

COSC 310 ChatBot Individual Assignment

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Link to Github: https://github.com/Abu-Hijleh/COSC310_A3

Overview:

Nova is a chatbot that has been developed in order to answer questions to educate users about Astronomy and Geography. She is an educational tool that aims to spread knowledge. In this individual assignment, I expanded Nova's abilities by implementing the Google Translate API and the Wikipedia API as discussed below:

Google Translate API:

What it does:

Identifies if the user asks a question in a language other than english, translates the question into the language detected by google translate, and then translates the response from the corpus file to that language the user used.

Reason for choosing this API/How this API improves the ChatBot:

This API helps improve Nova by giving users the ability to learn about Astronomy and Geography in their language of choice, which makes Nova more accessible to a wider range of users and therefore it helps towards Nova's goal of spreading information.

Setup and Installation:

-pip install google-cloud-translate==2.0.1


Unfortunately, providing my own API key json file would be a security risk, as I would be uploading it onto a public github repository. Therefore, in order to run this code, a new .json needs to be generated and the absolute reference needs to be replaced accordingly.

The lines that need to be edited are lines 31 and 43 in APIs.py

```
translate_client = trans.Client.from_service_account_json(
    r"C:\Users\Haneen\Desktop\cosc-310-chatbot-4bb21491a743.json")
```

Sample Output:

Since I speak Arabic, I will be using that as my example:

 Nova, the chatbot

```
Nova: Hello. My name is Nova, the astronomy and geography Chat Bot. Pleased to meet you.  
You: شو عاصمة الأردن  
Nova: عمان  
You: عدد الكواكب  
Nova: هناك 8 كواكب في نظامنا الشمسي  
You: شو اسمك  
Nova: أنا لست على دراية بهذا السؤال
```

Translated:

You: شو عاصمة الأردن → What is the capital of Jordan?

Nova: عمان → Amman

You: عدد الكواكب → Number of planets

Nova: هناك 8 كواكب في نظامنا الشمسي → There are 8 planets in our solar system

You: شو اسمك → What is your name

Nova: أنا لست على دراية بهذا السؤال → I am not familiar with this question

Limitations:

-Install: The machine running the code needs to have a local .json file for the API key, therefore making it hard for other people to run on their own machine seamlessly, as they need to be able to sign up for Google Cloud and edit the code.

-Weird translations: Some translations are “odd” or atypical of what a fluent speaker of that language would say (for example, directly translation “I am not familiar with this question” to Arabic produces a sentence that is structured unusually). However, this can not be avoided as it pertains to the effectiveness of google translate and not Nova the chat bot.

Wikipedia API:

What it does:

If the user asks a question in english that Nova does not recognize, the question is sent to the method that uses the wikipedia API in order to attempt to generate a response.

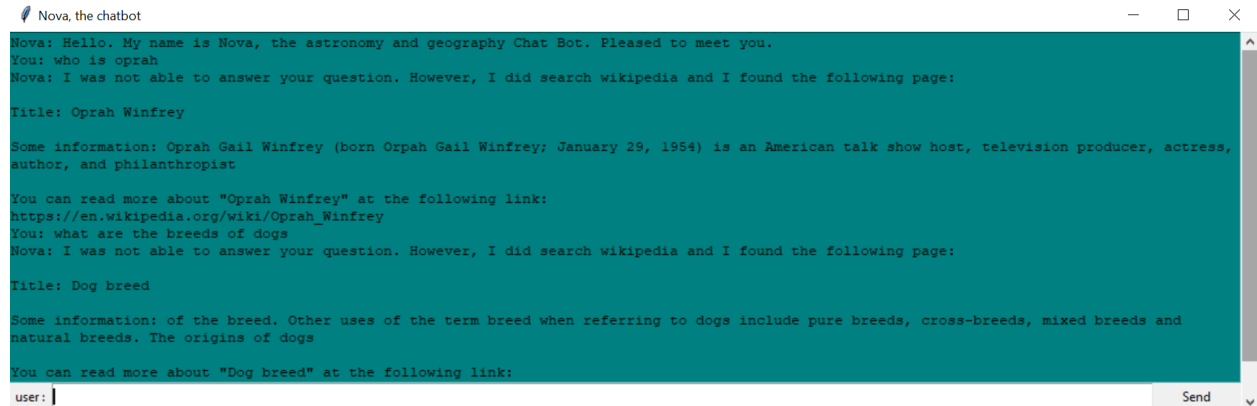
Reason for choosing this API/How this API improves the ChatBot:

Previously, Nova had no way of handling questions/topics that were not included in the corpus.txt file, which severely limited her ability to answer questions. By using the Wikipedia API, Nova is able to dramatically increase her bank of information and ability to provide information, making her more useful.

Setup and Installation:

-pip install beautifulsoup4

Sample Output:



Limitations:

-Sending the question the user wrote to wikipedia does not always return a useful result, as the user is typing in question format which is not usually the way we search through wikipedia efficiently. For example, someone speaking to nova might ask “how many countries are there on earth” whereas someone searching through wikipedia would check keywords like “country list” or “countries”.

-Because the wikipedia API is set up in english, this feature is only implemented and used if the user asks a question in english. If the user asks a question that Nova does not have a response to in any language other than english, Nova will say some variation of “I do not understand that question”