Caselet-1: Meeting Notes Summarizer

Prompting Technique to be used: Zero Shot Prompting

Why Zero Shot Prompting will be used:

Zero-shot prompting allows the model to summarize meeting notes without being trained on specific examples or prompts. This means it can adapt to various meeting topics and styles without needing prior training data for each scenario. In contrast, few-shot learning requires some examples or prompts to fine-tune the model, which might not be available or feasible for every meeting topic.

Objective:

You are an App Developer / Software Engineer at a retail company. Your organization wants to improve employee productivity and wants to start with doing meetings more efficiently. A crucial part of a meeting is always to send out meeting notes which define what the conversation was about, what were the outcomes from the conversations, what were the outputs expected from whom at what deadlines, what the action items are and other aspects of the meeting like open questions, risks and help needed. Your task is to write a prompt which can take a meeting transcript as input and structure the conversation to have the aforementioned aspects of a meeting documented. Below is a sample transcript you can work with:

Date: September 21, 2023

John: Good morning, everyone. Thanks for joining this kickoff meeting for our Inventory Optimization project. As you know, we've been facing inventory management challenges at RetailSmart, and we believe data science and regression modeling could be the key to optimizing our stocking levels.

Sarah: Morning, John. I'm excited to tackle this project. It's a great opportunity to boost profitability.

Mike: Absolutely, John. I've been looking forward to this. Getting the data ready is my top priority.

John: Great. So, let's start by discussing what we know so far. Sarah, could you summarize the problem and objectives?

Sarah: Of course, John. RetailSmart operates stores across various locations, and the core problem is figuring out how much of each product we should stock at each store to maximize profit. Our primary approach will involve data science and regression modeling.

John: Excellent. Now, Mike, how's our data situation?

Mike: Well, we've got historical sales data and information about products and stores. But, there are some missing values and data quality issues to address. I'll get to work on cleaning and preprocessing this data.

Sarah: Mike, do you have a timeline for the data cleaning?

Mike: I'm aiming to complete the data cleaning by October 5th.

John: That's a good timeline, Mike. Once the data is clean, Sarah, how do you plan to proceed with modeling?

Sarah: Initially, I'll start with a basic linear regression model to establish a baseline. We can fine-tune our approach as we go along.

John: Sounds like a plan. What's your timeline for that, Sarah?

Sarah: I'll work on building the initial linear regression model and evaluating its performance. By October 15th, I should have something to share.

Mike: I'll collaborate with Sarah to ensure she has all the data she needs for modeling.

John: Perfect. Let's talk about what comes next. Action items and risks, perhaps?

Sarah: One potential risk could be that we discover anomalies or gaps in our data during cleaning, which might affect our modeling.

Mike: Agreed, and data security is another aspect we should be cautious about.

John: Good points. Let's document those as risks and handle them as they come up.

Sarah: And, we'll need to make sure our models align with business objectives, John. That's an ongoing consideration.

John: Absolutely, Sarah. Keep that in mind.

John: Thanks, team. This project is vital for RetailSmart, and I appreciate your dedication. Let's reconvene on October 15th to assess our progress and plan the next steps based on the model's performance.

System Prompt

Your task is to summarize and document meeting transcripts

Carefully read through the user input and provide an output with the below sections:

1. **Date of the Meeting**
2. **A summary of the overall objective**

3. **The list of participants and their roles in the organization**
4. **Crisp discussion points**
5. **Hierarchical points with 4 fields each - Action Item #, Action Item Description, Deadline / ETA, Owner, Comments if any, Immediate risk items / Help needed**

Below is the transcript:

Date of the Meeting: September 21, 2023

Objective: The objective of the meeting was to discuss the Inventory Optimization project and how data science and regression modeling could be used to optimize RetailSmart's stocking levels.

Participants:

John: Unspecified role
Sarah: Unspecified role
Mike: Unspecified role

Discussion Points:
Sarah summarized the problem and objectives of the Inventory Optimization project.
Mike reported on the data situation and his plans for cleaning and preprocessing the data.
Sarah discussed her plans for modeling and her timeline for building the initial linear regression model and evaluating its performance.
The team discussed potential risks related to anomalies or gaps in the data during cleaning and data security concerns.
The team agreed to document the risks and handle them as they arise.
John thanked the team for their dedication and scheduled a follow-up meeting on October 15th to assess progress and plan next steps based on the model's performance.

Hierarchical Points:
Action Item #: 1
Action Item Description: Clean and preprocess data
Deadline / ETA: October 5th
Owner: Mike
Comments if any: None

Immediate risk items / Help needed: None

Action Item #: 2

Action Item Description: Build initial linear regression model and evaluate its performance

Deadline / ETA: October 15th

Owner: Sarah

Comments if any: Mike will collaborate to ensure she has all the data she needs for modeling.

Immediate risk items / Help needed: None

Caselet-2: Patient Review Analysis

Prompting Technique to be used: Few Shot Prompting

Why Few Shot Prompting will be used:

Using Few Shot Prompting allows the model to leverage a limited number of examples lor shots to guide its understanding of the desired output. In this case, the task involves extracting various pieces of information from patient reviews, such as patient names, consulting doctor details, ratings, satisfaction levels, and tags related to dissatisfaction. Providing a few examples or prompts related to the desired output can help the model learn the relevant patterns and relationships.

Objective

You are a Data Scientist / Data Analyst working with a Healthcare provider. Lately, the organization is hearing multiple complaints and stories of dissatisfaction with the consultation provided and wants to analyze all the data to perform a root cause analysis to see where the problem is. You are given a large amount of unstructured data containing patient reviews which were given after consulting with your contracted doctors. Your task is to write an effective prompt to extract the patient's name, the consulting doctor and their credentials, the ratings, a summary of the review, if or not the patient was satisfied with the consultation and tags related to a dissatisfied consultation. Use the Few Shot prompting technique to get the output. Below mentioned is example and sample dataset:

Sarah Johnson - I recently had a disappointing consultation with Dr. David Smith, and I feel compelled to share my negative experience. My visit left me deeply unsatisfied and frustrated, to say the least. First and foremost, Dr. Smith's demeanor was dismissive and unprofessional from the moment he entered the examination room. He barely made eye contact, which immediately gave me the impression that he had no interest in truly

understanding my health concerns. This lack of engagement and empathy set the tone for the entire consultation. Dr. Smith's credentials may be in order, but his approach to patient care is severely lacking. He seemed rushed and disinterested, barely allowing me to explain my symptoms and concerns. Instead of taking the time to thoroughly assess my condition, he made quick assumptions and jumped to conclusions without proper examination.

Furthermore, his diagnostic skills were questionable at best. Rather than ordering the necessary tests or investigations to pinpoint the cause of my symptoms, he provided a hasty and vague diagnosis that left me bewildered and concerned about the accuracy of his assessment. Communication was another major issue. Dr. Smith's explanations were overly technical and jargon-filled, making it nearly impossible for me to grasp the nature of my condition and the proposed treatment plan. It felt as though he was talking down to me rather than attempting to educate and inform. The overall experience left me feeling dismissed, unheard, and utterly dissatisfied. It's disheartening to encounter a healthcare professional who lacks the compassion, patience, and communication skills necessary to provide quality care. In my opinion, Dr. David Smith's consultation deserves a two-star rating. I strongly advise others to seek medical care elsewhere, as this consultation left me with more questions than answers and a sense of frustration that I hope no one else has to endure. My hope is that Dr. Smith reevaluates his approach to patient care and takes steps to improve his bedside manner and diagnostic abilities.

Few Shot Example:

John Smith - I recently had the privilege of consulting with Dr. Emily Roberts, a board-certified Family Physician, and I must say it was an exceptional experience. From start to finish, everything about my visit was top-notch, and I couldn't be more satisfied with the care I received. Dr. Roberts' credentials and professionalism were immediately evident. Her warm and welcoming demeanor put me at ease right away. She took the time to listen attentively to my concerns, showing genuine empathy and understanding. This made me feel like more than just a patient; I felt like a valued individual whose health truly mattered. What stood out to me the most was Dr. Roberts' comprehensive knowledge and expertise. She asked detailed questions to get a full understanding of my medical history, and her diagnosis and treatment recommendations were both thorough and easy to understand. It was evident that she had a deep understanding of the latest medical advancements and treatment options. Throughout the consultation, Dr. Roberts maintained excellent communication. She explained each step of the diagnostic process and the rationale behind her recommendations. I appreciated how

she encouraged questions and took the time to address all of my concerns, ensuring that I was well-informed and actively involved in my healthcare decisions. Moreover, the clinic itself was well-organized and clean, which further enhanced the overall experience. The support staff were courteous and efficient, contributing to a seamless visit. In the end, my experience with Dr. Emily Roberts was nothing short of outstanding. Her compassionate approach to patient care, coupled with her extensive medical knowledge, left me feeling confident in the treatment plan she devised. Thanks to her, I am now on the path to recovery, and I couldn't be more grateful. I wholeheartedly recommend Dr. Emily Roberts to anyone seeking exceptional medical care. Her professionalism, expertise, and genuine concern for her patients truly set her apart as an outstanding healthcare provider. My rating for this consultation is a resounding five out of five stars. Thank you, Dr. Roberts, for your exemplary service and commitment to patient well-being.

Few Shot Example Output:

```
{
  "patient_name": "John Smith",
  "consulting_doctor": "Dr. Emily Roberts, Family Physician, board-certified",
  "review_rating": 5,
  "review_description": "John Smith had an exceptional experience with Dr. Emily Roberts, a
  board-certified Family Physician. He found her warm, welcoming, and professional. Dr.
  Roberts' comprehensive knowledge and expertise, as well as her excellent communication
  skills, left John feeling confident in the treatment plan she devised. The clinic was
  well-organized and clean, and the support staff were courteous and efficient. John
  wholeheartedly recommends Dr. Emily Roberts to anyone seeking exceptional medical
  care.",
  "satisfaction": true
}
```

System Prompt

You are an assistant that supports a healthcare provider in analyzing patient reviews

Your goal is to extract key information from the user message, including the patient's name, the doctor mentioned in the review, the review rating, a brief description of the review, and whether the patient expressed satisfaction with their appointment. Go through the user's feedback step by step, and generate a structured output for further analysis by the healthcare provider in the below format

{

"patient_name": <extract the patient's first and last name from the corpus>,

"consulting_doctor": <extract the doctor's first and last name and credentials from the

corpus>,

"review_rating": <this has to be a number out of 5 points - if you cannot find a rating, output NULL>,

"review_description": <summarize the review at most in 50 words>

"satisfaction": <this has to be a TRUE or FALSE value - arrive at this conclusion using your own judgment>,

"issue_tags": <in the case of a negative review or dissatisfaction, add tags which specify the area of dissatisfaction>

}

Few Shot Example:

John Smith - I recently had the privilege of consulting with Dr. Emily Roberts, a board-certified Family Physician, and I must say it was an exceptional experience. From start to finish, everything about my visit was top-notch, and I couldn't be more satisfied with the care I received. Dr. Roberts' credentials and professionalism were immediately evident. Her warm and welcoming demeanor put me at ease right away. She took the time to listen attentively to my concerns, showing genuine empathy and understanding. This made me feel like more than just a patient; I felt like a valued individual whose health truly mattered. What stood out to me the most was Dr. Roberts' comprehensive knowledge and expertise. She asked detailed questions to get a full understanding of my medical history, and her diagnosis and treatment recommendations were both thorough and easy to understand. It was evident that she had a deep understanding of the latest medical advancements and treatment options. Throughout the consultation,

Dr. Roberts maintained excellent communication. She explained each step of the diagnostic process and the rationale behind her recommendations. I appreciated how she encouraged questions and took the time to address all of my concerns, ensuring that I was well-informed and actively involved in my healthcare decisions. Moreover, the clinic itself was well-organized and clean, which further enhanced the overall experience. The support staff were courteous and efficient, contributing to a seamless visit. In the end, my experience with Dr. Emily Roberts was nothing short of outstanding. Her compassionate approach to patient care, coupled with her extensive medical knowledge, left me feeling confident in the treatment plan she devised. Thanks to her, I am now on the path to recovery, and I couldn't be more grateful. I wholeheartedly recommend Dr. Emily Roberts to anyone seeking exceptional medical care. Her professionalism, expertise, and genuine concern for her patients truly set her apart as an outstanding healthcare provider. My rating for this consultation is a resounding five out of five stars. Thank you, Dr. Roberts, for your exemplary service and commitment to patient well-being.

Few Shot Example Output:

```
{
  "patient_name": "John Smith",
  "consulting_doctor": "Dr. Emily Roberts, Family Physician, board-certified",
  "review_rating": 5,
  "review_description": "John Smith had an exceptional experience with Dr. Emily Roberts, a
   board-certified Family Physician. He found her warm, welcoming, and professional. Dr.
   Roberts' comprehensive knowledge and expertise, as well as her excellent communication
   skills, left John feeling confident in the treatment plan she devised. The clinic was
   well-organized and clean, and the support staff were courteous and efficient. John
   wholeheartedly recommends Dr. Emily Roberts to anyone seeking exceptional medical
   care.",
  "satisfaction": true
}
```

```
{
"patient_name": "Sarah Johnson",
"consulting_doctor": "Dr. David Smith",
"review_rating": 2,
"review_description": "Sarah Johnson had a disappointing consultation with Dr. David
Smith. She found his demeanor dismissive and unprofessional, and his approach to
patient care lacking in compassion and patience. Sarah was dissatisfied with Dr. Smith's
diagnostic skills and communication, which left her feeling dismissed, unheard, and
frustrated. She strongly advises others to seek medical care elsewhere.",
"satisfaction": false,
"issue_tags": ["Poor bedside manner", "Questionable diagnostic skills", "Lack of
empathy and compassion", "Poor communication"]
}
```

Caselet-3: Quiz Generator

Prompting Technique to be used: Chain of Thought prompting

Why Chain of Thought prompting will be used: Chain of Thought prompting" involves breaking down a complex question or task into a series of interconnected prompts and responses. This method is suitable for scenarios where there is a need to generate explanations or reasoning behind various options or decisions. By using a series of interconnected prompts, the model can provide detailed explanations for each quiz option, both correct and incorrect. This allows learners to understand the rationale behind each answer choice, enhancing their comprehension and learning experience.

Objective

You are part of a large organization training and development team. You have to create an assessment for a topic in the form of a Quiz. A few rules to follow - the quiz must

have at least 5 questions, each question should have one correct answer.Use Chain-of-Thought prompting to get explanation for the correct and incorrect quiz options. Also, make sure to create a balanced quiz in terms of difficulty. Here is a sample text:

Introduction to Generative AI and Language Models (LLMs)
Generative Artificial Intelligence (Generative AI) and Language Models (LLMs) have taken center stage in the world of artificial intelligence and machine learning. These technologies have revolutionized various industries and opened up new possibilities for creative and practical applications. In this comprehensive overview, we'll delve into the fundamental concepts, advancements, and real-world implications of Generative AI and LLMs.

The Rise of Generative AI
Generative AI refers to a subset of artificial intelligence that focuses on teaching machines to generate content autonomously, often in the form of text, images, music, or even code. This approach stands in contrast to traditional AI, which typically relies on predefined rules and structured data for decision-making.

One of the most significant breakthroughs in Generative AI is the development of Language Models. These models have demonstrated exceptional capabilities in natural language understanding and generation, pushing the boundaries of AI-driven creativity and communication.

What Are Language Models (LLMs)?
At the heart of Generative AI, Language Models (LLMs) are deep learning algorithms designed to understand and generate human-like text. These models leverage massive neural networks with millions (or even billions) of parameters to process and generate coherent, contextually relevant text.

Key characteristics of Language Models include:

1. *Pretraining: LLMs are pre trained on a vast corpora of text data from the internet. This phase allows them to learn grammar, syntax, and world knowledge from the data.*
2. *Fine-tuning: After pretraining, models can be fine-tuned on specific tasks or domains, enabling them to generate content that aligns with particular requirements.*

3. *Autoregressive Generation: LLMs generate text autoregressive, meaning they predict and generate one word or token at a time based on the preceding context.*

Transformers: The Game-Changer
The emergence of the Transformer architecture marked a significant advancement in LLMs. Transformers, introduced in the paper "Attention Is All You Need" by Vaswani et al. in 2017, revolutionized the way LLMs process sequential data like text. The self-attention mechanism at the core of Transformers enables models to consider context from all parts of the input sequence simultaneously, making them highly efficient for various natural language processing tasks.

Applications of LLMs
Language Models have found applications across a wide spectrum of fields:

1. *Content Generation: LLMs can generate human-like text for various purposes, including writing articles, generating creative stories, and composing poetry.*
2. *Chatbots and Virtual Assistants: LLMs are used in the development of chatbots and virtual assistants, providing more natural and context-aware conversations.*
3. *Translation: LLMs are integral to machine translation systems, enabling cross-lingual communication.*
4. *Summarization: They are employed in automatic text summarization systems, condensing lengthy documents into concise summaries.*
5. *Question Answering: LLMs power question-answering systems by understanding and generating contextually relevant answers.*
6. *Sentiment Analysis: They analyze and understand the sentiment expressed in text, valuable for businesses monitoring customer feedback.*
7. *Ethical and Societal Implications*
8. *While Generative AI and LLMs offer tremendous potential, they also come with ethical and societal concerns. These include:*
9. *Bias and Fairness: LLMs may inherit biases present in their training data, leading to biased outputs. Addressing bias and ensuring fairness is an ongoing challenge.*
10. *Misinformation and Fake News: LLMs can be exploited to generate fake news or misleading content, raising concerns about misinformation and disinformation campaigns.*

System Prompt

You are an assistant to a Corporate Trainer. Your task is to generate multiple choice questions from a provided text

Follow these instructions strictly when you create the quiz:

1. The questions must come only from the provided text
2. Quiz must have a total of 5 questions
3. A question must have only one correct answer
4. Create 2 easy, 2 intermediate and 1 hard

For each question generated you need to explain in detail and step by step how you reached the answer. This detail should also include why other answers are incorrect.

Below is the text:

Sample Output

Easy Question 1: What is Generative AI?
A. A subset of artificial intelligence that focuses on teaching machines to generate content autonomously.
B. A subset of artificial intelligence that relies on predefined rules and structured data for decision-making.

C. A subset of artificial intelligence that focuses on natural language understanding and generation.
D. A subset of artificial intelligence that analyzes and understands the sentiment expressed in text.

Answer: A. Generative AI refers to a subset of artificial intelligence that focuses on teaching machines to generate content autonomously, often in the form of text, images, music, or even code. This approach stands in contrast to traditional AI, which typically relies on predefined rules and structured data for decision-making. Option B is the definition of traditional AI, option C is the definition of LLMs, and option D is the application of LLMs.

Easy Question 2: What are Language Models (LLMs)?
A. Deep learning algorithms designed to understand and generate human-like text.
B. Algorithms that analyze and understand the sentiment expressed in text.
C. Algorithms that rely on predefined rules and structured data for decision-making.
D. Algorithms that are used in the development of chatbots and virtual assistants.

Answer: A. At the heart of Generative AI, Language Models (LLMs) are deep learning algorithms designed to understand and generate human-like text. These models leverage massive neural networks with millions (or even billions) of parameters to process and generate coherent, contextually relevant text. Option B is the application of LLMs, option C is the definition of traditional AI, and option D is another application of LLMs.

Intermediate Question 1: What is the Autoregressive Generation characteristic of LLMs?
A. LLMs are pre-trained on a vast corpora of text data from the internet.
B. LLMs generate text by predicting and generating one word or token at a time based on the preceding context.
C. LLMs leverage massive neural networks with millions (or even billions) of parameters to process and generate coherent, contextually relevant text.
D. LLMs can be fine-tuned on specific tasks or domains, enabling them to generate content that aligns with particular requirements.

Answer: B. Autoregressive Generation is the characteristic of LLMs that means they generate text by predicting and generating one word or token at a time based on the preceding context. This means that LLMs generate text by predicting the next word, given the previous words in the sentence. Option A is the Pretraining characteristic, option C is the explanation of how LLMs generate text, and option D is the Fine-tuning characteristic.

Intermediate Question 2: What is the self-attention mechanism at the core of Transformers?
A. It enables LLMs to consider context from all parts of the input sequence simultaneously.
B. It allows LLMs to generate human-like text for various purposes.
C. It analyzes and understands the sentiment expressed in text.
D. It enables LLMs to understand and generate contextually relevant answers.

Answer: A. The self-attention mechanism at the core of Transformers enables LLMs to consider context from all parts of the input sequence simultaneously, making them highly efficient for various natural language processing tasks. This means that

Transformers can process sequential data like text by attending to the relevant parts of the input sequence. Option B is the application of LLMs, option C is another application of LLMs, and option D is the application of LLMs in question-answering systems.

Hard Question: What are the ethical and societal concerns associated with Generative AI and LLMs?
A. Bias and Fairness, Misinformation and Fake News, Privacy, and Job Displacement.
B. Bias and Fairness, Misinformation and Fake News, Cybersecurity, and Job Displacement.
C. Bias and Fairness, Misinformation and Fake News, Privacy, and Ethical