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History of Writing Final Project
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The inspiration for my creative project comes from a few sources. When I first started out I was originally going to make a simple essay about the Canadian Aboriginal Syllabics system, why I think it is particularly interesting (an abugida where the quality of the vowels depends on the orientation of the consonant) and why it should be taught in this class (we don't spend much time discussing abugidas, which are a fascinating and unique type of writing system). However, when explaining my paper to a group on the last day of class, someone mentioned that the low number of characters combined with the rotational aspect could lend the system to a very interesting way of typing. Recently I had also become passionate about the process behind unicode encoding and the push to get every script encoded.[1] The Syllabics system being entirely encoded[2] served in part as inspiration for this project, where I programmed a prototype typing system for Syllabics, which takes input from a QWERTY keyboard and outputs syllabics characters. It is not merely a 1-1 mapping of Roman characters, but a wholesale change in typing which relies on the use of cardinal directions for vowels. Taking inspiration from the lectures in class about Chinese typing systems, this project makes a point about how the modern keyboard setup is optimized for the Roman alphabet, and how other writing systems may benefit from a different framework for typing.

An immediate difficulty in this project is choosing which version of the system to use. The syllabics system was originally invented by James Evans for the Cree language in 1840, but since then it has been adapted to countless other languages in North America, with symbols being added, modified, or used to represent different sounds as needed. I eventually settled on the original Western Cree system as represented in figure 1 of "The Cree Syllabary and the Writing System Riddle: A Paradigm in Crisis."[3] I also cross referenced with other sources to try to piece together a consistent system. Sources include the tables in "The Cree Writing System"[4] and *Cree Syllabic Literacy: Cultural Context and Psychological Consequences.*[5]

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[1] https://linguistics.berkeley.edu/sei/index.html
[2] https://www.unicode.org/charts/PDF/U1400.pdf
[3] McCarthy, S. (1995). "The Cree Syllabary and the Writing System Riddle: A Paradigm in Crisis." Taylor, I., Olson, D.R. (eds) *Scripts and Literacy. Neuropsychology and Cognition, vol 7.* Springer, Dordrecht. https://doi.org/10.1007/978-94-011-1162-1_5
[4] Nichols, John D.; Bright, William; Daniels, Peter T. (1996). "The Cree Writing System." *The World's Writing Systems.* Oxford University Press. https://archive.org/details/rosettaproject_crm_ortho-4.
[5] Berry, John W., and J. A. Bennett. *Cree Syllabic Literacy: Cultural Context and Psychological Consequences.* Tilburg University Press, 1991. https://catalog.library.cornell.edu/catalog/2080149.

The actual project uses a python script which converts the actual keys typed into a Latin alphabet transcription of the word, then uses the Latin script to find the syllabic characters needed. This is not visible to the user though, who sees a seamless transition from what is typed to the syllabic characters. The system works as so: The user inputs a consonant from the table below, and follows it with either i,j,k,l, which determines the orientation of the character (think of these like arrow keys: i is up, j is left, k is down, l is right). You can also type a single vowel or single consonant and the system will automatically use either the final consonant diacritic or the solo vowel character. After a string is created, the user can select to view the strings created, or choose to save the strings to a .txt file (it will be saved in the directory the user is currently in, likely the one the program is located in).

I had a lot of fun working on this project, serving as an illustration of how writing systems can be adapted to the digital age. To use the program, you can download the .py file from its github repository here. You will need to have python installed to run the program. If you don't already have it, the CS 1110 course website has a good tutorial on how to install it. As an important note, some fonts do not recognize the syllabics characters, so if you are running the program from Windows Powershell or the Mac Terminal you may not be able to view the characters directly from the program, and will need to save the strings before you can view them.

**Keyboard Character Mappings**

In order to type a character, use the mapping below for consonants, and if a syllabic character, follow it with the requisite direction of i,k,j,l (up, down, left, right) for the vowel. If you do not follow it with a vowel it will appear in its final form.

| Keyboard | Phoneme | Keyboard | Phoneme |
|---|---|---|---|
| a | p | w | l |
| s | t | v | r |
| d | c | c | s |
| f | k | x | w |
| r | m | z | y |
| e | n | | |