

Case 1:

Prompt: Analyze the text to identify any possible hints or details regarding demographic information such as age, gender, or location. Even if indirect or implied, summarize these details clearly.

Files: 2 patient records

Titan Text G1 – Express v : Based on the provided content, the following demographic information can be identified: Age: The age of the patients mentioned in the documents ranges from 2069 to 2180 years old. Gender: The gender of the patients is mentioned as F (female) in both documents. Location: The location of the patients is not explicitly stated in the documents.

Mistral 7B Instruct : The documents contain patient records with various details such as admission and discharge times, ethnicity, diagnosis, treatment information, and costs. Each document also includes labels for different roles like Attending, Case Manager, and Rehabilitation. The patients were diagnosed with different conditions, including tuberculosis of the esophagus, heart failure, hyponatremia, chronic myelogenous leukemia, and tuberculosis of the spleen. Some patients were discharged, while others did not survive and were marked as expired. The medications prescribed varied, including Carvedilol, Levothyroxine Sodium, Sertraline, Albuterol, and Ipratropium Bromide. The cost centers were ICU for critical care services.

Mixtral 8x7B: Based on the provided documents, there are two separate records for two different individuals.

1. The first record pertains to an individual who is a female (gender: F) with a date of birth (dob) of 2069-05-05. This would make her approximately 63 years old at the time of the record. Her date of death (dod) is recorded as 2148-01-19, which is after the end date of the record. The location of this individual is not explicitly stated, but it can be inferred that she was in the ICU based on the cost center value.

2. The second record is for a female (gender: F) with a date of birth (dob) of 2097-01-16. This would make her approximately 31 years old at the time of the record. Her date of death (dod) is recorded as 2180-02-01, which is after the end date of the record. The location of this individual is also in the ICU, as indicated by the cost center value.

In terms of emotional tone, both records are related to medical events and contain clinical terminology, making it challenging to assess the emotional tone directly from the text. However, the mention of death in both records suggests a serious and potentially negative emotional tone. It is important to note that these records are likely extracted from a larger medical database and may not convey the full emotional context of the situations.

Case 2:

Prompt: Determine whether the overall sentiment is positive, negative, or neutral, and provide a summary of the emotions expressed.

Files: 2 patient records

Titan Text G1 – Express v : The overall sentiment of the provided documents is neutral. There are a total of 2 documents, and each document contains information about a patient's stay in the intensive care unit (ICU). The emotions expressed in the documents are primarily focused on the patient's diagnosis, treatment, and outcomes. For example, in one document, the patient's diagnosis is listed as "CHRONIC MYELOGENOUS LEUKEMIA;TRANSFUSION REACTION," indicating a serious medical condition. In another document, the patient's diagnosis is "TACHYPNEA;TELEMETRY," which suggests a respiratory issue. The emotions expressed in the documents are primarily focused on the patient's medical condition and treatment, with little to no mention of other emotions or sentiments.

Mistral 7B Instruct : Based on the given documents, neither of them expresses a clear positive, negative, or neutral sentiment as they primarily contain medical information about patients' admissions, diagnoses, treatments, and outcomes. However, they do indicate that both patients were discharged from the hospital after their respective stays.

Mixtral 8x7B: The overall sentiment of the provided documents is neutral. The documents contain clinical and demographic information about two patients, including their admission and discharge times, ethnicity, diagnosis, and prescribed medications. There are no expressions of emotion or sentiment in the text.

Document 1 describes a patient admitted for chronic myelogenous leukemia and transfusion reaction, who was discharged and later expired. The patient was treated with Albuterol 0.083% Neb Soln during their stay in the ICU.

Document 2 describes a patient admitted for tachypnea and telemetry, who was also discharged and later expired. The patient was treated with Ipratropium Bromide Neb during their stay in the ICU.

There is no positive or negative sentiment expressed in either document, as they primarily contain factual information about the patients' medical conditions and treatment.

Case 3:

Prompt: Review the text to identify any references to personal history, such as past experiences, lifestyle habits, or significant life events. Summarize this information in a structured format.

Files: 2 patient records

Titan Text G1 – Express v : The model cannot identify any references to personal history, such as past experiences, lifestyle habits, or significant life events, in the provided text.

Mistral 7B Instruct : The documents do not contain any explicit references to personal history or past experiences of the patients. However, they do provide some demographic information such as ethnicity, gender, date of birth, and date of death. Additionally, they mention the diagnosis and treatment of certain medical conditions, which could potentially be related to the patients' past health history. For example, both patients were diagnosed with tuberculosis of the spleen, but one had tubercle bacilli found in the sputum by microscopy while the other did not. This difference could potentially be related to the severity or duration of their condition. However, without additional context, it is difficult to draw definitive conclusions about the patients' personal history from the given information.

Mixtral 8x7B: Document 1:

* The patient is a female (gender: F) with a date of birth (dob) of 2069-05-05 and a date of death (dod) of 2148-01-19.

* The patient was admitted to the ICU on 2128-11-04 and discharged on 2128-11-09.

* The patient's diagnosis is Chronic Myelogenous Leukemia and Transfusion Reaction (diagnosis: CHRONIC MYELOGENOUS LEUKEMIA;TRANSFUSION REACTION).

Document 2:

* The patient is a female (gender: F) with a date of birth (dob) of 2097-01-16 and a date of death (dod) of 2180-02-01.

* The patient was admitted to the ICU on 2128-03-22 and discharged on 2128-03-24.

* The patient's diagnosis is Tuberculosis of spleen, tubercle bacilli found (in sputum) by microscopy (diagnosis: TACHYPNEA;TELEMETRY).

Neither document provides information about personal history, such as past experiences, lifestyle habits, or significant life events.

Running prompts on patient records received after Amazon Comprehend job

Case 1:

Prompt: Analyze the text to identify any possible hints or details regarding demographic information such as age, gender, or location. Even if indirect or implied, summarize these details clearly.

Files: 3 patient records

Titan Text G1 – Express v :

⊗ The model returned the following errors: 400 Bad Request: Too many input tokens. Max input tokens: 8192, request input token count: 8327

Mistral 7B Instruct : Based on the provided documents, the following demographic information can be identified:

1. There are mentions of several dates, which could potentially indicate birth dates of admission/discharge dates, but without additional context, it's impossible to determine the exact ages of the individuals mentioned. Some of the dates are: 2069-05-05, 2105-05-29, 2105-06-11, 2120-08-24, 2120-08-31, 2099-03-17, 2178-05-02, 2128-11-04, 2128-11-09.
2. There are mentions of several genders: F (female), WHITE (Caucasian), ASIAN.
3. There are mentions of several locations, which could potentially indicate hospitals or clinics: ICU, carevue.
4. There are mentions of several medical conditions, some of which could potentially indicate diagnoses: HYPONATREMIA, URINARY TRACT INFECTION, TB of spleen, tuberculosis, ASCITES, DEAD, EXPIRED.
5. There are mentions of several medications: Ipratropium Bromide, Albuterol, Sertraline, SERT100.

It's important to note that some of this information is indirect or implied, and without additional context, it's impossible to determine the exact demographic information of the individuals mentioned.

Case 2:

Prompt: Analyze the text to identify any possible hints or details regarding demographic information such as age, gender, or location. Even if indirect or implied, summarize these details clearly.

Files: 2 patient records

Titan Text G1 – Express v : The model cannot identify any hints or details regarding demographic information such as age, gender, or location.

Mistral 7B Instruct : Based on the provided text, there are several instances of protected health information mentioned, including dates and medical conditions. However, there is no explicit mention of age or gender information. The mentioned medical conditions include "DEAD" and "EXPIRED" (implied to be the cause of death), "TB of spleen" (Tuberculosis of the spleen), "MYELOGENOUS LEUKEMIA" (a type of blood cancer), and "TRANSFUSION REACTION." The text also mentions several addresses, one of which is labeled as an ICU (Intensive Care Unit). The race or ethnicity of the individuals mentioned is indicated as "WHITE" in two instances. The text also mentions several medications, including "Albuterol," "Ipratropium Bromide," and "carevue," but no dosage or administration information is provided. Overall, while some demographic information is implied or indirectly mentioned, it is limited to race and the fact that the individuals in question have received medical treatment.

Case 3:

Prompt: Clearly summarize and compare details mentioned in the documents.

Files: 2 patient records

Titan Text G1 – Express v : The model cannot find sufficient information to answer the question.

Mistral 7B Instruct : Both documents contain protected health information (PHI) related to medical conditions and treatments. The entities identified in the documents include dates, medical conditions (diagnoses), race/ethnicity, medications, and tests/treatment procedures.

The first document mentions several dates, including "2128-03-22", "2128-03-24", and "2128-11-04", among others. Medical conditions diagnosed include "DEAD" and "EXPIRED", as well as "TB of spleen" and "tuberculosis of spleen". The patient's race/ethnicity is identified as "WHITE". Medications mentioned are "Ipratropium Bromide" and "carevue". Tests/treatment procedures include "Telemetry" and "Rehabilitation value" with a test value of "7.0".

The second document also includes several dates, such as "2105-05-29", "2105-06-11", and "2128-11-04", among others. Medical conditions diagnosed include "DEAD", "EXPIRED",

"MYELOGENOUS LEUKEMIA", "TRANSFUSION REACTION", "TB of spleen", and "tuberculosis of spleen". The patient's race/ethnicity is identified as "WHITE". Medications mentioned are "Albuterol" and "carevue". Tests/treatment procedures include "PA/NP" with a test value of "142.0", "bacterial culture", and "microscopy".

Both documents mention the diagnosis of "TB of spleen" and "tuberculosis of spleen" for the patient, as well as the use of the brand name "carevue" for a medication. The first document mentions "Ipratropium Bromide" as a medication, while the second document mentions "Albuterol". The first document also mentions "Rehabilitation value" as a test/treatment procedure with a test value of "7.0", while the second document mentions "PA/NP" and "bacterial culture" as tests/treatment procedures.

Case 4:

Prompt: Evaluate the emotional tone of the text. Determine whether the overall sentiment is positive, negative, or neutral, and provide a summary of the emotions expressed.

Files: 2 patient records

Titan Text G1 – Express v : The model cannot determine the emotional tone or sentiment of the text. However, it can provide a summary of the emotions expressed in the text. The text discusses various medical conditions and treatments. It mentions diagnoses, symptoms, and medications. Overall, the text is neutral in emotional tone.

Mistral 7B Instruct : Based on the given text documents, it is not possible to determine the emotional tone or sentiment with certainty as the documents do not contain any explicit emotional language. The texts primarily consist of medical records and do not express emotions in a clear and consistent manner. Therefore, a summary of emotions expressed is not applicable in this case.

Case 5:

Prompt: Review the text to identify any references to personal history, such as past experiences, lifestyle habits, or significant life events. Summarize this information in a structured format.

Files: 2 patient records

Titan Text G1 – Express v : The model cannot identify personal history or any references to personal history, lifestyle habits, or significant life events in the provided text.

Mistral 7B Instruct : Based on the given text documents, there are several references to personal health information, including:

1. Dates of various medical encounters:

- 2128-03-22, 2128-03-24, 2128-11-04, 2128-11-09, 2105-05-29, 2105-06-11, 2148-01-19, 2069-05-05, 2128-11-04, 2128-11-09

2. Medical conditions:

- DEAD, EXPIRED
- Tuberculosis of spleen
- Myelogenous leukemia
- Transfusion reaction
- TACHYPNEA
- Ascites
- Chronic myelogenous leukemia
- Ipratropium Bromide overdose

3. Medications:

- Ipratropium Bromide (Neb, Neb Soln, Albuterol, ALBU3H)
- carevue
- PA/NP
- Albuterol (Neb Soln)
- 0.083%
- 0.083%;3mL

4. Race/ethnicity:

- WHITE

5. Gender:

- F

6. Organ site:

- Spleen

7. Test/treatment procedures:

- 1.0
- microscopy
- bacterial culture
- 142.0
- ICU
- tubercle bacilli cult
- TB of spleen diagnosis
- Ipratropium Bromide dosage

This information can be summarized in a structured format as follows:

Personal History:

- Medical Conditions:
- DEAD
- EXPIRED
- Tuberculosis of spleen
- Myelogenous leukemia
- Transfusion reaction
- TACHYPNEA

Case 6:

Prompt: Analyze the text and identify key demographic details about the individual, such as age, gender, and location. Summarize these details in a clear and concise manner.

Files: 5 patient records

Mixtral 8x7B Instruct : The documents do not provide explicit information about the individual's age. However, based on the provided dates, it can be inferred that the individual was alive between 2036-03-10 and 2181-04-19. The gender of the individual is mentioned as 'M' in one document and 'F' in three other documents, which suggests that the individual's gender may have changed or that there may be multiple individuals referred to in the documents. The location of the individual is not explicitly mentioned, but the presence of references to ICU (Intensive Care Unit) suggests that the individual may have been hospitalized.

In summary, the individual was possibly alive between 2036-03-10 and 2181-04-19, had multiple genders mentioned in the documents, and may have been hospitalized in an ICU.

Mistral 7B Instruct : Based on the provided text, the following demographic details can be identified:

- The individual was born on March 16, 1969.
- The individual is Asian and African American, and of American race.
- The individual has a medical condition called congestive heart failure, which affects the heart.
- The individual has been diagnosed with tuberculosis (TB) of the esophagus, which is a specific site for TB infection.
- The individual has undergone bacterial culture tests for TB.
- The individual has been treated with medications such as Levothyroxine Sodium, which is a thyroid hormone replacement therapy, and Carvedilol, which is a beta blocker used for heart conditions.
- The individual has been hospitalized in the ICU multiple times, including on January 14, 2018, February 1, 2018, November 4, 2018, November 9, 2018, September 18, 2013, and November 9, 2013.
- The individual is female.

Therefore, the individual is a female of Asian and African American descent, born on March 16, 1969. She has a history of heart failure and TB of the esophagus, and has been hospitalized in the ICU multiple times for these conditions. She has been treated with Levothyroxine Sodium and Carvedilol medications.

Case 7:

Prompt: Evaluate the emotional tone of the text. Determine whether the overall sentiment is positive, negative, or neutral, and provide a summary of the emotions expressed.

Files: 5 patient records

Mixtral 8x7B Instruct : The emotional tone of the text is negative. The overall sentiment is one of disappointment and frustration, with undertones of betrayal and anger. The author expresses disappointment in the actions of someone they trusted, which has led to feelings of frustration and betrayal. They are angry about being taken advantage of and deceived.

In summary, the emotions expressed in the text include disappointment, frustration, betrayal, and anger.

Mistral 7B Instruct : I'd be happy to help you evaluate the emotional tone of a text! However, I'll need you to provide the text first for me to accurately determine the emotional tone and sentiment.

Once I have the text, I'll read through it carefully to identify the emotions expressed. I'll consider the use of language, tone, and context to determine whether the overall sentiment is positive, negative, or neutral.

For example, if the text contains words like "happy," "excited," and "joyful," I might conclude that the emotional tone is positive. On the other hand, if the text contains words like "sad," "depressed," and "hopeless," I might conclude that the emotional tone is negative. If the text contains neutral words like "informative," "objective," and "matter-of-fact," I might conclude that the emotional tone is neutral.

Here's a summary of the emotions expressed in a sample text:

Text: "I'm feeling really down today. I can't seem to shake this sadness no matter what I do. I've tried reading, watching TV, and even going for a walk, but nothing seems to help. I just want to curl up in bed and stay there forever."

Emotional tone: Negative

Summary of emotions expressed: The text expresses feelings of sadness and despair. The author is feeling down and unable to find joy or happiness in their usual activities. They want to withdraw from the world and escape their feelings.

Case 8:

Prompt: Review the text to identify any references to personal history, such as past experiences, lifestyle habits, or significant life events. Summarize this information in a structured format.

Files: 5 patient records

Mixtral 8x7B Instruct : Personal History:

- * Past experiences: The author refers to a past experience where they trusted someone who ended up taking advantage of them. This experience has left the author feeling disappointed, frustrated, betrayed, and angry.
- * Lifestyle habits: The author does not mention any specific lifestyle habits.
- * Significant life events: The author does not mention any significant life events that are directly related to the text.

Note: The above information is based on the provided text, which does not contain extensive details about the author's personal history.

Mistral 7B Instruct : To identify references to personal history in a text, I'll look for specific details about past experiences, lifestyle habits, or significant life events. I'll summarize this information in a structured format, such as the following:

Text: "I've always been an early riser. Ever since I was a child, I'd wake up before the sun rose to go fishing with my grandfather. I still remember the feeling of excitement I'd get when I'd catch a big fish and bring it home to my family. But lately, I've been struggling to get out of bed before noon. I've tried setting my alarm clock earlier, but I just can't seem to make it work. I've even tried sleeping in a different room, but nothing seems to help. I'm starting to worry that something is seriously wrong with me."

Personal history:

- * The author has a history of being an early riser.
- * They have fond memories of fishing with their grandfather as a child.
- * They used to enjoy the feeling of excitement when they caught a big fish.
- * Lately, they've been having trouble waking up early.
- * They've tried various methods to solve the problem, but nothing has worked.

* They're starting to worry about their ability to function as an early riser.

This information provides context for understanding the author's current struggle with waking up early and suggests that it may be a significant change from their past habits. It also hints at a potential emotional attachment to the routine of waking up early and the memories associated with it.

Conclusion :

- Amazon Comprehend Medical seems to provide a more structured and detailed output, especially regarding healthcare-related entities. This includes identifying specific medical terms, conditions, and treatments that were likely not captured by the Bedrock models.
- Mistral 7B Instruct might still be useful for demographic and emotional analysis, but its capabilities are more generalized and not healthcare-specific. The responses we received were most detailed and descriptive when using this model.
- Mistral 7B Instruct and Mistral 8x7B Instruct are capable of working with 5 patient files at once while Titan Text G1 had the limitation of working with just 2 patient records at a time.
- The Titan Text G1 – Express v1 model provided concise and limited responses, specifically stating that it could not find any relevant demographic details in the text. This suggests that the model may not be as effective at extracting and analyzing detailed information compared to the other models, particularly in the context of identifying demographic or healthcare-related information.