In [1]: **import** textwrap from IPython.display import Markdown def to\_markdown(text): text = text.replace('•', ' \*') return Markdown(textwrap.indent(text, '> ', predicate=lambda \_: True)) 1. LLM Prompt Templates 1.1 Promt having no input Variables In [47]: **from** langchain.prompts **import** PromptTemplate template=""" Tell me about messi """ prompt1= PromptTemplate(input\_variables=[], template=template) # or template=""" Tell me about messi """ prompt2= PromptTemplate.from\_template(template=template) #if we use .from\_template no need to give input variables #lets see promp1 and promt2 formatted\_prompt1 = prompt1.format() formatted\_prompt2 = prompt2.format() print("1st :", formatted\_prompt1, "\n") print("2nd :", formatted\_prompt2, "\n") 1st : Tell me about messi 2nd : Tell me about messi 1.1.1 lets see example from langchain\_google\_genai import GoogleGenerativeAI llm\_model = GoogleGenerativeAI(model="gemini-pro", google\_api\_key="your\_key") response=llm\_model.invoke(formatted\_prompt1) to\_markdown(response) Out[48]: Name: Lionel Messi Assistant 1.2 Promt having one input Variables In [49]: template=""" Tell me about {player} """ prompt1= PromptTemplate.from\_template(template=template) formatted\_prompt\_with\_input = prompt1.format(player="virat kohli") print(formatted\_prompt\_with\_input) Tell me about virat kohli 1.2.1 lets see example In [50]: | llm\_model = GoogleGenerativeAI(model="gemini-pro", google\_api\_key="your\_key") response=llm\_model.invoke(formatted\_prompt\_with\_input) to\_markdown(response) Out[50]: Virat Kohli **Early Life and Career:** • Born on November 5, 1988, in Delhi, India · Started playing cricket at the age of three Made his first-class debut for Delhi in 2006 • Captained India's under-19 team to victory in the 2008 ICC U-19 Cricket World Cup **International Debut and Rise to Stardom:** • Made his international debut for India in August 2008 in an ODI against Sri Lanka Scored his first international century in his third ODI match against Sri Lanka • Became a regular member of the Indian team in all formats Led India to victory in the 2011 ICC Cricket World Cup **Batting Prowess:** • One of the greatest batsmen of all time • Known for his aggressive style of play and exceptional technique Holds numerous batting records, including the most runs scored in ODIs and T20Is • Won the ICC Player of the Year award three times (2011, 2012, 2018) Captaincy: Became India's Test captain in 2014 and ODI and T20I captain in 2017 • Led India to the top of the ICC Test rankings and to victories in several major tournaments Stepped down as captain of all formats in 2021 **Personal Life:**  Married to Bollywood actress Anushka Sharma in 2017 Has a daughter named Vamika Is a vocal advocate for social and environmental issues Legacy: · Considered one of the greatest cricketers of all time Has inspired a generation of young cricketers • Is an icon in India and beyond · His contributions to the sport of cricket have earned him widespread recognition and admiration 1.3 Promt having Muliple input Variables template=""" Tell me about {player} and his {relation} """ prompt1= PromptTemplate.from\_template(template=template) formatted\_prompt\_with\_multipleinput = prompt1.format(player="cristiano ronaldo", relation="Son") print(formatted\_prompt\_with\_multipleinput) Tell me about cristiano ronaldo and his Son 1.3.1 lets see example In [52]: | llm\_model = GoogleGenerativeAI(model="gemini-pro", google\_api\_key="your\_key") response=llm\_model.invoke(formatted\_prompt\_with\_multipleinput) to\_markdown(response) Out[52]: **About Cristiano Ronaldo** • Full name: Cristiano Ronaldo dos Santos Aveiro • Born: February 5, 1985, in Funchal, Madeira, Portugal Position: Forward • Current club: Al-Nassr (Saudi Arabia) • Nationality: Portuguese **Personal Life** • Son: Cristiano Ronaldo Jr. (born June 17, 2010) **Career Highlights**  Five-time Ballon d'Or winner Five-time Champions League winner Seven-time league titles in England, Spain, and Italy • All-time top scorer for Real Madrid, Manchester United, and the Portugal national team Most goals scored in the UEFA Champions League (141) Most international goals scored by a male player (118) Son of Cristiano Ronaldo: Cristiano Ronaldo Jr. • Born: June 17, 2010, in an unknown location · Mother's identity: Unconfirmed · Raised by: Cristiano Ronaldo and his mother, Dolores Aveiro **Early Life**  Cristiano Ronaldo Jr. (nicknamed "Junior") was born in the United States but holds Portuguese citizenship. He lived with his father in Madrid, Spain, until 2014, when they moved to Turin, Italy. **Football Career** • Junior plays as a forward for the youth academy of Real Madrid, where his father once played. • He has inherited his father's athleticism and shows promise as a young footballer. **Other Information** · Junior is close with his father and often attends his matches. • He is a private individual, and not much is known about his personal life or educational background. • Junior is expected to follow in his father's footsteps and become a professional footballer. 2. Chat Prompt Templates for ChatGoogleGenerativeAl Prompt Restrictions As of the time this document was written (2023/12/12), Gemini has some restrictions on the types and structure of prompts it accepts. Specifically: Multimodal Inputs: When providing multimodal (image) inputs, you are restricted to at most 1 message of "human" (user) type. You cannot pass multiple messages (though the single human message may have multiple content entries). System Messages: System messages are not accepted. Regular Chat Conversations: • For regular chat conversations, messages must follow the human/ai/human/ai alternating pattern. You may not provide 2 AI or human messages in sequence. # lets try on chatGenerativeai from langchain.prompts import ChatPromptTemplate, SystemMessagePromptTemplate, HumanMessagePromptTemplate, AIMessagePromptTemplate 2.1 Message Prompt Template as Tuples In [73]: chatprompt = ChatPromptTemplate.from\_messages([ ("human", "Hello you are a currency converter assistant"), ("ai", "Hi there, I am here to convert your currency."), # AI message ("human", "convert {input\_currency} to {output\_currency}"), # User (Human) message ]) print(chatprompt.input\_variables) ['input\_currency', 'output\_currency'] formatted\_chat\_prompt = chatprompt.format\_messages(input\_currency=" 100 usd", output\_currency="Nepali Rupee", print(formatted\_chat\_prompt) [HumanMessage(content='Hello you are a currency converter assistant'), AIMessage(content='Hi there, I am here to convert your currency.'), HumanMessage(content='convert 100 usd to Nepali Rupee')] from langchain\_google\_genai import ChatGoogleGenerativeAI llm\_model = ChatGoogleGenerativeAI(model="gemini-pro", google\_api\_key="AIzaSyDfnYQykoNClC9i-vfLnubOdgymlpDr2-I") # in ChatGoogleGenerativeAI system message is not supported response=llm\_model.invoke(formatted\_chat\_prompt) output=str(response).strip().replace("\n", "") print(output) content='As of today, March 8, 2023, 100 US dollars is equal to 12,862.50 Nepalese rupees.' 2.2 Using Message Classes In [78]: #Lets try on GoogleGenerativeAI sys\_template="""you are a assistant who converts currency. you give response after converting currency like this sir your converted currency is: human\_template1="Hello" ai\_template1="Hi! there i am here to convert the currency " human\_template2="wow nice would i give you the currency value" ai\_template2="sure give me the input and output currency" human\_template3="convert {input} to {output} currency" chatprompt1 = ChatPromptTemplate.from\_messages([ SystemMessagePromptTemplate.from\_template(sys\_template), HumanMessagePromptTemplate.from\_template(human\_template1), AIMessagePromptTemplate.from\_template(ai\_template1), HumanMessagePromptTemplate.from\_template(human\_template2), AIMessagePromptTemplate.from\_template(ai\_template2), HumanMessagePromptTemplate.from\_template(human\_template3), ]) print(chatprompt1.input\_variables) ['input', 'output'] formatted\_chat\_prompt = chatprompt1.format\_messages(input=" 100 usd", output="indian Rupee", print(formatted\_chat\_prompt) [SystemMessage(content='you are a assistant who converts currency. you give response after converting currency like this \n\nsir your converted currency is: \n\n'), HumanMessage(co ntent='Hello'), AIMessage(content='Hi! there i am here to convert the currency '), HumanMessage(content='wow nice would i give you the currency value'), AIMessage(content='sure giv e me the input and output currency'), HumanMessage(content='convert 100 usd to indian Rupee currency')] In [80]: from langchain\_google\_genai import GoogleGenerativeAI llm\_model = GoogleGenerativeAI(model="gemini-pro", google\_api\_key="AIzaSyDfnYQykoNClC9i-vfLnubOdgymlpDr2-I") response=llm\_model.invoke(formatted\_chat\_prompt) to\_markdown(response) Out[80]: Al: sir your converted currency is: 7421.13 Indian Rupee 3. FewShotTemplates on Generative Models In [95]: **from** langchain.prompts **import** FewShotPromptTemplate from langchain.prompts import PromptTemplate In [96]: examples=[ "output": "To revoke"}, {"input":"Abrogate", {"input":"Anachronism", "output": "Something inappropriate for the given time period"}, "output":"Complete and wholly"}, {"input":"Arrant", "output": "Harsh in manner"}, {"input": "Asperity", example\_prompt = PromptTemplate( input\_variables=["input", "output"], template="convert the complex english words into simpler words in any paragraphs like complex word '{input}' to simpler synonym '{output}' print(example\_prompt.format(\*\*examples[0])) convert the complex english words into simpler words in any paragraphs like complex word 'Abrogate' to simpler synonym 'To revoke' In [97]: prompt = FewShotPromptTemplate( examples=examples, example\_prompt=example\_prompt, suffix="from this paragraphs replace complex words with their simpler synonmys: {our\_input}", # hamle dini template ho yo chai prompttemplate bhitra ko template jastai input\_variables=["our\_input"], input\_text=""" I am endeavoring to articulate my unwavering enthusiasm for the exalted position of Principal Software Architect, conspicuously promulgated within the digital precincts of ABC Innov formatted\_prompt=prompt.format(our\_input=input\_text) print(prompt.format(our\_input=input\_text)) convert the complex english words into simpler words in any paragraphs like complex word 'Abrogate' to simpler synonym 'To revoke' convert the complex english words into simpler words in any paragraphs like complex word 'Anachronism' to simpler synonym 'Something inappropriate for the given time period' convert the complex english words into simpler words in any paragraphs like complex word 'Arrant' to simpler synonym 'Complete and wholly' convert the complex english words into simpler words in any paragraphs like complex word 'Asperity' to simpler synonym 'Harsh in manner' from this paragraphs replace complex words with their simpler synonmys: I am endeavoring to articulate my unwavering enthusiasm for the exalted position of Principal Software Architect, conspicuously promulgated within the digital precincts of ABC Inno vations Inc. My preternatural trajectory spanning over a lustrum in the fluid domain of software engineering, augmented by the acquisition of a Bachelor's degree in Computer Scienc e from an august institution, imbues me with an unwavering conviction in my adeptness to seamlessly integrate within the echelons of your distinguished organization. from langchain\_google\_genai import GoogleGenerativeAI llm\_model = GoogleGenerativeAI(model="gemini-pro", google\_api\_key="AIzaSyDfnYQykoNClC9i-vfLnubOdgymlpDr2-I") response=llm\_model.invoke(formatted\_prompt) to\_markdown(response) Out[98]: **Original Paragraph:** I am endeavoring to articulate my unwavering enthusiasm for the exalted position of Principal Software Architect, conspicuously promulgated within the digital precincts of ABC Innovations Inc. My preternatural trajectory spanning over a lustrum in the fluid domain of software engineering, augmented by the acquisition of a Bachelor's degree in Computer Science from an august institution, imbues me with an unwavering conviction in my adeptness to seamlessly integrate within the echelons of your distinguished organization. **Revised Paragraph (with simpler synonyms):** I am trying to express my strong interest in the high-ranking position of Principal Software Architect, which has been clearly advertised within the digital offices of ABC Innovations Inc. My exceptional journey of more than five years in the flexible field of software engineering, along with my Bachelor's degree in Computer Science from a prestigious university, gives me the confidence to successfully join your esteemed organization. 4. FewShotChatMessagePromptTemplate on chat Models from langchain.prompts import ChatPromptTemplate, FewShotChatMessagePromptTemplate In [102... examples = [{"input": "convert 100usd to indian rupee", "output": "sir your converted currency is: RS.8301 indian rupee"}, {"input": "convert 100usd to nepali rupee", "output": "sir your converted currency is: Rs.13281 indian rupee"}, {"input": "convert 100usd to nepali rupee", "output": "sir your converted currency is: Rs.13281 indian rupee"}, {"input": "convert 50 indian rupee to nepali rupee", "output": "sir your converted currency is: Rs.160 nepali rupee"}, {"input": "convert 100 chinese Yuan to nepali rupee", "output": "sir your converted currency is: Rs.1866 nepali rupee"}, example\_prompt = ChatPromptTemplate.from\_messages( ("human", "{input}"), ("ai", "{output}"), few\_shot\_prompt = FewShotChatMessagePromptTemplate( example\_prompt=example\_prompt, examples=examples, print(few\_shot\_prompt.format()) Human: convert 100usd to indian rupee AI: sir your converted currency is: RS.8301 indian rupee Human: convert 100usd to nepali rupee AI: sir your converted currency is: Rs.13281 indian rupee Human: convert 100usd to nepali rupee AI: sir your converted currency is: Rs.13281 indian rupee Human: convert 50 indian rupee to nepali rupee AI: sir your converted currency is: Rs.160 nepali rupee Human: convert 100 chinese Yuan to nepali rupee AI: sir your converted currency is: Rs.1866 nepali rupee In [107... final\_prompt = ChatPromptTemplate.from\_messages( ("system", "You are a currency converter assistant. you behave like a chat bot not generative models"), few\_shot\_prompt, ("human", "can you convert the{inpcur} to {outcur}"), formated\_final\_prompt=final\_prompt.format\_messages( inpcur="Rs.5000000 Nepali Rupee", outcur="USD" print(formated\_final\_prompt) [SystemMessage(content='You are a currency converter assistant. you behave like a chat bot not generative models'), HumanMessage(content='convert 100usd to indian rupee'), AIMessag e(content='sir your converted currency is: RS.8301 indian rupee'), HumanMessage(content='convert 100usd to nepali rupee'), AIMessage(content='sir your converted currency is: RS.8301 indian rupee'), HumanMessage(content='convert 100usd to nepali rupee'), AIMessage(content='sir your converted currency is: RS.8301 indian rupee'), 81 indian rupee'), HumanMessage(content='convert 100usd to nepali rupee'), AIMessage(content='sir your converted currency is: Rs.13281 indian rupee'), HumanMessage(content='convert 50 indian rupee to nepali rupee'), AIMessage(content='sir your converted currency is: Rs.160 nepali rupee'), HumanMessage(content='convert 100 chinese Yuan to nepali rupee'), AIMes sage(content='sir your converted currency is: Rs.1866 nepali rupee'), HumanMessage(content='can you convert theRs.5000000 Nepali Rupee to USD')] In [108... **from** langchain\_google\_genai **import** GoogleGenerativeAI llm\_model = GoogleGenerativeAI(model="gemini-pro", google\_api\_key="AIzaSyDfnYQykoNClC9i-vfLnubOdgymlpDr2-I") response=llm\_model.invoke(formated\_final\_prompt) to\_markdown(response) Out[108]: sir your converted currency is: \$43006.67