

## Report

1. I changed temperature to test impact of higher values
  - It seems to be more repetitive with lower temperatures
  - With higher temperatures I have not visually noticed anything special
2. I tried Pedro's code to test different values for the top\_p, frequency\_penalty, and presence\_penalty parameters:
  - The most common issue across all the outputs with a frequency\_penalty of -2.0 is repetition of words or phrases
  - Excessive use of commas with top\_p 0.1, frequency\_penalty -2.0, presence\_penalty 0.0
  - The more balanced and coherent outputs were observed with settings closer to zero for both penalties
  - Increasing the presence penalty to 1.0 or 2.0 often seems to lead to somewhat more varied content
  - Balanced outputs are better achieved with frequency and presence penalties set around zero or slightly positive values
3. I created code in the same spirit to test the impact of the number of tokens:
  - 10: The response is extremely brief, providing a broad, non-specific statement lacking detail
  - 20: Slightly longer, still brief, starts to introduce additional ideas
  - 50: More comprehensive introduction, mentions multiple factors, incomplete transition to a more detailed discussion
  - 100: Noticeably longer and more detailed, discusses specific technological advancements and begins addressing significant challenges, well-structured
  - 200: discusses multiple potential aspects of humanity's future, including technological advancements, societal impacts, ethical considerations, and potential challenges, well-rounded and comprehensive
4. I encountered problems testing the impact of changing *Top P*, *Frequency Penalty*, and *Presence Penalty*, which I couldn't debug. So I just tried some combinations:
  - Lower Values of top\_p: The model tends to produce more predictable responses
  - Negative Values of frequency\_penalty: Penalizes common tokens less, more repetitive responses
  - Negative Values of presence\_penalty: Penalizes token repetitions less, can mirror the context