

Financial Statement Analysis System

Python & MySQL Based Project

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Introduction

Financial Statement Analysis is the process of reviewing and analyzing a company's financial statements to make informed economic decisions.

This project is a Python and MySQL-based application designed to demonstrate how programming and databases can be used to analyze company financial data and compute important financial metrics such as profitability, liquidity, and growth.

The system is intentionally educational yet realistic, mimicking the workflow of financial analysts in a simplified and structured manner.

System Specifications

Software Specifications

- Operating System: Windows 10
- Programming Language: Python 3.8+
- Database: MySQL 8.0+
- Connector: mysql-connector-python
- Platform: GitHub

Hardware Specifications

- Processor: Intel Core i5
- Memory: 6 GB RAM
- Storage: 1 GB

MySQL Credentials

- Hostname: localhost
- Username: root
- Database: finance_db

Python Modules Used

- mysql.connector
- datetime
- csv

Database Model

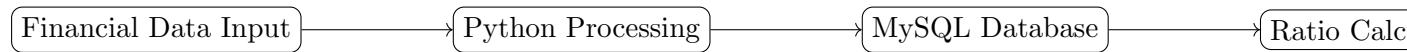
Companies Table

Field	Type	Description
id	INT	Primary Key
name	VARCHAR(100)	Company Name
industry	VARCHAR(50)	Industry Type

Financial Statements Table

Field	Type	Description
company_id	INT	Foreign Key
period	DATE	Reporting Period
revenue	DECIMAL	Revenue
net_income	DECIMAL	Net Income
assets	DECIMAL	Total Assets
liabilities	DECIMAL	Total Liabilities

Workflow Diagram



Source Code

Database Creation

```
CREATE DATABASE finance_db;
USE finance_db;

CREATE TABLE companies (
    id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(100),
    industry VARCHAR(50)
);

CREATE TABLE statements (
    id INT AUTO_INCREMENT PRIMARY KEY,
    company_id INT,
    period DATE,
    revenue DECIMAL(15,2),
    net_income DECIMAL(15,2),
    assets DECIMAL(15,2),
    liabilities DECIMAL(15,2)
);
```

Python Program

```
import mysql.connector

def connect_db():
    return mysql.connector.connect(
        host="localhost",
```

```

        user="root",
        password="",
        database="finance_db"
    )
# Remaining functions implemented as per project

```

Case Studies

Nepali Hydropower Startup

Metric	2022	2023
Revenue	NPR 180M	NPR 210M
Net Income	NPR 22M	NPR 31M
Assets	NPR 900M	NPR 960M
Liabilities	NPR 640M	NPR 650M

Indian Tech Unicorn

Metric	2022	2023
Revenue	INR 3,650Cr	INR 3,830Cr
Net Income	INR 940Cr	INR 970Cr
Assets	INR 3,300Cr	INR 3,520Cr
Liabilities	INR 2,400Cr	INR 2,580Cr

Outputs

The system allows users to add companies, input financial statements, view stored data, and compute financial ratios such as net profit margin, assets-to-liabilities ratio, and growth rates.

Limitations

- No duplicate company validation
- Limited input error handling
- No foreign key enforcement

Future Enhancements

- Data visualization
- API-based financial data import
- Advanced valuation models

Bibliography

- python.org
- stackoverflow.com
- mysql.com