Criterion E: Evaluation

Success criteria evaluation

Criteria	Status
Make a play/pause button to start/stop interpreting	✓ Met. The button works properly: when toggled, the interpreter starts working and the app blocks some elements to avoid the user changing things during the process.
The translation must be simultaneous (reasonable delay and no omissions)	~ Met, but can be improved. The time of delay between the speech and the voiced translation is acceptable, thanks to the use of multithreading. But it can be inconvenient for fast-paced talk. I realized that the delay changed depending on the device, a hint that maybe it can be improved using a more sensitive audio input device.
User is able to select the source language and the target language. Make a switch languages button	✓ Met. The language selection works properly. It can happen that the user selects the source and target language to be the same, but that does not cause a malfunction at any rate.
Display both the text in its original language and its translation on the screen	✓ Met. The texts are displayed properly and are updated when new speech is processed. The timing is almost immediate thanks to the use of callbacks to notify the interface each time a new text is available.
Make a translation history to store all translations Reproduce button to hear again a translation	✓ Met. The translation history works properly, no bugs have been found so far. The reproduce button works well, as well as the copy to clipboard button that had been added at the last time when coding.
Friendly and pretty user interface	✓ Met. I am very proud of the interface appearance, since it looks like any other Ubuntu application. Moreover, it is as the client requested, simple but functional and pretty.
Connect more than one output device (each with a different language)	✘ Not met. Sound management is very complicated as I discovered during the making of my application. I tried to learn how to connect multiple devices together, but I desisted because of the difficulty and time it required.
Can be used on multiple operating systems (app is cross platform)	✘ Not met (more or less). I couldn't make my application cross platform due to a problem of incompatibility with the GUI module I used:

	GTK+3. It is not impossible to install in Windows and MacOS systems, but it is very hard and painstaking (I couldn't even do it myself). Since I couldn't test the app in a system that isn't Linux based, I don't consider it to be cross platform.

Further development and extensibility

In the Appendix there is a small interview with the client (it was an answer from a text message) about his final thought of the product. Some of his ideas and mine are listed below:

<u>Minor improvements:</u>

- Solve the problem of text being cut at the end in the displays because of the presence of special characters. An approach will be to ensure that all strings manipulated are in Unicode.
- Make the app more secure against unpredictable behavior of the user that can unintentionally make it malfunction.
- Add the possibility of exporting the whole speech (in both languages) as text before quitting the application.
- Improve the speech detection process, since it is critical for the subsequent ones. The desired speech detection software must be able to split the text into chunks quickly.

<u>Major improvements:</u>

- To solve the problem about the app not being cross platform already mentioned in the success criteria, I would try again to make the GUI software work in other operating systems or change the GUI software used. In that case all the frontend of the application would need to be rewritten.
- For the possibility of connecting multiple output devices, in order for one speaker to communicate with multiple listeners each with a different language, I would study how to connect such devices. A different approach to the same question would be to have a version of the app installed in each computer, connect the computers with a network and have one speaker and the rest of the users will be listeners. Most of the app will need to be changed to achieve this.

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