**Streamlit App for System Ticket Data Summary**

**Overview**

This task involves creating a Streamlit application to process and summarize system ticket data for a specific customer. The ticket data is provided in a text file, which will be converted to a CSV or Excel format. The application will preprocess the data, generate detailed summaries for various ticket categories, and present them in a storytelling format.

**App Overview**

A Streamlit web app that allows users to:

* Upload raw ticket data (text files).
* Automatically preprocess and clean the data.
* Generate AI-powered summaries in a structured "storytelling" format.
* Visualize trends and patterns in the tickets for better decision-making. (Bouns)

**Pre-Processing**

1. **Text File Conversion**: Convert the provided text file containing ticket data into a CSV or Excel format to facilitate further processing.

2. **Data Cleaning**: The app will preprocess the data by filtering out tickets that do not belong to the predefined categories: `['HDW', 'NET', 'KAI', 'KAV', 'GIGA', 'VOD', 'KAD']`. Only tickets within these categories will be considered for further analysis.

**Category Product Mapping**

The ticket categories will be mapped to specific products as follows:

- **Broadband**: KAI, NET

- **Voice**: KAV

- **TV**: KAD

- **GIGA**: GIGA

- **VOD**: VOD

**Storytelling Detailed Summary Instructions**

Note “You Must Use LLM for Summarization”

For each category, the summary will be divided into five distinct sections:

1. **Initial** **Issue**:

- **Timeframe**: Identify the period when the initial issues began.

- **Ticket** **Numbers**: List the relevant ticket numbers.

- **Narrative**: Describe the customer's initial problems, including the nature of the issues, the customer's feedback, and any immediate actions taken.

2. **Follow**-**ups**:

- **Timeframe**: Document the period of follow-up activities.

- **Ticket** **Numbers**: List the related ticket numbers.

- **Narrative**: Detail the follow-up actions, including further customer interactions, additional feedback, and any responses from the support team.

3. **Developments**:

- **Timeframe**: Specify the period during which significant developments occurred.

- **Ticket** **Numbers**: List the relevant ticket numbers.

- **Narrative**: Explain the developments, such as new issues arising, advancements in resolving existing problems, and any changes in customer experiences.

4. **Later** **Incidents**:

- **Timeframe**: Note the timeframe for later incidents.

- **Ticket** **Numbers**: List the related ticket numbers.

- **Narrative**: Describe recurring issues or new problems that emerged, including how they were handled and the customer's ongoing feedback.

5. **Recent** **Events**:

- **Timeframe**: Highlight the most recent period.

- **Ticket** **Numbers**: List the relevant ticket numbers.

- **Narrative**: Provide a summary of the latest events, including current issues, recent resolutions, and the customer's final feedback.

**Additional Task: Documentation**

As part of this task, you will also create comprehensive documentation detailing each step of the process:

1. **Implementation** **Steps**: Document each step of the implementation process, including:

- Data preprocessing

- Category mapping

- Summary generation

2. **Code** **Documentation**: Annotate the code to explain its functionality and purpose.

3. **User** **Guide**: Provide instructions on how to use the Streamlit app

**Bonus Task:**

Create an effective analysis from the dataset that can provide valuable insights for the business. This analysis should identify trends and patterns in the ticket data that could help improve customer service and operational efficiency.