

GEMINI PRO FINANCIAL DECODER

SmartBridge Virtual Internship Project

Team Details

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Team Size: 5

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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.

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.

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.

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

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.

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
-

3.3 Data Flow Diagram

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

3.4 Technology Stack

Programming Language:

- Python

Framework:

- Streamlit

Libraries:

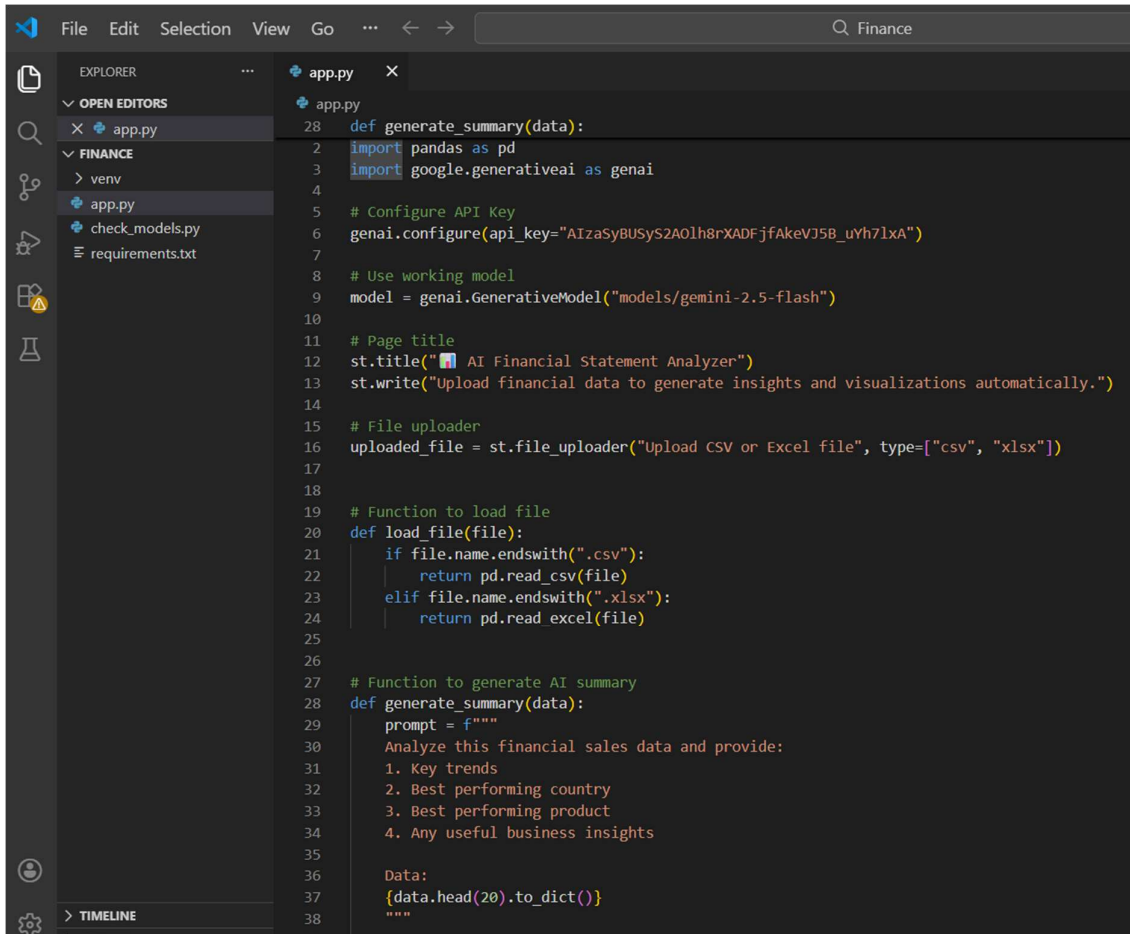
- Google Generative AI SDK
- Pandas
- Python-dotenv

Tools:

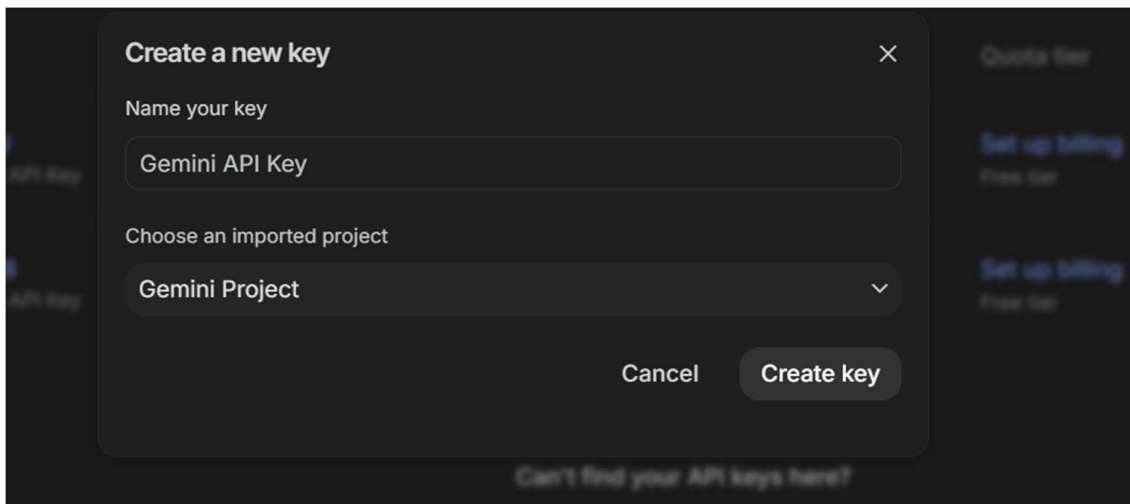
- VS Code
- GitHub

Platform:

- Windows OS



```
28 def generate_summary(data):
29     import pandas as pd
30     import google.generativeai as genai
31
32     # Configure API Key
33     genai.configure(api_key="AIzaSyBUSyS2A0lh8rXADfjFAkeVJ5B_uYh7lxA")
34
35     # Use working model
36     model = genai.GenerativeModel("models/gemini-2.5-flash")
37
38     # Page title
39     st.title("📊 AI Financial Statement Analyzer")
40     st.write("Upload financial data to generate insights and visualizations automatically.")
41
42     # File uploader
43     uploaded_file = st.file_uploader("Upload CSV or Excel file", type=["csv", "xlsx"])
44
45     # Function to load file
46     def load_file(file):
47         if file.name.endswith(".csv"):
48             return pd.read_csv(file)
49         elif file.name.endswith(".xlsx"):
50             return pd.read_excel(file)
51
52     # Function to generate AI summary
53     def generate_summary(data):
54         prompt = f"""
55         Analyze this financial sales data and provide:
56         1. Key trends
57         2. Best performing country
58         3. Best performing product
59         4. Any useful business insights
60
61         Data:
62         {data.head(20).to_dict()}
63         """
```



Create a new key [X]

Name your key

Choose an imported project

Cancel Create key

Can't find your API keys here?

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.

4.2 Proposed Solution

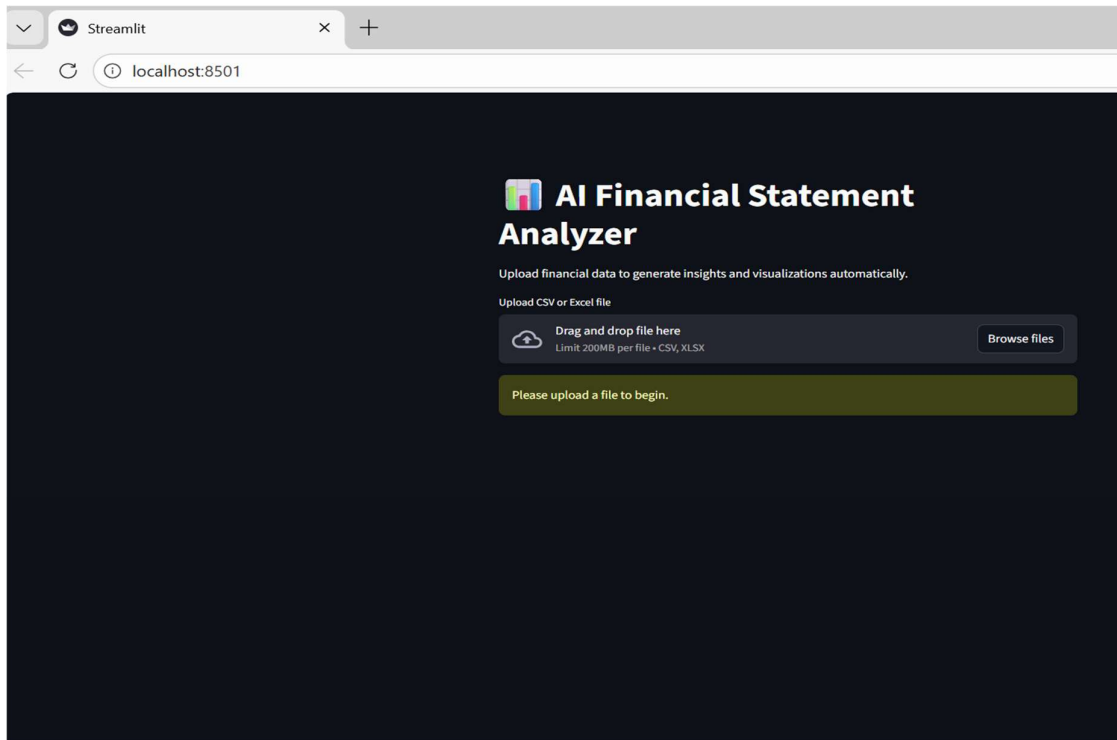
The system works as follows:


- 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
-







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 ×

 **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 Sta	Montana	None	615	5	15

Key Insights

Total Sales

127931598.5

Units Sold

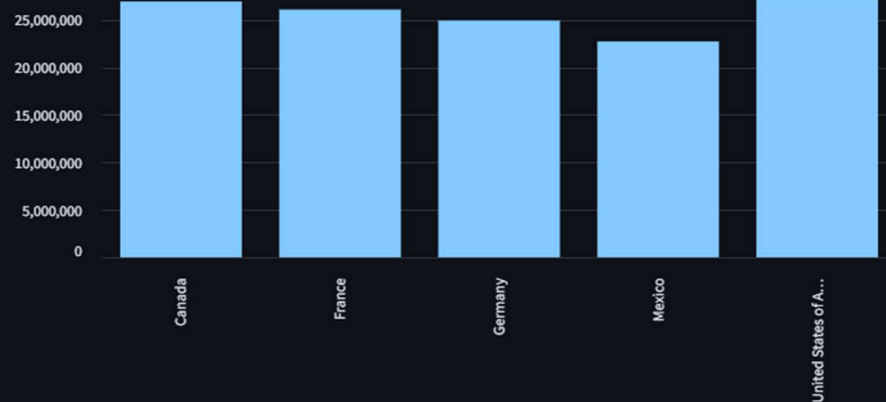
1125806.0

Average Price

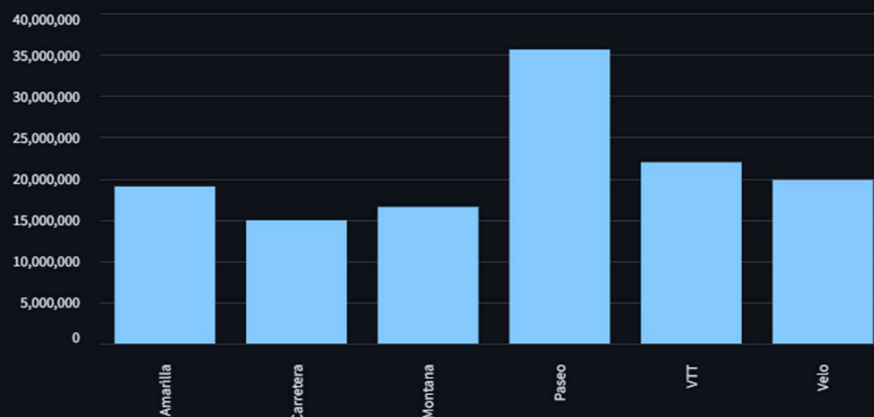
118.43

[Generate AI Insights](#)

Sales by Country



Sales by Product



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

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

7. RESULTS

The application successfully:

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

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

8. ADVANTAGES AND DISADVANTAGES

Advantages

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

Disadvantages

- Requires internet connection
 - API usage limitations
-

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.

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
-

11.2 Project Demo

Demo Video:

(Insert Drive link here)

11.3 References

- [Google Gemini API Documentation](#)
- [Streamlit Documentation](#)
- [Pandas Documentation](#)
- [Python Documentation](#)