1. define NLP in your own words
    a. NLP is the ability of computers to read and listen to words, and then understand what it heard or read.
2. describe the relationship between AI and NLP
    a. NLP is basically AI but focused specifically on processing language. It learns the specifics of language and uses that to understand written and spoken content.
3. write a sentence or two comparing and contrasting natural language understanding and natural language generation
    a. Natural Language Understanding is basically the ability for computers to understand words, while natural language generation is using an understanding of words to create new written content.
4. list some examples of modern NLP applications
    a. Some examples are email filters, Google search results, mobile keyboards text suggestions, and email response suggestions.
5. write 3 paragraphs describing each of the 3 main approaches to NLP, and list examples of each approach
    a. The first main approach is Rules Based, which is processing language based on a specific set of rules. Due to the vast complexity of language, Rule Based nlp is difficult to scale up. A few examples of this range from very basic Chat bots like Eliza, to spell check systems. One strength of Rule Based NLP is that due to their simplicity, they are well suited to basic nlp tasks that do not require an entire neural network to be trained for it.
    b. The second main approach is Statistical and Probabilistic approaches to NLP. This is based on language models based on counting words and calculating the probabilities of various word, phrase, and sentence construction. This approach to NLP is best suited to Machine Translation software, as they can calculate the most likely translation to a given phrase. An example of this could be when translating “Big Sister”, the software would guess based on probability that “Elder Sister” is more likely than “Large Sister”.
    c. The third approach to NLP is Deep Learning. Deep Learning came from the foundation of Neural Networks, as processing power became more available and computers became more powerful. By learning the patterns in language through large sample sets, Deep Learning can correlate the data it receives with the Data it’s looking for. An example of this is Speech Recognition, such as for digital assistants such as Siri and Alexa. Using Deep Learning, the program learns how to translate spoken language into written language and into a format that the assistant can understand and respond to.
6. Write a paragraph describing your personal interest in NLP and whether/how you would like to learn more about NLP for personal projects and/or professional application
    a. My first intro to the general field of Artificial Intelligence was the first Iron Man movie, specifically Tony Stark’s AI, JARVIS. I always thought that making something like that was the coolest thing I’d ever heard of. As time went on, and I got into computer science, I started getting into AI and Machine learning, eventually coming across Natural Language Processing. I immediately knew this

was something I was interested, as I wanted to one day make a speech interface much like JARVIS. Because of this, the kinds of projects I'd want to focus on to start with would be chatbot style NLP, just to get that aspect of a program that talks to you. I

7. save the document as a pdf document
8. upload the document to your GitHub (and eLearning)