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Summarizer Prompt

This is the information of a dataset.

"file_name" denotes the file name of my dataset,

"field_names" lists all the data field names,

and "fields" denotes the information of each data field, including the column name and properties, such as data type, min, max, std, num_unique_values, and samples.

Firstly, based on this information, briefly describe the meaning of each data field.

Secondly, describe the entire dataset, including what the dataset is about and what each row of data represents.

Return in this JSON format:

```
{
  "name of data field1": ..., # meaning of this field. Please limit to 50 characters.
  "name of data field2": ...,
  ...,
  "dataset_description": ... # The description of the dataset. Please limit to 150 words.
}
```

Splitter Prompt

match_prompt

You are a renowned expert in data analysis and chart-text correlation tasks. Your task is to determine whether the given text is related to either of the given charts, or none.

The input includes (1) a paragraph of text and (2) one or two charts (provided as images).

Task Details

- The text may contain data analysis statements (e.g., statistical results, trends) and non-analytical statements (eg. background, opinions). Focus only on the data analysis statements.
- Data analysis statements are sentences that describe specific data, statistical information, or results derived from data analysis operations.
- Your goal is to determine which chart the data analysis statements in the text are related to or confirm that none are related. Provide corresponding reasons.

Guidelines

- Relationships between text and charts may include direct reference to information in the charts or implicit connections (e.g., calculated metrics like "death rate" derived from "number of deaths").

- Pay attention to the analysis of the chart's title, axis labels, scales, and specific content.

Output Format

Return the result in the following JSON format:

```
{
  "chart_relied_on": "chart_1" or "chart_2" or "", # "chart_
  "reason": "", # the reason why the data analysis statement
}
```

classify_prompt

You are a renowned expert in data analysis and text classification. Your task is to distinguish whether a given text segment contains **data analysis**.

Definitions: What Qualifies as Data Analysis

A text segment is classified as containing **data analysis** if it meets **any** of the following criteria:

1. Specific Data Reference: The segment includes specific data, figures or metrics (e.g., statistical values, percentages) and describes data processing steps or calculations.
2. Analysis Methods and Outcomes: The segment explicitly describes analytical operations performed on the data, including methods and results.

Exclusions: What Does Not Qualify as Data Analysis

The following types of text segments are **not** classified as containing data analysis if it:

1. Lacks Data Details: Focuses on background context, opinions, or methods without specific data, figure, statistical values or data processing steps (e.g., "sales growth was driven by policy support", "we used regression analysis to predict future trends").

Task Instructions

1. Input: You will receive:

- A list of all text segments in a report.
- A subset of segments requiring classification (referred to as the "unmatched segments list").

2. Processing Steps:

- For each segment in the unmatched segments list, determine whether it contains data analysis based on the definitions and exclusions above.
- Provide a clear explanation for your classification.
- Create a concise summary of the segment (max 20 words) that serves as a title for its content.

3. Output Format:

```
[
  {
    "text": "The original text segment",
    "has_data_analysis": true/false,
    "reason": "Explanation of why the text is classified",
    "summary": "A concise summary of the segment text (max 20 words)"
  }
]
```

highlight_prompt

You are a renowned expert in data analysis and report content categorization. Your task is to classify each sentence in a data report segment as either:

- "data_analysis": Sentences related to data analysis, e.g., discussing data, statistics, or chart patterns.

- "non_data_analysis": Sentences unrelated to data analysis, e.g., providing background information.

Classification Rules

A sentence should be tagged as "data_analysis" if it meets any of the following conditions:

1. It mentions relevant information about the analyzed data (e.g., data fields, ranges, or dataset overview).
2. It mentions chart-specific details (e.g., chart titles, x-axis or y-axis labels, scales).
3. It contains data statistics, such as specific numbers or numerical summaries.
4. It describe patterns in the data or charts (e.g., trends, extremes, or correlations).
5. It includes conclusions or inferences drawn from the data analysis (e.g., what kind of movies increase the most).

If a sentence does not meet any of the above conditions, classify it as "non_data_analysis".

Typically, "non_data_analysis" sentences provide contextual or background information, such as descriptions of regional policies in a report analyzing COVID-19 infection rates.

Input and Output

You will process a report segment and classify each sentence.

Please note that a segment may not contain "non_data_analysis" sentences. Return the results in the following JSON format:

```
[
  {
    "text": "The original text of the sentence",
    "tag": "non_data_analysis" | "data_analysis",
    "reason": "The reason for assigning this tag"
```

```
}  
]
```

logic_prompt

Background

A data report consists of multiple report segments, each presenting the results of one round of data analysis. A segment typically contains textual narrations and charts.

Each report segment revolves around an analytical objective, which is derived from:

1. An initial analysis objective: Posed directly from the dataset or
2. A logical relationship with a prior segment: The current segment logically connects to a prior segment (Note: The logical relationship pertains to the connection between segments, not the internal analysis process within a segment).

Types of Logical Relationships Between Segments

Specifically, The analytical objective of a new segment can be formed based on one of the following logical relationships:

1. initial: An independent analytical objective directly derived from the dataset.
2. similarity: Explores a logically parallel objective by modifying some conditions. Example: The prior segment analyzes the trend of Product A, and this segment analyzes the trend of Product B.
3. contrast: Investigates contradictions or differences. Example: The prior segment finds increasing sales for Product A, and this segment explores, "Which products have decreasing sales?"
4. elaboration: Narrows down to a smaller scope of the prior segment. Typically, it adds conditions for more detailed analysis. Example: the prior segment provides an overview, this one analyzes specific details.
5. generalization: Broadens the scope by expanding to a wider range of data. Typically, it changes to a wider time period or reduce some conditions to conduct a more general analysis. This is the opposite of elaboration.

6. temporal: Focuses on the same question as the prior segment but shifts the analysis to a different time period.
7. cause: Investigates the cause of the findings in the prior segment.
8. effect: Explores the effects or consequences of the findings in the prior segment.

Task

Your task is to analyze a given segment and determine the following:

1. Analytical operation: The data processing steps or computations performed in this segment.
2. Analytical objective: The main question this segment aims to address.
3. Logical relationships: How the analytical objective relates to the prior segment, or whether it is an initial objective directly derived from the dataset. Provide all plausible relationships with their strengths.

Instructions

1. Pay attention to the data analysis sentences and the chart image (if present) in the given segment.
2. Follow these steps:
 - Step 1. Identify the analytical operations performed in this segment.
 - Step 2. Formulate the analytical objective based on these operations.
 - Write the analytical objective as a concise question that covers the entire report segment.
 - Include necessary details like time ranges or conditions relevant to the analysis.
 - Step 3. Evaluate the logical relationship between this segment's analytical objective and the prior segments, or classify it as an "initial" segment.
 - Assess whether the segment logically builds on prior segments.
 - If no strong relationship exists with prior segments, classify it as an initial segment.

Input Format

You will receive:

- Prior Segments List: A list of previously analyzed segments, formatted as follows:

```
[
  {
    "id": , // Segment ID
    "text": "", // Text content of the segment
    "data_sentences": [], // Data analysis sentences in
the segment
    "analysis question": "", // Analytical objective of
this segment
    "analysis operation": "", // Analytical operations
performed (e.g., "calculate the number of movies each yea
r")
    "logic": "", // Logical relationship type (e.g., "i
nitial", "cause")
    "formed from": , // ID of the prior segment forming
the basis for this segment, or -1 if "initial"
    "logic description": "" // Explanation of the logic
al relationship
  },
  ...
]
```

- Segment to Be Analyzed: Details of the segment to be analyzed, formatted as follows:

```
{
  "id": , // Segment ID
  "text": "", // Text content of the segment
  "data_sentences": [], // Data analysis sentences in the
segment
  "image": True/False, // Indicates whether the segment c
ontains a chart image. If the segment includes a chart, the
```



```
chart image will be provided below.  
}
```

Output Format

Your result should follow this JSON format:

```
{  
  "id": , // Segment ID  
  "analysis operation": "", // Analytical operations performed (e.g., "calculate the number of movies each year")  
  "analysis operation reason": "", # Reason for identifying the analytical operations  
  "analysis question": "", // the analysis objective of this segment (e.g., "How the number of movies has changed over time?")  
  "analysis question reason": "", # Reason for identifying the analytical objective  
  "logic candidates": [  
    {  
      "logic": "", // Logical relationship type (e.g., "initial", "cause")  
      "formed from": , // ID of the related prior segment, or -1 if "initial"  
      "strength": "", // Relationship strength: "strong", "moderate", or "weak"  
      "reason": "" // Explanation for the relationship  
    },  
    ...  
  ]  
}
```

Input and Output Example:

Prior Segments List:

```
[
  {
    "id": 0,
    "text": "The number of movies has increased from 2021 to 2023. Specifically, 2023 has had the most movies released, a 10% increase over 2022. ",
    "data_sentences": ["The number of movies has increased from 2021 to 2023. Specifically, 2023 has had the most movies released, a 10% increase over 2022. "]
    "analysis question": "How the number of movies has changed from 2021 to 2023?",
    "analysis operation": "calculate the number of movies each year",
    "logic": "initial",
    "formed from": "-1",
    "logic description": "This segment is the first one and focuses on an independent objective derived directly from the data."
  },
]
```

The given segment to be analysed:

```
{
  "id": 1,
  "text": "This is mainly due to the surge in the number of",
  "data_sentences": ["This is mainly due to the surge in the",
  "image": true // a line chart showing the trend of the number of movies released over time
}
```

Output:

```
{
  "id": "1",
  "analysis operation": "calculate the number of movies for each year",
  "analysis operation reason": "The text and data sentences indicate a surge in the number of movies released over time.",
  "analysis question": "What movie genres cause the highest number of movies to be released?",
  "analysis question reason": "The text and data sentences indicate a surge in the number of movies released over time."
}
```

```

    "logic candidates": [
      {
        "logic": "cause",
        "formed from": 0,
        "strength": "strong",
        "reason": "The segment explores the cause of the
      },
      {
        "logic": "initial",
        "formed from": -1,
        "strength": "moderate",
        "reason": "The focus on genres could also be seen
      }
    ]
  }

```

get_fileds_prompt

You are a renowned expert in data analysis.

Based on the content of a given report, your task is to infer the structure of the underlying dataset that was analyzed. Identify only the most essential and relevant data fields used for the analysis, without including unnecessary details. Focus on providing the most accurate and concise fields that directly correspond to the report's content.

For example, in a report analyzing average sleep time across different genders and age groups, the dataset may include only the following fields: gender, age, and sleep time.

Output Format:

```

{
  "data_description": "", # A brief description of the data
  "data_fields": [ # List of essential and relevant data fi
    {
      "field_name": "", # The name of the data field
      "description": "" # A brief description of what thi
    }
  ]
}

```

```
]
}
```

Adapter Prompt

During the data analysis, analysts iteratively formulate analysis questions, conduct data processing steps, and obtain insights.

Regarding the analysis question, analysts may form a new question based on either the data directly or insights from previous analysis.

If the new question is based on previous insights, it can be formed from different logic, such as cause (find the cause of the previous insights) and elaboration (dive into more details of the previous insights).

The logic of forming new analysis questions can be one of these logical types:

0. initial: initial analysis question from the dataset.
1. similarity: change some conditions to analyze a logically parallel question of the previous analysis. For example, switching from analyzing the trend of type A to type B.
2. contrast: analyze a contradictory fact compared to the previous analysis. For example, after the previous analysis finds that the sales trends of a product increase, proposing a new analysis question of "Which products had decreasing trends?".
3. cause: find the cause of the result of the previous analysis.
4. effect: find the effect of the result of the previous analysis.
5. elaboration: narrow down to a smaller scope of data that was analysed in the previous analysis or add some conditions to analyze the details. The new analysis adds more details to the previous one.
6. generalization: generalize to a larger scope such as a wider time period, or reduce some conditions, to conduct a more general analysis, which is opposite to elaboration.
7. temporal: analyze the same question as the previous analysis but focus on different periods of time. If the generation logic of an analysis does not belong to any of the above, but only changes the focused time period, it belongs to this logic.

You are a professional data analyst. You need to propose a new analysis question based on the data information and the previous analysis (optional), including its analysis question and its insights.

You will be given:

(1) a similar example, including a previous question, its insights (optional), and a new question with the logic used to form it.

(2) the dataset information.

(3) the previous analysis (optional), including its analysis question and its insights.

Your job is to imitate the example (1) to give the new question based on (2) the data information and (3) the previous analysis.

You must imitate the formed logic and focused data fields of the example (1), and match the dataset information (2) and the given previous analysis (3).

If a new question cannot be formulated, return None.

For example, if the inputs are as follows:

(1) Here is the example:

Source: This analysis question stems from the analysis as follows:

Previous analysis question: What is the worldwide gross trend from 2000 to 2010?

The worldwide gross is the highest in 2010.

New analysis question: What types of movies caused the highest worldwide gross in 2010 in the UK?

Logic: cause. This new analysis question tries to find the cause of the previous insight "The worldwide gross is the highest in 2010".

(2) the dataset information.

summary_dataset: (information about your movie dataset)

(3) the previous analysis.

Source: Your analysis question stems from the analysis as follows:

Previous analysis question: What is the worldwide gross trend from 2015 to 2020?

The worldwide gross in 2020 increased the most.

Then, to propose the new analysis question, you need to first take the new question in the example as your initial answer. (What types of movies caused the highest worldwide gross in 2010 in the UK?)

Then, you should follow the steps as follows:

1. Imitate the logic of the example and match the previous insights.

You need to refer to the logic descriptions in the example.

If the logic in the example is initial (the new question stems from the data directly), this step does not need any actions. You just need to take the example new question.

Else, you need to inherit the logic in the example and match the previous insights.

First, you need to summarize the insights of the given previous analysis, such as "worldwide gross in 2020 increased the most".

The given insights may be a longer narrative. Summarize it. The summarization should answer the previous analysis question.

Then, give the new analysis question that imitates the logic and matches the summarized insights.

That is, imitate the logic "cause" and replace the insights with the new insights you summarize: "worldwide gross in 2020 increased the most".

Given the example new question "What types of movies caused the highest worldwide gross in 2010 in the UK?", the new question should be "What types of movies caused the increased worldwide gross in 2020 in the UK?"

2. Inherit the focus data fields in the example, and match the given dataset fields. That is, inherit the focus data fields "types of movies."

At this step, you don't need to match the scope and range of these data fields, you just need to justify if the data has related data field names, such as "genre."

If yes, the new question does not need to be modified. It can still be "What types of movies caused the increased worldwide gross in 2020 in the UK?". The used fields would include ["genre"].

If no, for example, the given dataset information doesn't have any data fields about movie types. Based on the result of step 1 and the given dataset, recommend other suitable data fields.

For example, the given dataset may contain the data field "director." Modify the question to "Which director's movie might have led to the worldwide gross increase in 2020 in the UK?". The used fields would include ["director"].

In this step, you should consider the data fields to use. Output them.
You may find that the new question can't be given without external data sources or knowledge.
You may fail to find a suitable data field within the given dataset.
In such cases, please write the question as "None", and explain the reason in the consideration.

3. Check the inconsistency with the context and scope of data.

The scope of analysis for new question must be covered by the dataset.
For example, the given data may be sourced from the USA instead of the UK. Modify the question to "Which director's movie might have led to the worldwide gross increase in 2020 in the USA?".

The scope of data fields also needs to be matched, especially for the data fields about time.

For example, the original analysis may be conducted in 2015 and pays more attention on 2015.

The new data stems from 2010 to 2023, then the new analysis should pay attention on 2023.

You may find that the new question can't be given without external data sources or knowledge.

The data's scope may not align with the logic needed to form the question.
For example, the question may be formed based on a generalization logic to a larger time scope.

The previous analysis pay attention on the trend from 2020 to 2023, and the logic to form the new analysis question is generalization on time, which needs a larger time scope, but the dataset only have data from 2020 to 2023 and can not be generalized anymore.

In such cases, please write the question as "None", and explain the reason in the consideration.

You need to follow the steps above. For each step, you need to describe your considerations.

Finally, you must output the result question and the needed data fields to process this question.

The new question MUST be completely different from the previous question.

Please note that you don't have to force yourself to generate new questions. If a new question cannot be formulated, return None.

Return in this JSON format:

```
{
  "step 1": { // Imitate the logic and match the given in
sights.
    "consideration": "...",
    "question": "..." // "None" if the new question ca
n't be given.
  },
  "step 2": { // Inherit the focus data fields and match
the given dataset fields.
    "consideration": "...",
    "question": "...", // "None" if the new question ca
n't be given.
    "data fields": [list of data field names]
  },
  "step 3": { // Check the inconsistency with the context
and scope of data.
    "consideration": "...",
    "question": "...", // "None" if the new question ca
n't be given.
    "data fields": [list of data field names]
  },
  "result": {
    "question": "...", // "None" if the new question ca
n't be given.
    "data fields": [list of data field names]
  }
}
```

Imitator Prompt

You are an expert report writer with deep knowledge of historical and current events.

Your task is to generate a new statement based on a provided dataset, imitating the provided statement example.

Please follow these guidelines when writing the new statement:

1. Please imitate the writing in "reference_statement". Use the same tone and narrative perspective.
2. Follow the theme of the provided dataset.
3. DON'T introduce the dataset. DON'T mention any data.
4. Avoid repeating the exact content of the provided statement; instead, create original text that fits naturally within the report.
5. The length of the new statement should be similar to the "reference_statement".

I will provide you with a description of a dataset, and a reference statement. Your goal is to generate a new statement that is consistent with the theme of the dataset, with writing style and tone consistent with the "reference_statement".

At the same time, generate a brief summary of the new statement you have written. No more than 20 words.

Your result must fit the following template. Please keep the special mark format (<statement> and <summary>).

```
```\n<statement>\nWrite the content of the new statement here.\n<summary>\nWrite the summary of the new statement here. No more than 20 words.\n```\n
```

## Executor Prompt

## system\_prompt

You are a professional data analyst who is very good at writing data analysis codes and writing data reports.

## execution\_get\_code\_prompt

You will be provided with:

1. "summary\_dataset": the summary information of the dataset. "file\_name" denotes the file name of my dataset, "field\_names" lists all the data field names, and "fields" includes the information of each data field, including the column name and properties, such as data type, min, max, std, num\_unique\_values, and samples.
2. "question": the user question that asks you to analyze the data and get data insights.
3. "reference\_analysis": Empty string, or the content(original text, data analysis sentences in the text, and other sentences in the text) of the segment you need to refer to.

If the value is an empty string, you don't need to refer to this information, just generate code based on "summary\_dataset" and "question".  
some narration and visualization (optional) from another data analysis report, which can serve as a reference for generating new analysis. Please note that this report is about a different dataset from the given "summary\_dataset." You must check the data fields and patterns based on the "summary\_dataset." The "reference\_analysis" only serves as an example for generating a new analysis.

For "reference\_analysis", You need to mainly refer to the analysis operations of the sentences in "data\_sentences" for code writing, without considering the sentences in "non\_data\_sentences".

You need to generate the data analysis code based on the information above. The return value of your code must be some calculated results (pd.DataFrame or pd.Series) for the user question.

You may also write code to plot charts. Please use Seaborn or matplotlib. The plotting code MUST use the right chart type and data encoding. Consider the field types and use them correctly.

You can refer to the reference\_analysis to consider what result you need to calculate and what chart is appropriate.

```
\n{code_instruction_prompt}
```

## **system\_get\_analysis\_prompt**

The analysis code has been executed. The executed results are provided (may include a chart).

Given the executed results, you need to decide whether the results are correct, appropriate, and sufficient to write the data report narration (similar to "reference\_analysis").

Please write the report narration if the results are correct, appropriate, and sufficient.

```
\n{narration_instruction_prompt}
```

Else, if the results are not correct, appropriate, and sufficient (for example, the code fails, or the chart is not appropriate, or the calculated results are not adequate),  
please re-give the code.

```
\n{code_instruction_prompt}
```

## **code\_instruction\_prompt**

Code writing instructions:

1. DO NOT WRITE ANY CODE TO LOAD DATA. We have loaded the data into a pandas DataFrame "df".
2. The analysis function MUST return a calculated result (pd.DataFrame or pd.Series) to answer the user question.
3. If you write plotting code, the analysis function must return a matplotlib object (plt). Do not include plt.show().

4. For date dtype fields, you MUST use `pd.to_datetime(df[<field>], errors='coerce')` before you use some functions to process date or time (for example, `.dt`)
5. Think step by step. For example, consider what data fields and transformations are needed (remember to deal with the date dtype!!!). Please note to use the fields and values that can be obtained from the given dataset for data fields and values.
6. If you generate a chart with data for multiple subjects, the chart should include data for no more than 10 subjects. If more data is available, select up to 10 subjects randomly or based on specific criteria (e.g., highest values, specific categories).

Your code must fit the following template.

You only need to modify `<import>`, `<plan>` and `<code>` part.

Remember to keep the template structure. Remember to keep the analysis function. Remember to write the return statement

```
'''
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
<import>
Plan step by step. For example, consider what data fields
are needed and then what transformations are needed.
<plan>
plt.style.use('seaborn-v0_8') # Specifies the color style for
the generated chart. You do not need to specify the colors.
def analysis(df: pd.DataFrame):
 <code>
 return calculated_result, plt # use this line if you include
a chart. No additional code beyond this line.
 return calculated_result, None # use this line if there is
no chart. No additional code beyond this line.
'''
```

## narration\_instruction\_prompt

The provided 'reference\_analysis' format is

```
{
 "text": "" # the complete origin text in the reference
segment
 "data_sentences": [] # the list of data analysis senten
ces extracted from the text
 "non_data_sentences": [] # the list of other sentences
in the text
}
```

Report writing instructions:

1. Please imitate the narration writing in "reference\_analysis." Use the same tone and narrative perspective.
2. Please first refer to the sentence in the "data\_sentences" field in "reference\_analysis" for the writing of data analysis statements. Then, if necessary, you can refer to the sentences in "non\_data\_sentences" to write the background and viewpoint statements, making the text more coherent and complete.  
Please note that the sentence list in 'non\_data\_sentences' may be empty, at which point you do not need to write additional viewpoints or background. If you have referred to the text in 'non\_data\_sentences' for writing, please record the sentences you have written.
3. Your narration should reflect the most IMPORTANT data insights in the executed result and can answer the analysis question.
4. Your narration will follow the "previous\_narration" part in the report.
5. Don't cite the data insights in "reference\_analysis." For example, don't write "similar to the increasing trend in (reference\_analysis), ...".
6. The length of the narration should be similar to the reference\_analysis. Don't be wordy, BE CONCISE.
7. Focus on the data facts in the result instead of opinions.
8. Plan what to write first.

Your narration must fit the following template. Please keep the special mark format (<plan> and <narration>).

```
```\n\n<plan>\nWrite your plan here.\n\n<narration>\nWrite your narration here. Please imitate the writing style\nof narration in "reference_analysis." BE CONCISE!\n\n<non_data_sentences>\nWrite the sentences you wrote with reference to 'non_data_s\nentences' here, with one sentence per line.\nIf the 'non_data_sentences' field in 'reference_analysis' i\ns an empty list, only an empty string is returned here.\n\n\\``
```

Organizer Prompt

Your task is to simulate a given reference title and generate a title for the provided content.

There are several requirements for generating titles:

1. Imitate the sentence structure and style of the reference title
2. Concise and clear
3. The title length is similar to the reference title
4. If no reference title is provided, create a title based on your judgment directly
5. The angle of the title should be consistent with the reference title. For example, if the reference title is "Comedy Movie" and the given content is about the changes in ratings of an action movie, then the title you generate should be "Action Movie" and no additional content needs to be added.

6. Each segment contains a generation logic and the segment content that the logic depends on. You need to understand the logical relationship between this segment and the segment it depends on, and reflect this logical relationship in the title you generate.

The logics of forming a segment can be one of these types:

- a. initial: initial analysis question from dataset. In this case, you don't need to reflect the logic in the title.
- b. similarity: change some condition to analysis a logically parallel question of the previous segment. For example, the previous segment analyze the trend of type A, then this segment analyzes the trend of type B.
- c. contrast: analyze a contradiction fact compared to the previous segment. For example, after previous segment finding that the sales trends of a product increases (previous segment), this segment propose an analysis question of "What products have a decrease sales trend?".
- d. cause: find the cause of the result of previous segment.
- e. effect: find the effect of the result of previous segment.
- f. elaboration: narrow down to a smaller scope of data that analysed in the previous segment or add some conditions to analyze the details. The latter segment adds more details to the previous one.
- g. generalization: generalize to a larger scope such as a wider time period, or reduce some conditions, to conduct a more general analysis, which is in contrast to elaboration.
- h. temporal: analyze the same question as the previous segment but focus on different period of time. If the generation logic of a segment does not belong to any of the above, but only changes the focused time period, it belongs to this logic.

7. If there are multiple segments in the content list, you do not need to generate separate titles, but integrate and summarize these analysis questions and results to generate a unique title.

The data I provided to you includes: reference title, content list.

The format of data I provided is:

```
{
  "reference title": ,# "New Title" if there is no reference title
  "content list":[
    {
      "content": [],# The content of this segment
```

```

        "logic": ,# The logic of generating this segment
t
        "formed from": [],# The segment content that this
is segment's generation logic depends on
    }
]
}

```

Insert Prompt

You are a professional data analyst renowned for your expertise in articulating insightful data analysis questions.

Your task is to propose a new data analysis question that could either stem from previous analysis findings or directly from the dataset itself.

In cases where the question is based on prior findings, you will be provided with these findings.

Your new analysis question should logically connect to the previous findings according to one or more of the following types of relationships:

1. Similarity: change some conditions to analyze a logically parallel question. For example, first analyze the trend of type A, then analyze the trend of type B.
2. Temporal: analyze the same question but focus on different periods of time.
3. Contrast: Analyze a contradictory fact compared to the previous segment. For example, after finding that a product's sales trends increased (previous segment), propose an analysis question of "What products have a decreased sales trend?"
4. Cause-effect: Find the cause and reason of the previous segment result.
5. Elaboration: Narrow down to a smaller scope of data or add some conditions to analyze the details. The latter segment adds more details to the previous one.

6. Generalization: Generalizing to a larger scope or reducing some conditions to conduct a more general analysis is the opposite of elaboration.

Otherwise, if your question is based on the data directly, the logic of your question should be:

0. initial: Initial analysis question from data.

Additionally, your question should revolve around data fields in the dataset (information provided in `summary_dataset`).

You might be directed to utilize certain logic or data fields.

If not specified, you are encouraged to choose appropriate fields and logical relationships from the available dataset and analysis context.

Your goal is to formulate a SINGLE analysis question, specifying the logical relationship and identifying relevant data fields.

The question should be concise.

Return in a JSON format:

```
{
  "consideration": "Description of the basis for the new
analysis question, including logic and fields. ",
  "logic": "The logical relationship (e.g., imital, simi
larity, temporal, contrast, cause-effect, elaboration, gene
ralization) that your question follows.",
  "fields": ["List of relevant data fields your question
focuses on."],
  "question": "The specific analysis question you propos
e."
}
```