# Notes

## LLM Settings

### Temperature

* Lower the temperature, more deterministic is the results.
* Increasing temperature, leads to more randomness this can boost creativity.
* In general, for more concise and factual answers keep a lower temperature.

### Top P

* A Nucleus Sampling technique can control the deterministic property of the model.
* Alter either top p or temperature but not both

### Max Length

* The maximum number of tokens a model generates in a response.

### Stop Sequences

* A string that stops the token generation in a model.

### Frequency Penalty

* Applies a penalty on the next token depending on how many times it appeared in the response/prompt.
* The higher the frequency penalty, lower are the chances of the same token appearing again.

### Presence Penalty

* Presence Penalty works just like the frequency penalty in the sense that the repeated token gets a penalty, however this is not associated to the number of times the token appears.
* For example, a token that appears twice has the same penalty as a token that appeared 10 times.
* This prevents the model from repeating phrases too often.

## Basics Of Prompting

### Elements of a Prompt

* Instruction: Specific task assigned to the model
* Context: Additional information to steer the model to the right responses
* Input Data: Question we need the answer/response for
* Output Indicator: Type or format of the output.

#Instruction

Classify the text into neutral, negative, or positive.

#Context

Text: I did not like the food.

Sentiment: Negative

Text: I liked the pasta.

Sentiment: Positive

Text: It was alright but not great.

Sentiment: Neutral

#Input Data

Text: I think the food was okay.

#Output Indicator

Sentiment:

### Tips for prompting

* Be specific.
* Avoid Impreciseness.
* Don’t mention things the model should not do rather mention things the model should do.

### Examples Of Prompts

* Text Summarization
* Information Extraction
* Question Answering
* Text Classification
* Conversation
* Code Generation
* Reasoning

Sample Prompt

Act like a senior Data Scientist, I need a detailed training document on python, you will need to formulate the results in the order of complexity along with a clear and concise description of each topic along with a code example and attach links to additional resources for each topic and input the final result in a pdf format