

# Financial Health Assessment Tool

**Code Red:**

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# Problem Description

Create a comprehensive financial health assessment platform for small and medium enterprises (SMEs) that uses AI to analyze financial statements, cash flow patterns, and business metrics to provide actionable insights and recommendations. The system should evaluate creditworthiness, identify financial risks, suggest cost optimization strategies, and recommend suitable financial products from banks and NBFCs. Advanced features include automated bookkeeping assistance, tax compliance checking, financial forecasting, working capital optimization, and integration with GST returns and banking APIs. The platform must handle multiple business types, provide industry-specific benchmarking, generate investor-ready financial reports, and offer multilingual support for regional business owners. The solution must maintain high security standards, ensure regulatory compliance, and provide clear visualization of financial metrics for non-finance business owners.

# Proposed Solution

We propose an AI-powered web platform designed specifically for Small and Medium Enterprises (SMEs) to instantly assess their financial health and make informed business decisions.

- Provides a simple web interface for non-finance users
- Allows SMEs to upload financial data in CSV format
- Automatically analyzes key financial metrics such as profit, cash flow, debt ratio, and credit score
- Generates AI-driven insights and recommendations for cost optimization, risk awareness, and credit readiness
- Securely stores analysis results in PostgreSQL for future reference and tracking

# Architecture & Tech Stack

## ✓ Backend

- FastAPI – secure C fast APIs
- PostgreSQL – structured financial storage
- SQLAlchemy – ORM
- Pandas – financial data analysis
- JWT – authentication
- Fernet Encryption – data security

## ✓ Frontend

- React.js
- React Router
- Axios
- Chart.js
- React Markdown

## ✓ AI

- OpenRouter (LLM-based financial analysis)
- Graceful fallback if AI unavailable

# Results-home page, login page, signup page

**Financial Health Assessment**

Get AI-powered insights into your business finances, creditworthiness, and growth readiness.

[Login](#) [Signup](#)

### Create an account

nandy

...

[Signup](#)

Already have an account? [Login](#)

### Login to your account

nandy

...

[Login](#)

Don't have an account? [Sign up](#)

# File upload

Financial Health Tool

Logout

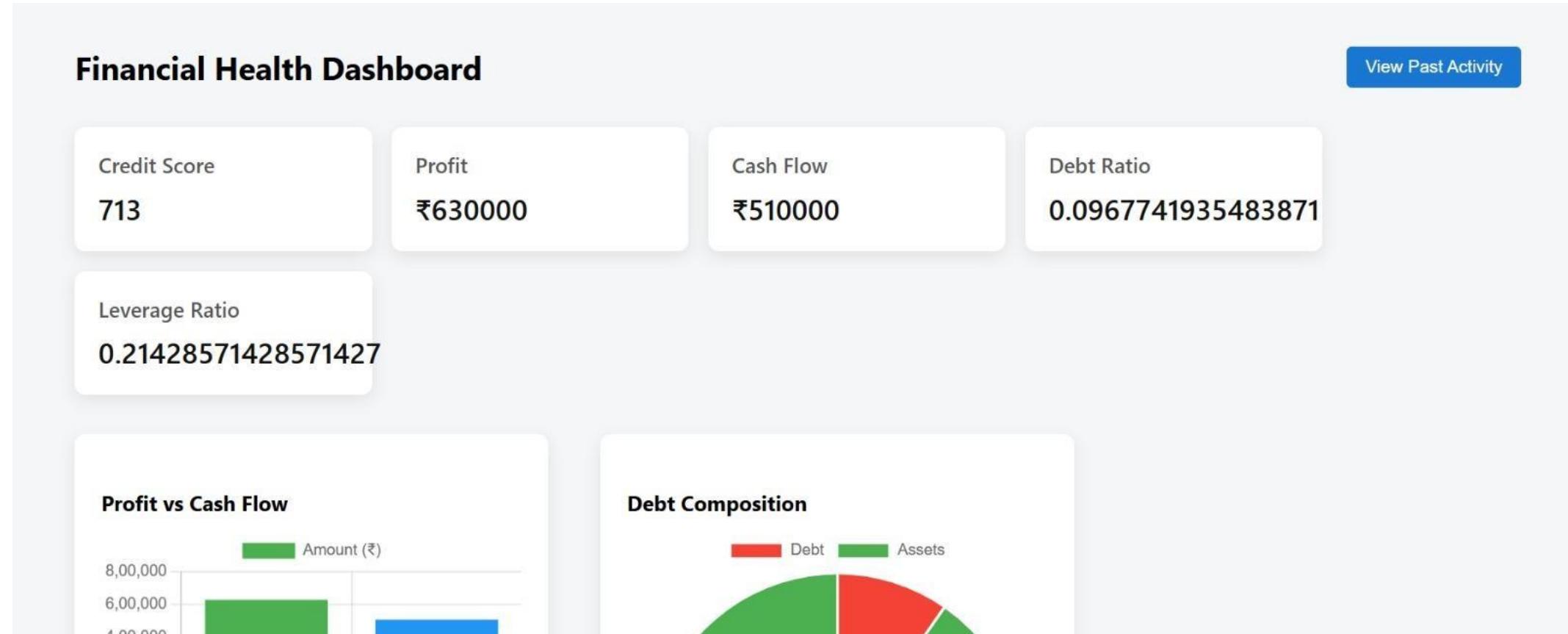
## Upload Financial Data

Upload your financial CSV file to receive a detailed financial health analysis, insights, and recommendations.

No file chosen

Upload a CSV file containing revenue, expenses, cash flow, and balance sheet data.

# Dashboard

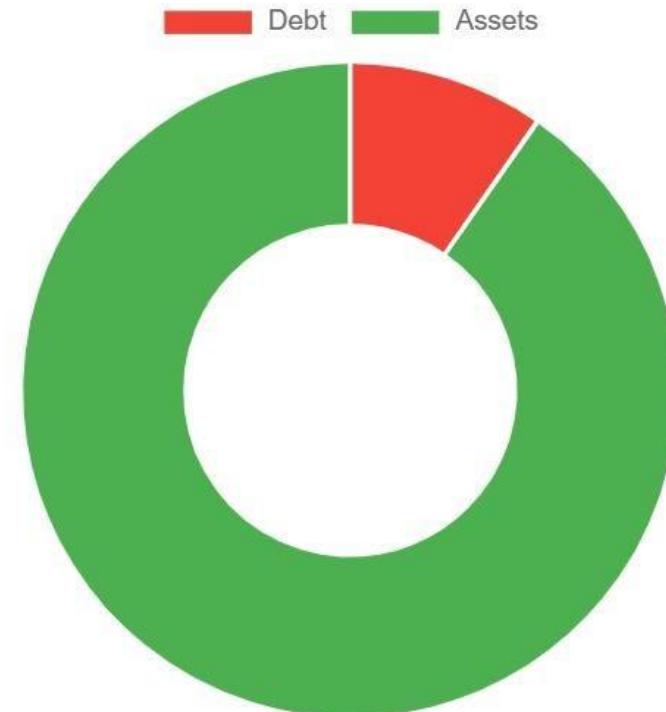


# Pie Chart

**Profit vs Cash Flow**



**Debt Composition**



## **Loan Readiness: Moderate**

### **Health Summary**

- Business is profitable.
- Healthy operational cash flow.
- Debt levels are manageable.

### **Risk Flags**

*No major financial risks detected.*

### **Recommendations**

- May qualify for secured loans or NBFC products.

**AI Summary:** ### 1. What the numbers are telling you – a plain-English snapshot

### **AI Financial Advisor Report**

[Expand Full Report](#)

[Download PDF](#)

# Advisor Report

Financial Health Tool

Logout

## AI Financial Advisor Report

Collapse Report

Download PDF

### 1. What the numbers are telling you – a plain-English snapshot

Metric	What it means	What your number says
<b>Credit score (713)</b>	A score in the 700-749 range is "good" – lenders see you as reliable.	You're well-positioned to get credit at reasonable rates.
<b>Profit (\$630k)</b>	Bottom-line earnings after all expenses.	The business is generating a healthy profit.
<b>Cash-flow from operations (\$510k)</b>	Money actually coming in from day-to-day activities, before financing or investing.	You have strong, positive cash flow – you can cover payroll, suppliers, and reinvest without tapping debt.
<b>Debt-to-asset ratio (0.097 or 9.7%)</b>	What share of the company's assets is financed by debt.	Only about 10% of your asset base is funded with debt – very low leverage.
<b>Leverage ratio (0.214 or 21.4%)</b>	Debt relative to equity (how much you owe vs. how much owners have invested).	You're using modest debt; equity is the dominant source of capital. <ul style="list-style-type: none"><li>• Profitable</li><li>• Strong operating cash flow</li><li>• Debt is manageable</li></ul>
<b>Health summary</b>	Qualitative check-list.	None identified at this time.
<b>Risk flags</b>	Anything that could threaten stability.	
<b>Loan-readiness</b>	Overall ability to take on new financing.	<b>Moderate</b> – you could qualify for many loan products, but lenders will still look at cash-flow coverage and purpose of the loan.

**Bottom line:** Your business is financially sound: good credit, solid profit, ample cash, and very low debt. You're in a position to consider

# Download the Report

The screenshot shows a Microsoft Word document with a dark theme. The top navigation bar includes icons for file, draw, text, and other document functions, along with a search bar and 'Edit with Acrobat' button. The main content area displays a table of financial metrics and their interpretations, followed by a summary and a section on potential risks.

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**Bottom line:** Your business is financially sound: good credit, solid profit, ample cash, and very low debt. You're in a position to consider growth-oriented financing rather than emergency funding.

## 2. Potential Risks (even when none are flagged)

Area	Why it could become a risk	Simple mitigation
<b>Concentration of revenue</b>	If most of the \$630 k profit comes from a single client or product, losing that source would hit earnings hard.	Diversify the customer base or product line.
<b>Cash-flow timing</b>	Large seasonal swings could temporarily dip cash even though the annual figure looks healthy.	Keep a 2-3 month cash-reserve buffer and monitor receivables closely.
<b>Future debt load</b>	"Moderate" loan readiness means adding too much debt could push the leverage ratio higher and affect credit score.	Borrow only what is needed for a clear ROI; keep leverage below 30% of equity.
<b>Interest-rate environment</b>	If you take a variable-rate loan, rising rates could increase debt service	Prefer fixed-rate products or hedge a portion of the exposure

# Future Actions

## Quick Action Checklist (next 30 days)

Day	Task
1-3	Pull the latest P&L, balance sheet, and aging of receivables.
4-7	Identify expense categories >5% YoY growth → start negotiations or freezes.
8-10	Contact top 5 overdue customers → set up payment plans or discounts for early pay.
11-14	Research invoice-financing providers (e.g., Fundbox, BlueVine) and request quotes.
15-18	Run a pricing test on one high-margin product (increase 3%).
19-21	Draft a short “turnaround plan” (profit & cash-flow targets for the next 6 months).
22-25	Meet with your current bank or a local credit union to discuss an asset-based line of credit.
26-30	Review results: profit improvement, cash-flow lift, and cost of any financing you secured. Adjust the plan accordingly.

# History

## Past Financial Analyses

**Credit Score:** 637

**Loan Readiness:** Low

27/12/2025, 10:52:28 am

[View Report](#)

**Credit Score:** 713

**Loan Readiness:** Moderate

27/12/2025, 10:46:49 am

[View Report](#)

# Database With Encryption

The image shows a database management interface with two tables displayed side-by-side.

**Left Table: users**

	<code>id</code> serial	<code>username</code> varchar	<code>hashed_password</code> varchar	<code>analysis_histories</code>
1	rajesh	\$2b\$12\$k8E.AoBj1RT6kWd...	analysis_histories	
2	nandy	\$2b\$12\$03Pgc3cv6lMD0wL...	analysis_histories	

**Right Table: encrypted\_data**

	<code>id</code> serial	<code>user_id</code> integer	<code>encrypted_data</code> bytea	<code>credit_score</code> integer
1	1	1	\x67414141414142705437...	681
2	1	1	\x67414141414142705437...	681
3	1	1	\x67414141414142705437...	637
4	2	2	\x67414141414142705437...	713
5	2	2	\x67414141414142705437...	637

**Thank You ...//**