COMP 195
System Design Document

Project Title: Turbo Translator

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Wiki Page:
https://github.com/comp195/Spring2020Project-translator-team/wiki

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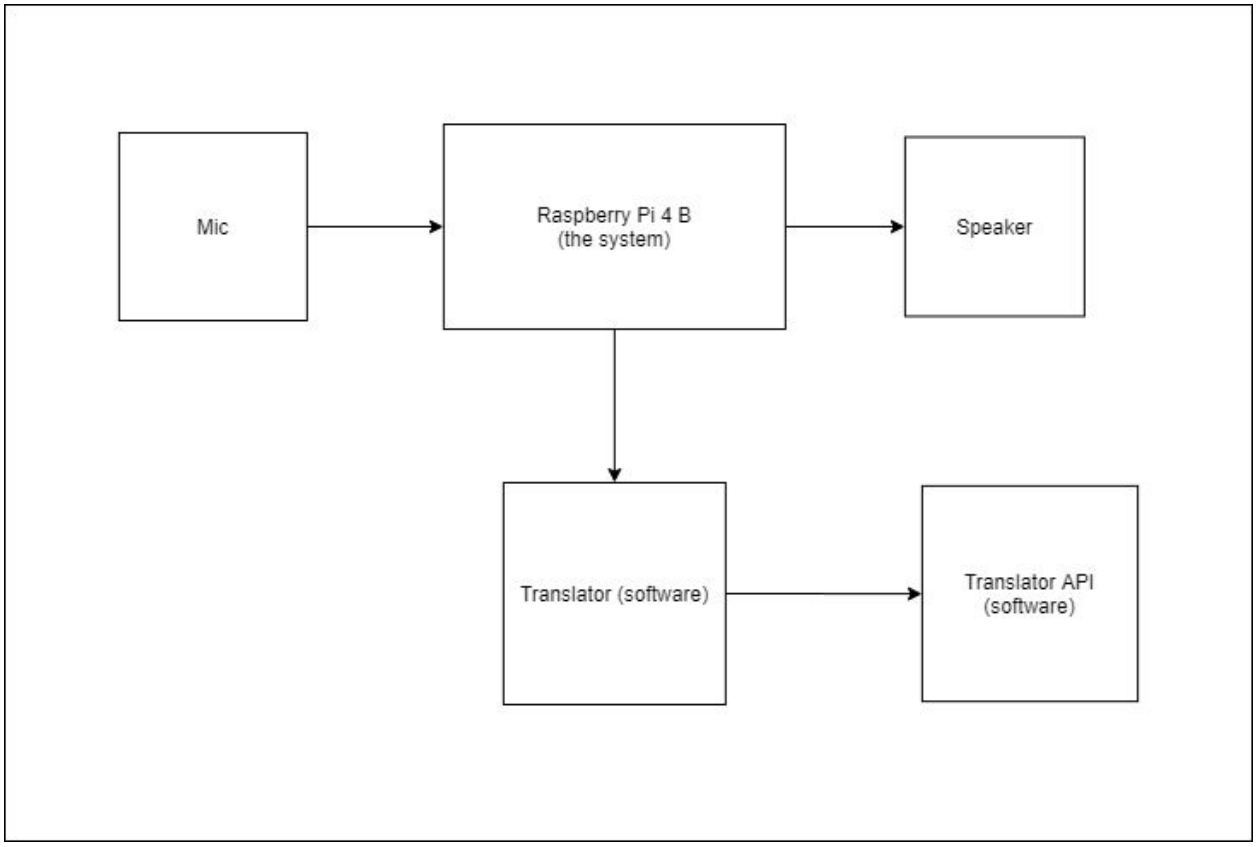
System Architecture



Hardware, Software, System Requirements

Hardware:

- 2 Headsets
- Raspberry Pi starter kit
- 1-4GB of RAM in test systems
- 32GB MicroSD card
- Battery pack
- Power supply

Software:

- Google Translate API (offline or online)
- Our software to interact with the API (Turbo Translate)
- Python

System:

- Raspian OS (Linux based)

External Interfaces

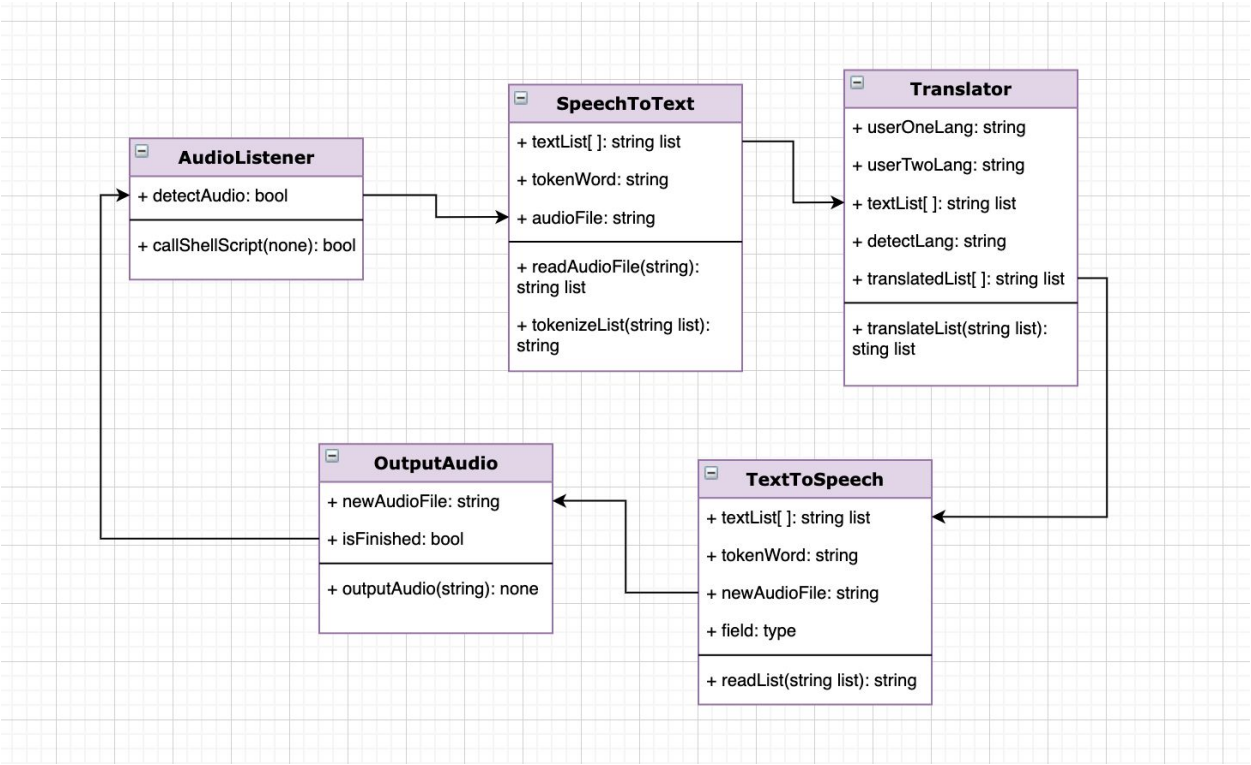
Google Translate Documentation:
https://cloud.google.com/translate/docs

Universal Translator Source Code:
https://github.com/dconroy/PiTranslate

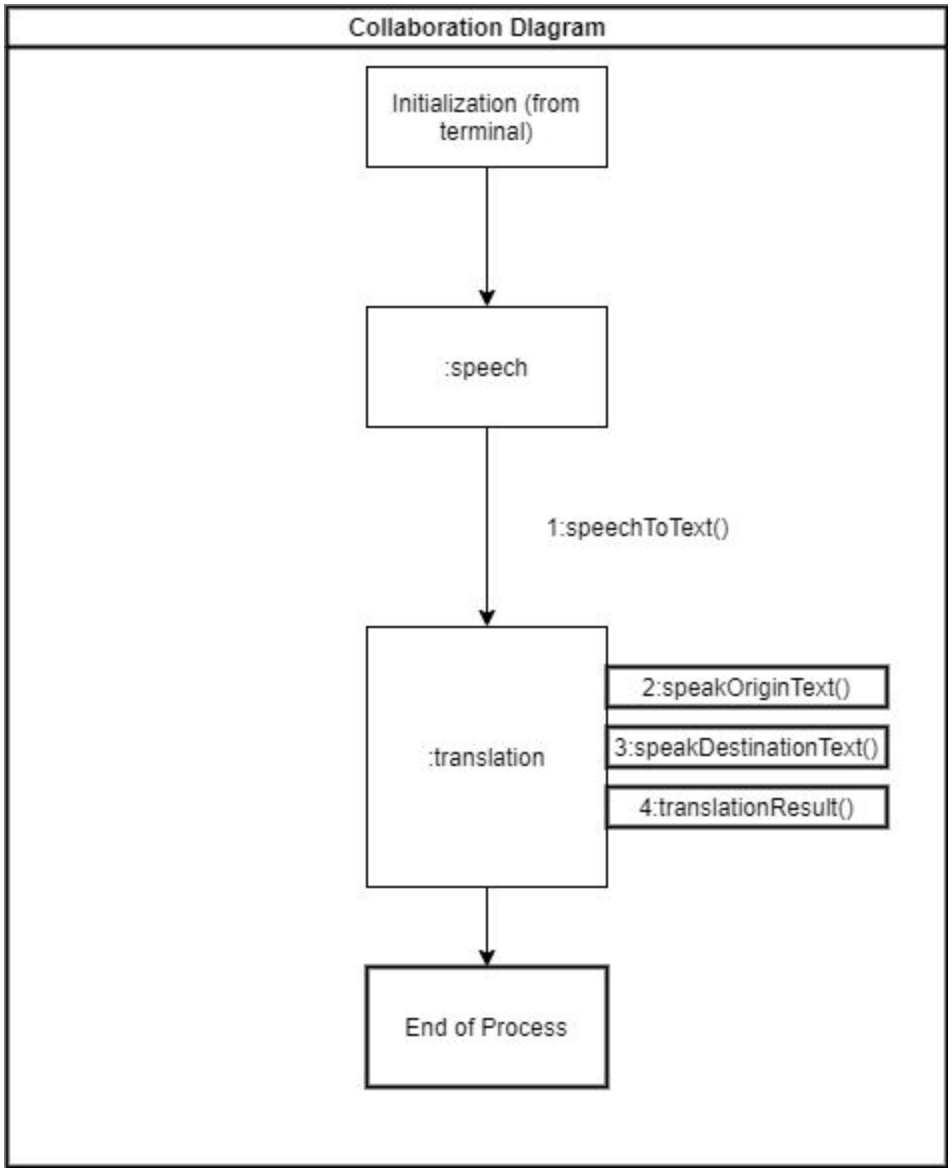
Universal Translator Documentation:
https://www.raspberrypi.org/blog/build-a-universal-translator/

Software Design

UML Diagram:



Interaction Diagram:

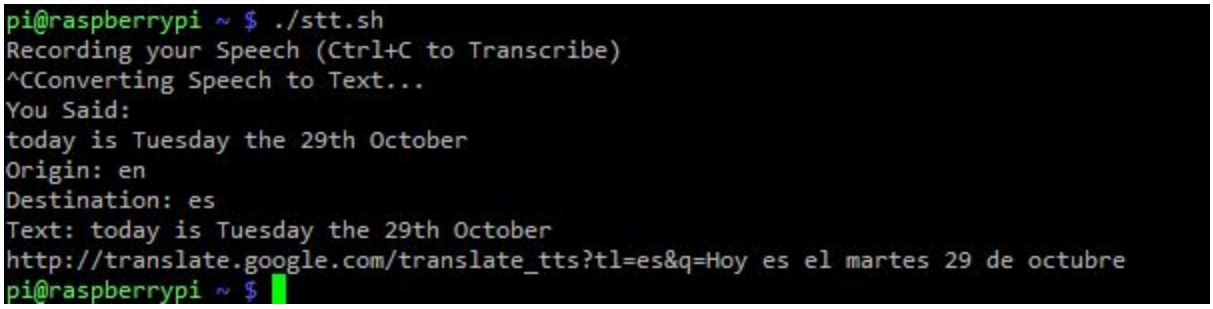


Design Considerations

Our program relies heavily on the use of API calls from various sources (Google and Microsoft). Our classes are built around their functionality and use. Functions are usually single calls to the APIs and either output or return the result. We hope to find a method to do this entirely offline, so as to decrease as much delay as possible between the speech and the listener.

User Interface (UI)

At the moment we are not planning for any web interface, other than having our scripts available on gitHub for cloning. We are planning on having an executable available on gitHub to use as a “desktop application” on the Linux environment. In quotes because it will trigger the command prompt as the interface to work on. A sample session is provided bellow:



Glossary and References

Sources:

https://www.raspberrypi.org/blog/build-a-universal-translator/

https://cloud.google.com/translate/docs

https://github.com/dconroy/PiTranslate

Glossary:

API: Application Programming Interface

Raspberry Pi: Small form factor, all in one, functional computer system. About the size of the palm of your hand.

Mic: Microphone