

# GEMINI PRO FINANCIAL DECODER

## SmartBridge Virtual Internship Project

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### Team Details

**Team ID:** LTVIP2026TMIDS61777

**Team Size:** 5

**Team Leader:**

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## 1. INTRODUCTION

### 1.1 Project Overview

This project, titled “Gemini Pro Financial Decoder,” is developed as part of the SmartBridge Virtual Internship Program. The objective of this project is to analyze financial datasets and generate structured financial insights using Artificial Intelligence and Generative AI technology.

In today’s data-driven business environment, financial analysts and business owners often work with complex spreadsheets and financial statements. Manual analysis is time-consuming and requires expertise. This project provides an intelligent solution that enables users to upload financial data and automatically generate meaningful insights.

The system accepts financial datasets in CSV or Excel format. The data is processed and sent to Google’s Gemini Generative AI model,

which generates structured financial summaries. The application demonstrates the real-world use of Artificial Intelligence in financial analytics and decision-making.

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## 1.2 Purpose

The main purpose of this project is to apply theoretical knowledge of Artificial Intelligence, Data Analysis, and Python programming to build a practical real-world financial analysis application.

This project helps in understanding:

- API integration
- Web application development
- Financial data processing
- Prompt engineering
- AI model interaction

It also enhances technical, analytical, and problem-solving skills.

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## 2. IDEATION PHASE

### 2.1 Problem Statement

Many business owners, financial analysts, startup founders, and journalists need quick and structured insights from financial data. Reviewing financial spreadsheets manually requires significant time and expertise.

There is a need for a system that:

- Analyzes financial data automatically
- Generates structured financial insights
- Provides visual dashboards
- Is easy to use

This project solves the problem using Generative AI.

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## 2.2 Empathy Map Canvas

### What the User Thinks

- I need quick financial insights
- I want clear and structured analysis
- I do not want to manually calculate everything

### What the User Feels

- Overwhelmed by complex spreadsheets
- Stressed before meetings or deadlines
- Confident when insights are clear

### What the User Says

- “I need a summary of this financial report.”
- “This data is too complex to understand quickly.”

### What the User Does

- Reviews spreadsheets
- Uses Excel for calculations
- Searches for financial interpretation

### User Pain Points

- Time-consuming manual analysis
- Complex financial terminology
- Risk of calculation errors

### User Needs

- Fast AI-generated insights
- Clear dashboard view
- Easy-to-use system

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## 2.3 Brainstorming

Different approaches were considered:

- Manual financial dashboard using Excel
- Static financial report system
- AI-based financial insight generator

AI-based financial analysis was selected because it provides scalability, automation, and intelligent interpretation of financial data.

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## 3. REQUIREMENT ANALYSIS

### 3.1 Customer Journey Map

User workflow:

1. User opens the application
  2. User uploads financial dataset
  3. System processes data
  4. AI generates financial insights
  5. Dashboard metrics calculated
  6. Charts and insights displayed
- 

### 3.2 Solution Requirements

Functional Requirements

- Accept CSV and Excel financial files
- Process and validate financial data
- Generate AI-based financial insights

- Calculate dashboard metrics
- Display charts and summaries

#### Non-Functional Requirements

- Easy to use
  - Fast response
  - Reliable performance
  - Secure API handling
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### 3.3 Data Flow Diagram

User → Streamlit UI → Data Processing → Gemini API → Financial Insights → Dashboard Display

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### 3.4 Technology Stack

Programming Language:

- Python

Framework:

- Streamlit

Libraries:

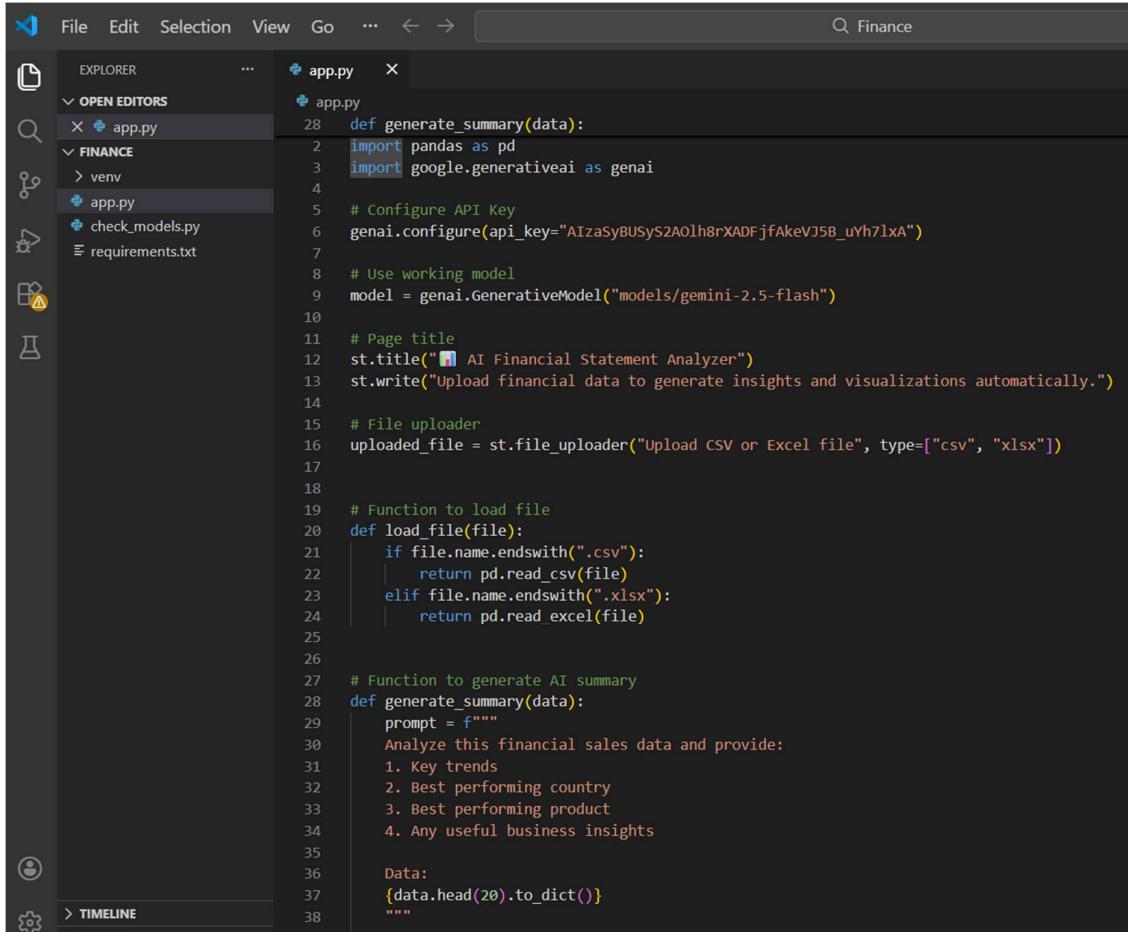
- Google Generative AI SDK
- Pandas
- Python-dotenv

Tools:

- VS Code
- GitHub

Platform:

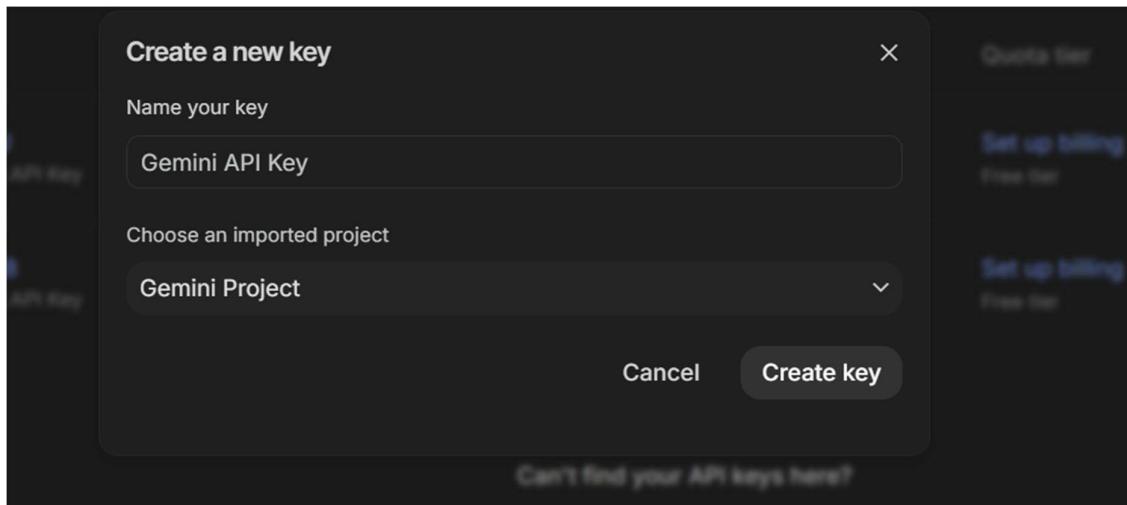
- Windows OS



```

File Edit Selection View Go ... < > Q Finance
EXPLORER app.py
OPEN EDITORS app.py
FINANCE venv
app.py check_models.py requirements.txt
  A
  Timeline
app.py
  1 #!/usr/bin/env python3
  2 import pandas as pd
  3 import google.generativeai as genai
  4
  5 # Configure API Key
  6 genai.configure(api_key="AIzaSyBUSyS2A0lh8rXADFjfAkeVJ5B_uYh7lx")
  7
  8 # Use working model
  9 model = genai.GenerativeModel("models/gemini-2.5-flash")
 10
 11 # Page title
 12 st.title("AI Financial Statement Analyzer")
 13 st.write("Upload financial data to generate insights and visualizations automatically.")
 14
 15 # File uploader
 16 uploaded_file = st.file_uploader("Upload CSV or Excel file", type=["csv", "xlsx"])
 17
 18
 19 # Function to load file
 20 def load_file(file):
 21     if file.name.endswith(".csv"):
 22         return pd.read_csv(file)
 23     elif file.name.endswith(".xlsx"):
 24         return pd.read_excel(file)
 25
 26
 27 # Function to generate AI summary
 28 def generate_summary(data):
 29     prompt = f"""
 30     Analyze this financial sales data and provide:
 31     1. Key trends
 32     2. Best performing country
 33     3. Best performing product
 34     4. Any useful business insights
 35
 36     Data:
 37     {data.head(20).to_dict()}
 38 """

```



## 4. PROJECT DESIGN

### 4.1 Problem–Solution Fit

The problem identified is the difficulty of interpreting financial data quickly and accurately.

The proposed AI-based solution automates financial data analysis and generates structured insights efficiently, reducing manual effort.

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### 4.2 Proposed Solution

The system works as follows:

- User uploads financial dataset
  - Data is processed using Pandas
  - Structured prompt sent to Gemini
  - AI generates financial insights
  - Dashboard metrics calculated
  - Charts and summary displayed
- 

### 4.3 Solution Architecture

Components:

- User Interface (Streamlit)
  - Data Processing Module (Pandas)
  - API Integration Layer
  - Gemini AI Model
  - Dashboard and Visualization Module
-

Streamlit

localhost:8501

## AI Financial Statement Analyzer

Upload financial data to generate insights and visualizations automatically.

Upload CSV or Excel file

Drag and drop file here  
Limit 200MB per file • CSV, XLSX

Browse files

Please upload a file to begin.

## AI Financial Statement Analyzer

Upload financial data to generate insights and visualizations automatically.

Upload CSV or Excel file

Drag and drop file here  
Limit 200MB per file • CSV, XLSX

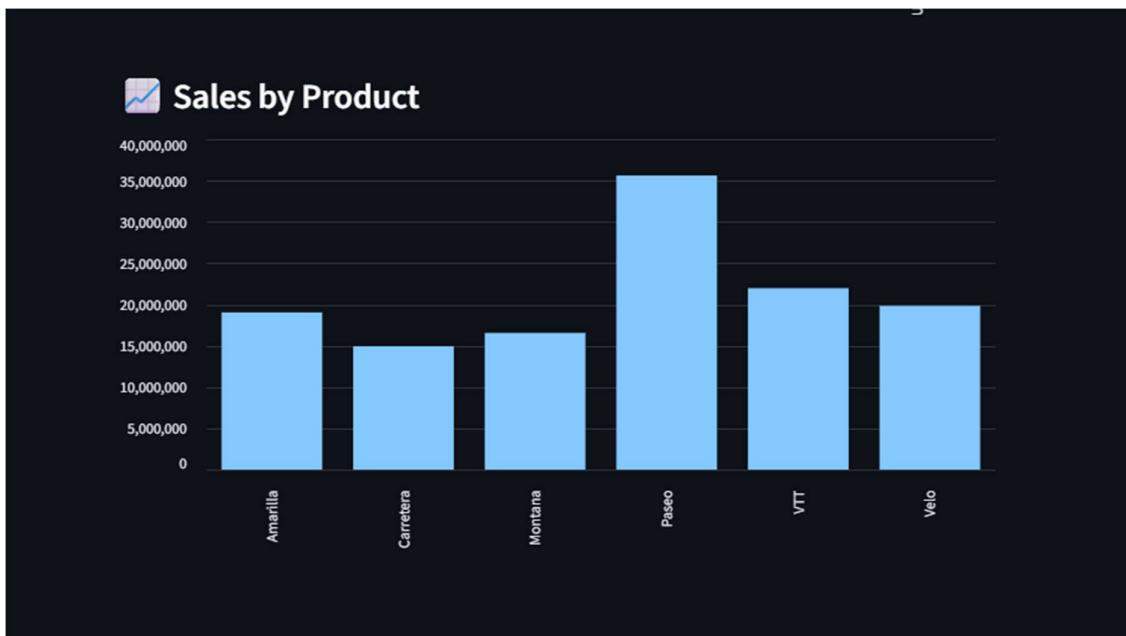
Browse files

Financial Sample.xlsx 81.8KB

X

### Uploaded Data

	Segment	Country	Product	Discount Band	Units Sold	Manufacturing Price	Sale Price
6	Midmarket	Germany	Montana	None	921	5	15
7	Channel Partners	Canada	Montana	None	2518	5	12
8	Government	France	Montana	None	1899	5	20
9	Channel Partners	Germany	Montana	None	1545	5	12
10	Midmarket	Mexico	Montana	None	2470	5	15
11	Enterprise	Canada	Montana	None	2665.5	5	125
12	Small Business	Mexico	Montana	None	958	5	300
13	Government	Germany	Montana	None	2146	5	7
14	Enterprise	Canada	Montana	None	345	5	125
15	Midmarket	United States	Montana	None	615	5	15



## 5. PROJECT PLANNING AND SCHEDULING

### Project Phases

1. Requirement Analysis
2. System Design
3. Development
4. Testing
5. Documentation

### Schedule

Phase 1 Requirement Analysis – 3 Days

Phase 2 Design – 3 Days

Phase 3 Development – 7 Days

Phase 4 Testing – 4 Days

Phase 5 Documentation – 3 Days

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## 6. FUNCTIONAL AND PERFORMANCE TESTING

### 6.1 Functional Testing

- Verified file upload
- Verified data processing
- Verified AI integration
- Verified dashboard metrics
- Verified chart generation

### 6.2 Performance Testing

- Checked AI response time
- Tested multiple requests
- Verified application stability

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## 7. RESULTS

The application successfully:

- Accepts financial datasets
  - Processes data accurately
  - Generates AI-based financial summaries
  - Displays dashboard metrics
  - Shows visual charts
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### 7.2 Output Screenshots

Insert screenshots here:

Figure 1: Main Interface of the Application

Figure 2: Sample Financial Dataset

Figure 3: AI Generated Financial Insights

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## 8. ADVANTAGES AND DISADVANTAGES

### Advantages

- Easy to use
- Fast financial analysis
- AI-powered insights
- Interactive dashboard

### Disadvantages

- Requires internet connection
  - API usage limitations
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## 9. CONCLUSION

This project demonstrates the integration of Generative AI with financial data analysis. The system successfully transforms complex financial data into structured insights and visual dashboards, providing a practical and intelligent solution for decision-making support.

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## 10. FUTURE SCOPE

- Multi-year financial comparison
  - Financial ratio analysis
  - PDF report generation
  - Cloud deployment
  - Enterprise-level dashboard
- 

## 11. APPENDIX

### 11.1 Security Implementation

- API key stored in .env file
  - API key not hardcoded
  - .env file ignored in GitHub
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### 11.2 Project Demo

Demo Video:  
(Insert Drive link here)

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### 11.3 References

- Google Gemini API Documentation
- Streamlit Documentation
- Pandas Documentation
- Python Documentation