



## Trade Opportunities API - Developer Task

### Project Overview

Build a FastAPI service that analyzes market data and provides trade opportunity insights for specific sectors in India.

### Core Requirement

Create **one main endpoint** that accepts a sector name (e.g., "pharmaceuticals", "technology", "agriculture") and returns a structured market analysis report with current trade opportunities.

### Technical Requirements

#### Backend Framework

- **FastAPI**
- Session management
- Rate limiting
- Security best practices
- Input validation

#### AI/Data Sources

- **LLM:** Google Gemini API for analysis (can make a free account and can use it) / any other model of your choice
- **Web Search:** Various APIs available (DuckDuckGo, etc.)
- **Data Collection:** Manual scraping or through scrapping API requests etc

#### Storage

- In-memory storage only (no database required)

#### Security

- Authentication (simple auth/JWT/guest auth - your choice)
- Input validation
- Rate limiting implementation

#### API Specification

## **Single Endpoint**

GET /analyze/{sector}

## **Sample Request**

GET /analyze/pharmaceuticals

## **Expected Response Format**

The API should return a structured markdown report that can be saved as a .md file.

## **Implementation Expectations**

### **Core Workflow**

1. Accept sector name as input
2. Search for current market data/news for that sector
3. Use Gemini API to analyze collected information
4. Generate a structured markdown report
5. Apply rate limiting and security measures

### **System Architecture**

- Clean separation between data collection, AI analysis, and API layers
- Proper error handling for external API failures
- Session tracking for API usage
- Rate limiting per user/session

### **Evaluation Criteria**

- **FastAPI Implementation:** Proper async handling, error responses, documentation
- **AI Integration:** Effective use of Gemini API for analysis
- **Data Collection:** Ability to gather relevant market information
- **Security:** Authentication, input validation, rate limiting
- **Code Quality:** Organization, error handling, logging

### **Deliverables**

1. Working FastAPI application
2. Single endpoint that produces markdown market analysis reports
3. Security features implemented
4. API documentation
5. README with setup instructions

## **Time Allocation**

**0-1 day** maximum

## **Success Criteria**

- API accepts sector names and returns markdown analysis reports
- Reports contain relevant, current market information
- Security measures prevent abuse
- System handles errors gracefully
- Code is clean and well-organized

All the Best!!!

HR Team