ngeru kia kite i ōku whare.**
4. **Kei te kōrero tōu matua wahine ki a ia.**

Problem (F) continues on the next page.

YOUR NAME: NACLO ID: | | | | | | |

Answer Sheets (4/6)

(F) Meowing in Māori (continued)

F2. Translate into Māori:

5. *I have not seen your houses.*

6. *Some men have seen me.*

7. *Her parents go to my house.*

8. *Your wife has spoken to you.*

(G) A Manam Family

G1. Fill in the gaps by marking the appropriate circles:

	ngau	a'o	tari	to'a
(1)	○	○	○	○
(2)	○	○	○	○
(3)	○	○	○	○
(4)	○	○	○	○
(5)	○	○	○	○
(6)	○	○	○	○

	ngau	a'o	tari	to'a
(7)	○	○	○	○
(8)	○	○	○	○
(9)	○	○	○	○
(10)	○	○	○	○
(11)	○	○	○	○
(12)	○	○	○	○

For convenience, the table is reprinted below; however, answers marked in the table will **not be graded**:

	Tsedam	Lakia	Mamboti	Kakodo	Baliau	Aibobe
Tsedam	**ngau**	(1)	**a'o**	**tari**	**to'a**	**tari**
Lakia	(2)	**ngau**	(3)	(4)	**tari**	**a'o**
Mamboti	**to'a**		(5)	**to'a**		
Kakodo	**to'a**		**tari**	(6)	**to'a**	**a'o**
Baliau	**a'o**	(7)	(8)	**tari**	**ngau**	(9)
Aibobe	(10)	(11)		**to'a**	(12)	**ngau**

NOT GRADED

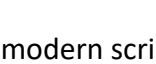
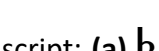
YOUR NAME: NACLO ID: | | | | | | |

Answer Sheets (5/6)

(H) A Tale of Three Scripts

H1. Write one capital letter (A–O) per box to match each Albanian word in the left column to its corresponding word in the right column:

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☐ 8. ☐
9. ☐ 10. ☐ 11. ☐ 12. ☐ 13. ☐ 14. ☐ 15. ☐

H2. Write in the modern script: **(a)**  **(b)** 

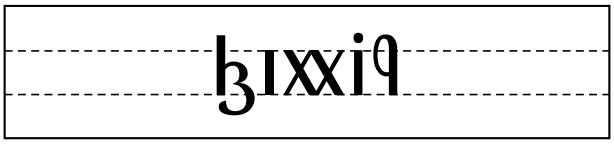
H3. Write the following words in the Elbasan script. **Please write clearly!** Use the dotted lines provided as a guide: the tops and/or bottoms of some symbols should touch the dotted line, and other symbols should have parts that extend above or below the dotted line. As an example, here is the Elbasan word from **H2**, as it would be written within the dotted lines:

Your writing does not need to be picture-perfect, but it does need to clearly distinguish the symbol you are writing from other symbols. The dotted lines should help you do this.

(a) kështu

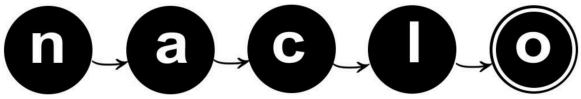
(b) njerëzit

H4. Write the following words in the Todhri script. **Please write clearly!** Follow the same guidelines as before; as an example, here is the Todhri word from **H2**, as it would be written within the dotted lines:



(a) gjatë

(b) nënshtrohet



YOUR NAME: NACLO ID: | | | | | | |

Answer Sheets (6/6)

(I) Up in Flames

I1. Fill in the gaps in the table:

Singular	Plural	Translation
arira	(1)	*flame*
bɛfa	(2)	*viper*
ɓoo	(3)	*cliff*
ats'a	(4)	*fig tree*
ɟakama	(5)	*elder, ancestor*
ɟulama	(6)	*chunk, piece*
ɲanɨnɔɔ	(7)	*leather whip*
(8)	**ŋɨmɔkɔkaa**	*young man*

Questionnaire

When you are free, please take a moment to complete the brief questionnaire below. This does not affect your score, but it helps us make future NACLO contests better. Thank you!

Select **exactly one** answer for each of the following:

1. Which problem did you enjoy the most?
   ○ **(A)** ○ **(B)** ○ **(C)** ○ **(D)** ○ **(E)** ○ **(F)** ○ **(G)** ○ **(H)** ○ **(I)**
2. Which problem did you enjoy the least?
   ○ **(A)** ○ **(B)** ○ **(C)** ○ **(D)** ○ **(E)** ○ **(F)** ○ **(G)** ○ **(H)** ○ **(I)**
3. Which problem did you find easiest?
   ○ **(A)** ○ **(B)** ○ **(C)** ○ **(D)** ○ **(E)** ○ **(F)** ○ **(G)** ○ **(H)** ○ **(I)**
4. Which problem did you find hardest?
   ○ **(A)** ○ **(B)** ○ **(C)** ○ **(D)** ○ **(E)** ○ **(F)** ○ **(G)** ○ **(H)** ○ **(I)**

If you have any other miscellaneous feedback, write it below: