Chatbot

Project Description and Goals

In this project, a conversational chatbot is created. Chatbots are great for a multitude of applications including:

- Customer Interaction
- Collecting Survey Responses
- Providing Troubleshooting of a System/Network

In this case, a chatbot that responds to general conversational queries is created to handle my personal chats.

Training Set

The training set consists of samples from my personal gchat history and was expanded using a kaggle dataset containing generic sentence combinations.

SenderText	BotText
sitting here staring off into nothing	You got this! One step at a time. Happy to h…
it is through the allsate guy	tytyty
I spoke to the insurance	thank you so much for handling that!
the insurance is all set up	thanks for soing that. I really appreciate it.
is that done yet?is tht done yet?wht are you u…	it will be today.it is in progressnot much, wh…

Process

To understand the non-trivial requirements of creating a chatbot, I worked through creating my own pipeline to query responses. My initial assumptions were that natural language processing (NLP) was the key to getting the bot pipeline to understand my queries.

My initial attempts depended highly on cleaning the input text to make the information consistent and clear (with respect to things like spelling, punctuation, and case). Ultimately, I found that without much more data, labeled data, or a method to correct the pipeline, the cleanliness of the input text did not matter.

Process

With this knowledge in hand, I began to implement my bot in Rasa which has a system for defining entities and intents. Once I had an initial version of my bot, I began to work in Rasa x to fine tune my model by correcting any errors and re-training.

Model Optimization

Initially, model performance can be seen on the right. Some intents (blue box) were immediately classified well and responses were appropriate. However, others (red box) had to be corrected and the model retrained to get the appropriate results.
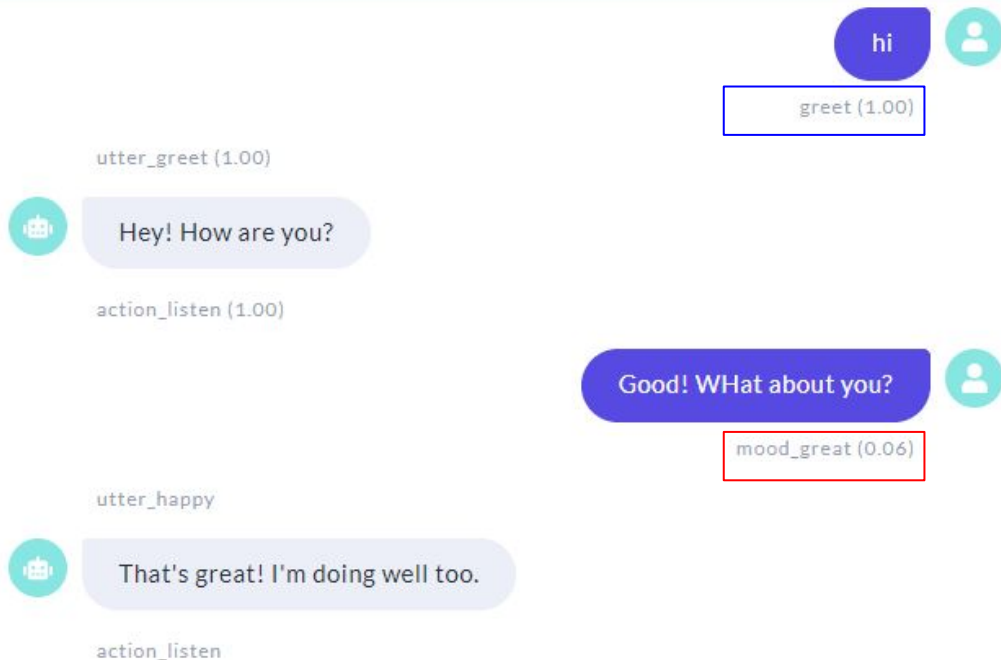
Model Optimization

Upon completion of training, all intents were classified with 87% accuracy or higher.
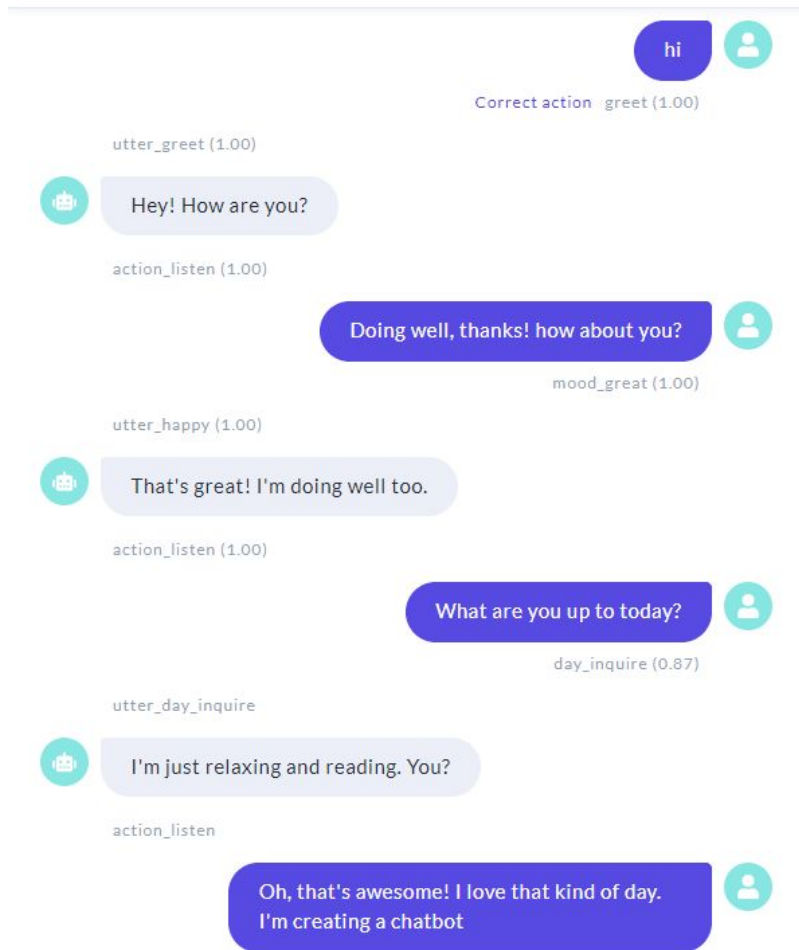
Bot Implementation

The bot implemented in this project is available for reference here on github:

https://github.com/grykah/SBwork/tree/master/Capstone3-Chatbot/gchatProject