

Project

This project is the final exam for the course. You must submit a project to pass or receive credit for the course.

Create a software program that translates the English language, into a tribal language spoken by an uncontacted tribe in Brazil. There are quite a few uncontacted tribes in Brazil. The tribe of choice in my class is the Piripkura from Mato Grosso, Brazil. The tribal language they speak is called Tupi-Kawahib. Tupi-Kawahib is a language family shared by several tribes in Brazil.

Background for the Project

The Piripkura tribe is at risk of extinction. The United Nations, and the United States, along with the Brazilian government, are interested in preserving their language, culture, history, and day-to-day life. This requires educators, and academics, to formally sit down to study the tribe and their language, in order to formally translate their language to English. Further, it appears their language has several applications in cryptography.

The Tupi-Kawahib language has not been deciphered, when in used in the exchange of information between the United States and its allies. Keep in mind, the U.S. uses top secret cryptographic algorithms to exchange confidential data with its allies. This means the language spoken by the Piripkura tribe has an inherent complexity that cannot be deciphered by modern technology, and this could prove very useful to U.S. national security interests at home and abroad.

The software program you will create in my class is a small step in understanding the complexity of the Piripkura tribe, as well as the language they speak.

Requirements for the Software Project

These are the requirements for the project:

1. Research the Tupi-Kawahib language to gain a sense of familiarity with it. There are many resources in the college library. Please ask the librarian for assistance or find the section yourself.
2. Understand the building blocks of the language well enough to be able to form coherent, yet simple sentences with the language. This means you will study a tribal language to then achieve basic speaking and reading fluency in the language.
3. Form a group of four students and submit one project per group. One group will have three students. At a minimum, each group must have three students, and no greater than four students per group. We are a class of 27 students. We will have 6 groups of 4 students, and 1 group of 3 students.
- 3a. If a group member does not contribute or causes problems within the group, please inform me. However, one disruptive group member is no excuse for not submitting the research and code for the project on the due dates, respectively.

4. Each group will demo their project to the class, and give a small PowerPoint presentation to the class, on the day of the final. Presentations will be roughly 20 minutes in length but must be over 10 minutes in length.

Audio Component for Software Project

Practice the pronunciation of the language and begin practicing with the sentences that you create because your software will have audio components that you must also create.

1. With the sentences that you create in the tribal language, you must also speak the sentence, and record your voice speaking in the tribal language.
2. Then, you will translate the sentences in the tribal language, to sentences in American English.
3. All translations, and spoken languages must be recorded in a clear, professional voice. Please use a quiet environment to make the audio recordings. Once again, the library is the best resource for this task.

Programming Languages and Architecture to Build the Software Project

Once you have completed the research, you will use the Java programming language, and the Model-View-Controller architecture, to build a website that will run on any operating system. You will also build a mobile application for your software. The mobile application is for the Android OS. The actual coded software project is the result of your research. I will need all the documentation that you created during the research phase of the project.

Grading for the Project

1. First Phase - Due Date is 4/13/23 - the day of the midterm exam.

- The First Phase of the project is worth 50% of the project grade.

The Research and Discussion Phase: In this phase, you are expected to conduct research, and begin mastering the tribal language.

- I will need you to submit an alphabet of the tribal language. Make sure you have the most current alphabet. If not, you will have to create a letter for the alphabet that the tribe uses.
- Basic sentence structure of the tribal language.
- Basic modifying words in the tribal language.
- Building blocks of the tribal language: how does the tribe use the basic structure of their language, to then build new sentences in the language.
- Phonetics: submit any special sounds or special words that are used more than once in the language, and that require different contexts to understand the meaning of the word.
- Vocabulary words: submit vocabulary words that the tribe uses to understand nouns, verbs, and adjectives.
- Submit the standard word order of the language when used in written sentences and spoken sentences.

- All work should be submitted in a word document.

2. Second Phase - Due Date is 6/13/23 - the day of the final exam.

- The Second Phase of the project is worth 50% of the project grade.

The Coding and Software Engineering Phase: In this phase, you will use the Java programming language, and the MVC architecture, to create the translation software.

- Use the Java programming language.
- Use the MVC architecture.
- Use the MySQL database software to store data that your project may need.
- Submit all files for your project.
- Submit a PowerPoint presentation of the major aspects of your code. Do not submit every detail of your code in the PowerPoint presentation.

Goal of the Software Project

The software that you will create will be used by me, and my contacts in the United Nations, the U.S. Government, and the Brazilian government. We are going to use the software to try to communicate with the Piripkura tribe. The reason that we are trying to formally communicate with them is because they are at risk of being extinct as a civilization, yet, their culture, and language, are possibly vital to understand how the human brain processes language, as well as to gain a deeper understanding of how humans evolved into their present-day form. The reason that we are trying a software and technology approach to contact an uncontacted tribe is because the tribe has killed anyone that attempts to contact it.

To prevent innocent researchers and explorers from being killed by the tribe, the U.S. Government, in conjunction with the Brazilian government, will airdrop blue tooth speakers and microphones in various locations around the tribe, and speak to them from a safe distance. All technology that is dropped will have internet connections and be controlled by us. We hope to ultimately convey to the tribe that they are at risk of extinction, and that we want to help them. As you can expect, this is quite a challenging task.

We also hope to understand the complexity of their language and use it to strengthen U.S. cryptographic algorithms because their language has remained undecipherable to this day.

Good luck with your project.