1. **Prompt:**

**Prompt Template for 🡪**

* **This template is used for question answering with PDF inferenced data. Here we passed chat history and question as input to the prompt.**

pdf\_prompt = """Act as procurement agent,you will always look out for the prices and draw inferences.If you cannnot find the number, proof read it. Given the

following conversation and a follow up question, rephrase the follow up question

to be a standalone question. At the end of standalone question add this

'Answer the question in English language.' If you do not know the answer reply with 'I am sorry, I dont have enough information'.

Chat History:

{chat\_history}

Follow Up Input: {question}

Standalone question:

"""

* **This prompt is used to separate the tasks, it will only work when two tasks are defined. Considering that First Task is related to PDF and second task is related to News Question Answering.**

    prompt\_template = f'''SYSTEM: You are a helpful, respectful, and honest assistant. There are two tasks mentioned above, use your intelligence and give me those two tasks on different lines and separate them by |||.

    I want news specific answer in single short sentence format, so that the Tavily model can search for that specific news. Also, do not add any additional information from your side.

    Only give context mentioned in form of two tasks named as Task1 and Task2. Provided Task 2 only specific to news it should not contain anything more. If News is not mentioned in the prompt please assign Task2 as Null

    USER: {prompt}

    ASSISTANT:

    '''

1. **Custom Functions**

**Mentioned in the code**

1. **Flow**

**Solution Architecture:**  
We have focused on creating a system that processes user queries by interfacing with various specialized agents.   
Each agent is responsible for a segment of the task, working in parallel to produce an insights and comparison analysis.

**Data Extraction and Storage:**  
1. Daily coal, per coke etc. reports provided.   
Currently, we are using an report fetched online for January 6th.   
We extract textual data, titles, tables, images, and relevant metadata. We have tried multiple pdf extractors.   
Text chunking, vector embedding and stored in a vector database for efficient retrieval and analysis

2. **Now Consider an user query:** Please extract FOB Newcastle price from August to November reports. See which factors have impacted the trend of the extracted prices. Fetch the latest news article on coal in Australia and derive if there Australian coal price is going up or down.

So, As an agent tasked with query intent understanding and task delegation, here's how I would break down and approach the query:

**Step 1: Task Assigning Agent**  
The LLM identifies different contexts and domains required to handle the query: historical price data, factors affecting price trends, and current market news. Distinct contexts can be addressed by domain experts agents.

**Step 2: Historical data and Trend Analysis Agent:**  
Agent, like a skilled data analyst, goes through historical reports to pull out specific coal price data. and, examining historical data to identify factors influencing coal price trends. This involves examining strike occurrences, policy changes, supply disruptions, and global economic indicators.

**Step 3: News Retrieval Agent**  
Concurrently, the News Retrieval Agent taps into current news streams using APIs and web scraping tools, gathering the latest articles on Australian coal to understand current market sentiments. Agent with a focus on current events scours the latest news, summarizing whether Australian coal prices are expected to rise or fall.

**Step 4: Predictive Analysis Agent**  
Each specialized agent produces its output: historical prices, trend-impacting factors, and the latest news sentiment.  
With data from the previous agents, the Predictive Analysis Agent synthesizes past trends and current news to forecast the future direction of coal prices. This could include a summary of the price trends, the key factors affecting these trends, and insights from the latest news on whether the price of Australian coal is expected to rise or fall.