PROJECT TITLE:

Cash Flow Forecasting & Company Valuation Dashboard (DCF-Based)

OVERVIEW:

This project simulates the end-to-end financial analysis process of a company using real-world modelling methods. Built using Power BI, Excel, and Python, the system forecasts future cash flows, estimates business valuation through a Discounted Cash Flow (DCF) model, and dynamically tests financial health using What-If Scenario Analysis.

The project is designed to mirror the workflow of financial analysts in FP&A, investment analysis, and corporate finance — starting from raw transaction-level data and ending in strategic insights such as share price estimation and cash runway risk monitoring.

KEY COMPONENTS:

1. Cash Flow Forecasting (Python)

- Used **Exponential Smoothing** to forecast 6 months of future cash inflows based on historical trends

- Estimated **Operating Expenses (OpEx)** using the average of known outflow categories such as Salaries, Rent, and Marketing

- Set **Capital Expenditures (CapEx)** as a fixed ₹500,000 annually — a common practice when future investment schedules are unknown

- Annualized the short-term forecast to project **5 years of Free Cash Flow (FCF)**, assuming **8% annual FCF growth**, which reflects typical mid-market business growth under inflationary and stable expansion scenarios

2. Scenario Analysis (Power BI – Page 2)

- Implemented interactive **What-If Parameters** in Power BI for adjusting inflows and outflows

- Designed for strategic decision support and risk sensitivity testing

3. Financial Statements Modelling (Excel)

- Modelled a simplified **Income Statement**, **Balance Sheet**, and **Cash Flow Statement** based on assumed and derived inputs

- Used 65% of revenue as **Cost of Goods Sold (COGS)** — a standard assumption for product-heavy businesses without itemized data

- Depreciation assumed flat at ₹10,000/month to represent straight-line wear on capital assets

4. DCF Valuation Model (Excel + Power BI)

- Forecasted FCFs discounted using **10% WACC**, with a **2.5% Terminal Growth Rate**, common for stable companies in emerging markets

- Calculated **Terminal Value** using the perpetuity growth method

- Determined **Enterprise Value (EV)** by summing present values of FCF and Terminal Value

- Derived **Equity Value** by adjusting EV for debt and cash, and calculated **Intrinsic Share Price**

5. Power BI Dashboard

- **Page 1: Executive Summary** – KPIs, Cash Balance, Share Price, Runway

- **Page 2: Scenario Simulation** – Dynamic inflow/outflow controls with impact analytics

- **Page 3: Cash Forecast** – 6-month inflow projection from Python model

- **Page 4: Valuation** – DCF table, Terminal Value, PV, Equity Bridge (Waterfall)

- **Page 5: Financial Statements** – Income Statement, Balance Sheet, and FCF waterfall chart

DATA SOURCES:

- **inflow_outflow.xlsx**: Historical inflow/outflow records (2023–2024)

- **forecast.xlsx**: Python-generated 6-month forecast

- **fcf_forecast.xlsx**: 5-year projected Free Cash Flows

- **financial_statements.xlsx**: Manually modelled 3-statement structure

- **dcf_model.xlsx**: Discounting, Terminal Value, and Share Price logic

TOOLS USED:

- **Python**– Forecasting with `statsmodels` (Exponential Smoothing)

- **Excel**– Statement modeling, assumptions, and DCF math

- **Power BI**– Visual dashboard, scenario modeling, KPI tracking

- **DAX**– Calculated measures (Cash Runway, Net Cash, Share Price)

KEY ASSUMPTIONS (AND WHY):

- COGS = 65% of Revenue → standard industry assumption for mid-size firms without COGS itemization

- OpEx = Avg. of Salaries, Rent, etc. → derived from known outflow categories

- CapEx = ₹500,000 → flat estimate due to no future investment schedule

- Depreciation = ₹10,000/month → straight-line estimate for simplicity

- WACC = 10%, Growth = 2.5% → reflective of Indian private firms

- Working Capital = flat ₹ or % → common modeling shortcut without detailed receivables/payables

STRATEGIC INSIGHTS ENABLED:

- Real-time burn rate and cash runway alerts

- Share price sensitivity to business performance

- Terminal value visualization for long-term value

- Analyst-style valuation bridge (Enterprise → Equity → Share)

OUTPUTS & DELIVERABLES:

- 6-month forecast (`monthly_forecast.xlsx`) for short-term charts

- 5-year FCFs (`forecast_output.xlsx`) for DCF valuation

- Power BI dashboard with 6 interactive pages

- Exportable PDF pitch slide for stakeholder presentation

- Documented Excel files (`dcf_model.xlsx`, `financial_statements.xlsx`) with clear inputs and assumptions