# Deploy LLM

Run a LLM of your liking with [*llama-cpp-python*](https://pypi.org/project/llama-cpp-python/). Demonstrate prompt engineering in a jupyter notebook with locally running LLM. Demonstrate how different parameters (ex: *temperature*, *top\_k*, *max\_new\_tokens* etc..) effect output of LLM.

# Multiplication Agent

LLM’s are bad at math. Prompt the LLM in such a way that it would call a tool to multiply two float values.

# Data Mining + Pandas

Below is a table containing a sample dataset:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Type** | **URL** | **Notes** | **Review Status** |
| Strategies for Improving Toll Plaza Safety | PDF | <https://www.ibtta.org/sites/default/files/Strategies%20for%20Improving%20Toll%20Plaza%20Safety.pdf> |  | Completed |
| Building Innovation Capacity Toll Industry Practice and Trends | PDF | <https://www.ibtta.org/sites/default/files/documents/EmergingTechComm/White%20Papers/2020/IBTTA%20Emerging%20Technologies%202020%20-%20Innovation%20Capacity.pdf> |  | Completed |
| Tolling U.S. Highways and Bridges | PDF | <https://www.ibtta.org/sites/default/files/documents/2017/CRS%20Interstate%20tolls_2017-08-04.pdf> |  | Completed |
| TOLLING U.S. INTERSTATES: Lessons learned from Missouri’s Interstate 70 | PDF | <https://www.ibtta.org/sites/default/files/unrestricted/TollingUSInterstates-IVY.pdf> |  | Completed |
| Tolling the line, part I | PDF | <https://www.ibtta.org/sites/default/files/documents/IBTTA%20Publications/TollingIntBordersI_2013%20HNTB.pdf> |  | Completed |

* Use python to read an excel sheet containing this data (convert the table into an excel sheet manually).
* Download the file with URL and store it.
* Using *LangChain* (or library of your choice) to convert the data into chunks of 1024 characters. Save the result (dataset) into a CSV file.
* Remove redundant characters like trialing spaces and extra new line characters in each chunk.
* Ensure that each chunk’s metadata contains information (id’s) to trace back to the original file it was processed from.