



Thales: Voice Recognition Device

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Background

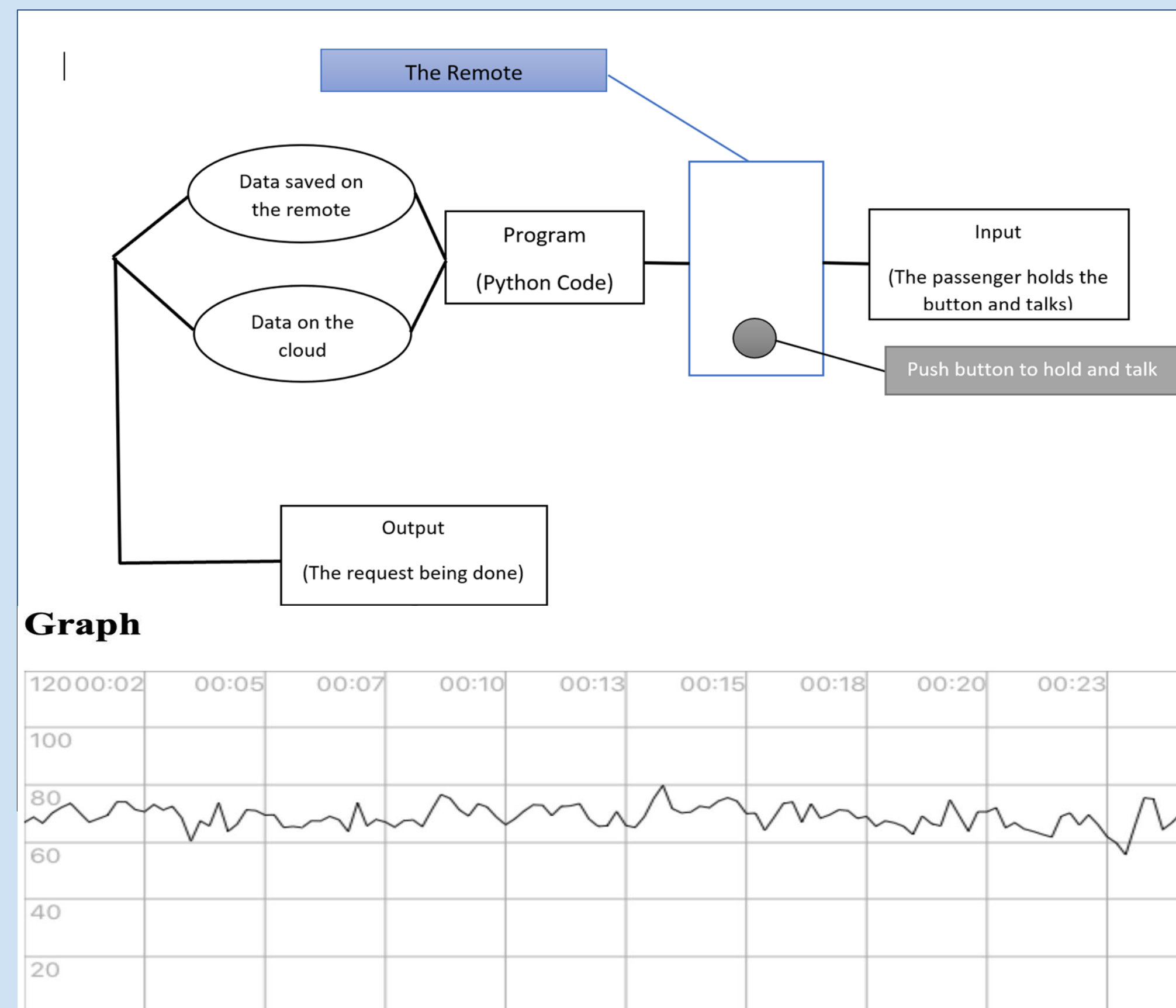
The project is aimed towards making the business class experience more comfortable and satisfactory for the passengers which in turn would be revenue-generating for airlines. Based on research, using technology in passengers' cabins would improve satisfaction rate of passengers.[1] One technology that can be added to make the cabin systems easier to use is the voice recognition system.

This would make interactions with entertainment and seat systems a lot easier.[2] In addition to the fact that it is more convenient, it is useful for passengers with disabilities. If a passenger is unable to type or push buttons to make a request, he/she can do that through the voice recognition system.

Project Goal

Our project goal is to construct a voice recognition device specifically designed for business class passengers to easily interact with their IFE System/respective environment. This device would be able to recognize and translate speech into text, intelligibly process this information and pass this to the respective system that is responsible for carrying out the request.

System Architecture



Accomplished

During this quarter we worked on the remote given to us and were able to connect it to the computer. We wrote our code in Python and used Pyaudio library in addition to Google Cloud Speech API. These speech recognition libraries enabled us to give command to the remote. First we just had the program to type what we said on the screen and then we gave it a few commands such as "open YouTube".

Future Work

For our future work we intend to do noise cancellation on the remote. Since there is a lot of noise in the airplane cabin, the remote the passenger works with needs to capture the voice accurately. We will be measuring sample noise levels with our phones, and adding a filter to the remote. Thales is going to provide us with a demo of the whole IFE and chatbot that already exists in the airplane. As another part of our future work we want to try and implement our code into the demo that we will be given and test our code through that system.

Materials Needed

- Remote (microphone)
- IFE (In-Flight Entertainment) system
- Airplane Business Class chairs
- Voice Recognition Software

References

- [1] Alamdari, F. (2019). Airline in-flight entertainment: the passengers' perspective.
- [2] Schafer, R. (1995). Scientific bases of human-machine communication by voice. Proceedings of the National Academy of Sciences, 92(22), pp.9914-9920.

