

JUSTIN ALMENDRAL

Computer Engineering Student

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JSON Text Analyzer

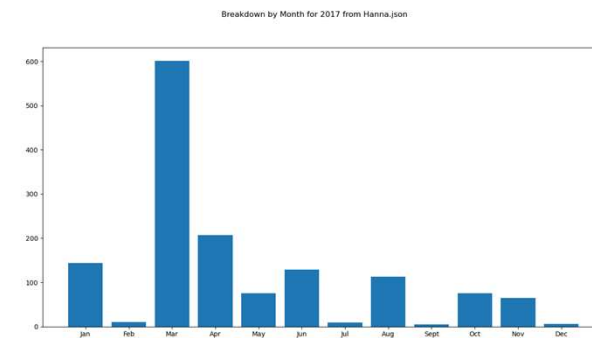
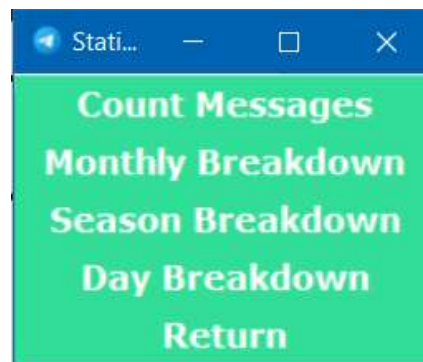
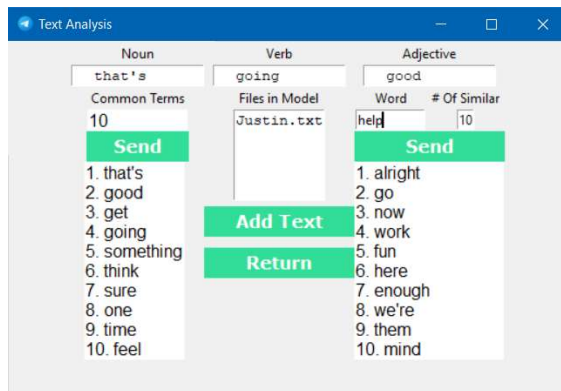
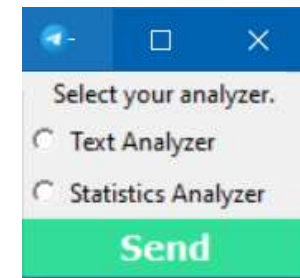
Overview:

Objective of the project is to take saved text from a JSON file exported from Telegram, a popular chat service, and analyze the messages.

Python was used to code the program, with use of the nltk, genism, and matplotlib libraries for analysis.

Challenges:

- The analyzed text had to be sanitized to ensure that the unreadable characters weren't processed. This led me to learn more about regex and using list comprehension for word stripping



Rule-Based Chatbot

Overview:

Proof-of-concept Python program that uses regular expressions to process a users input.

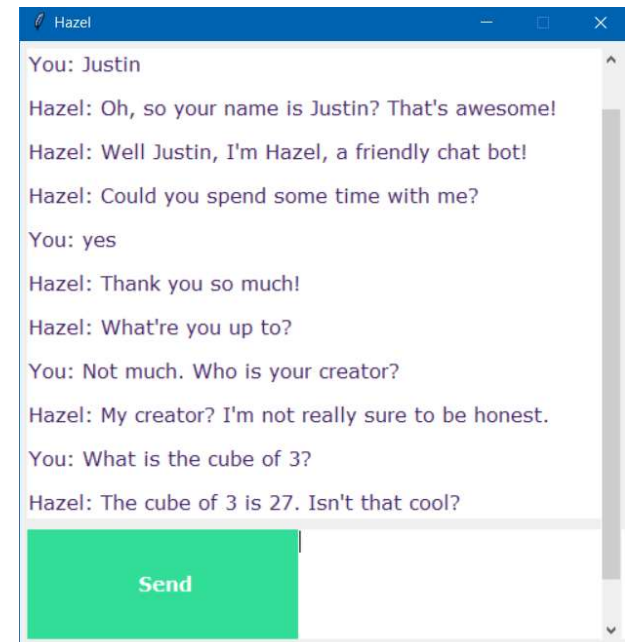
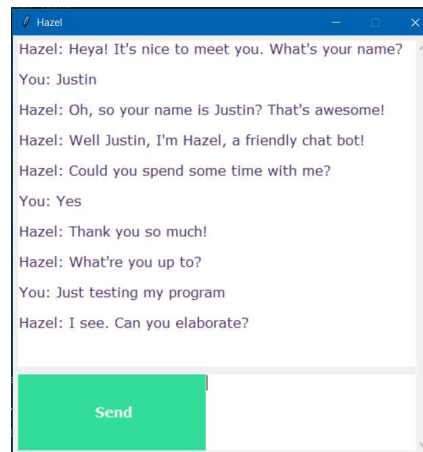
The program runs using two objects, one that serves as the back-end and one that handles the GUI

Design Choices:

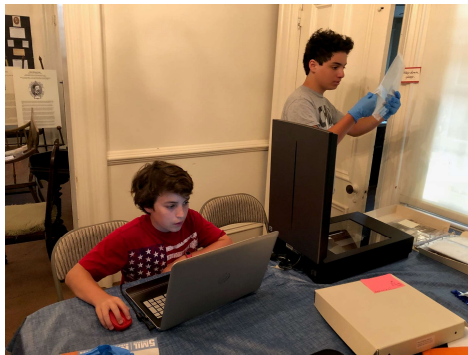
- The current iteration of the program has a GUI created in tkinter based on a chatroom, designed to mimic a classic-style text conversation.

Challenges:

- Since the same code used for parsing responses is used for getting names, I had to avoid mixing which functions were called. This was handled through flags, and taught me about state management



Boy Scouts of America – Eagle Project



Challenges

- Work went into the school year, complicating scheduling. I learned to keep a solid timeline and contact people early when deciding a date.



Overview:

The Historical Drake Museum in North Plainfield had boxes of historical photos kept in their archives. I took it upon myself to start a project to digitize those photos for preservation and exhibition

Eagle Planning:	69:12		
Scout Hours	41:49	Working Hours	324:49
Non-Scout Hours	50:04	Eagle Scout Hours	122:42
Adult Scout Hours	1:00	Percentage Work	37.78%
Adult Non-Scout Hours	109:14		
Eagle Working Hours	53:30		
Sum:	324:49		

Responsibilities

- Coordinating Volunteer Schedules
- Communicating with the Beneficiary
- Teaching volunteers how to use the technology
- Leading a fundraising campaign to purchase a printer

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Grotto Engineering

Overview:

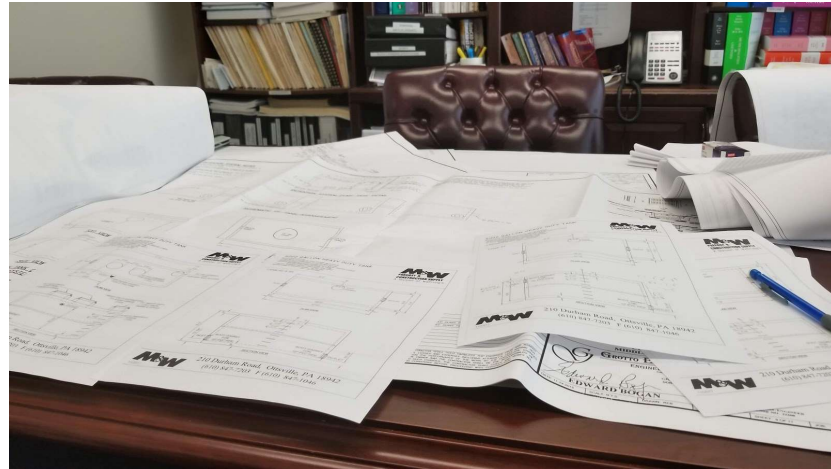
Grotto Engineering is a Civil Engineering firm based in Cranford, NJ.

Its engineers are commissioned by the township of Clark to handle municipal work.

I did a 6-month internship with the firm through my high school's internship program

What Did I Do?

- I learned how to calculate swales by reading elevation maps.
- I used Microsoft Excel Formulas to determine appropriate pricing for road work.
- I learned how to use Civil3D and AutoCAD to fix sidewalk splines and measure the area of a location for storm drain management purposes.
- I volunteered to accompany a house site inspection and learned what makes a house pass and fail.



Picatinny Arsenal

Overview:

Picatinny Arsenal is a military research and manufacturing facility in Wharton, NJ.

I applied to work at the facility through the College Qualified Leaders Program.

I worked as part of the Gaming, Interactive Technologies, & Multimedia branch.

What Did I Do?

- Originally planned to work as a programmer through the College Qualified Leaders Program
- Due to COVID-19 Restrictions, I worked as an alpha tester of a STEM education game that featured designing and building virtual open architecture vehicles which could be tested in open combat
- Helped catch critical bugs when loading into the shooting gallery game mode and making contact a ramp.



Summer interns assist Picatinny Arsenal STEM team with creation of new online game

