Backend Development Exercise: Sales Team Per formance Analysis Using LLM

Objective

Develop a backend system that uses a Large Language Model (LLM) to analyze unit price data and provide feedback on both individual units representatives and overall team buildings as well as price changes.

Task Description

Data Ingestion

- Implement a flexible mechanism to ingest sales data (format: CSV or JSON).

LLM Integration

- Integrate a Large Language Model (like GPT) for data analysis. • The system should process data and generate insights for both individual representatives and the sales team as a whole.

API Development

Develop multiple RESTful API endpoints:

- An endpoint to query performance feedback for a specific sales represen tative.
- An endpoint to assess overall team performance.
- An endpoint for sales performance trends and forecasting.

Each endpoint should accept relevant parameters and return LLM-generated insights.

Feedback Generation

- Leverage the LLM to provide qualitative feedback and actionable insights based on the sales data.

Technology Choice

- You are free to use any backend technologies and frameworks you prefer. • The API endpoints should be tested using API testing tools like Postman or Insomnia.
- You can use any LLM of your choice. We recommend using GPT • It's not necessary to deploy the system to a cloud platform. You can run it locally and share the code repository with us as long as it's well documented and easy to run.

Submission Guidelines

Code Repository

• Use a public repository on GitHub or similar for your project. • Include all necessary source code and files.

Readme File

• Your repository should contain a README.md file with: **–** Setup and run instructions.
– An overview of the architecture and technologies used.

Sharing Your Work

• Reply to the email you received with a link to your repository.

Deadline

• Submit your work by 2nd December, 1 PM CT.
• It's ideal to submit your work within this time frame, but we understand that you may have other commitments. If you need more time, please let us know.

API Examples

1. **Best Priced Unit**

   • **Endpoint:** /api/top_unit
   • **Method:** GET
   • **Parameters:** unit_id (unique identifier for the sales representative) • **Function:** Returns detailed performance analysis and feedback for the specified sales representative.

2. **Best Historical Units**

   • **Endpoint:** /api/unit_price_history
   • **Method:** GET
   • **Function:** Finds the units of the type you are describing with the biggest price changes downwards

3. **Best Building Deals**

   • **Endpoint:** /api/building_deals
   • **Method:** GET
   • **Function:** Find the buildings that are the best deals in a particular neighrbohood or type

Feel free to reach out for any clarifications or questions. We are excited to

see your innovative approaches to this challenge.