Product Requirements Document (PRD)

Feature: Fundamental Analysis – Phase 1 (Must Have)

Objective

Build a **simple, transparent, and explainable fundamental analysis engine** that helps users: - Understand quarterly business performance using raw numbers (Excel-style) - Visualize trends using charts - Evaluate earnings quality and capital efficiency - Generate a **Fundamental Score** that can later be combined with Technical signals

This phase intentionally avoids valuation complexity (DCF, PE bands) and focuses on **growth consistency, earnings quality, and efficiency**.

Design Principles

1. **Numbers First, Charts Second** – Users must see raw data before interpretation.
2. **Explainability over Prediction** – Every metric should answer *why*, not forecast price.
3. **Quarterly-Centric** – All primary signals are derived from quarterly data.
4. **Composable** – Each module can stand alone and feed into a final score.

Data Scope

- Quarterly Financials (minimum 12 quarters preferred)
- Revenue
- Net Profit
- EPS
- Other Income
- Annual Financials
- ROCE

Feature Modules

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1. Quarterly YoY Engine

Purpose

Measure **business momentum** and **earnings consistency** on a YoY basis.

Metrics (Quarterly, YoY %)

- Sales Growth %
- EPS Growth %
- Net Profit Growth %
- Net Margin % and YoY change

Backend Logic

- YoY = (Current Quarter – Same Quarter Last Year) / Same Quarter Last Year
- Margin = Net Profit / Revenue

UI – Raw Data View

Component: `QuarterlyYoYTable.jsx` - Excel-style table - Rows: Sales %, EPS %, Profit %, Net Margin % - Columns: Quarters (Q1 2022 → Qn) - Conditional coloring: - Green: Positive - Amber: Flat / low growth - Red: Negative

UI – Chart View

Component: `QuarterlyYoYChart.jsx` - Line chart toggle for: - Sales YoY - EPS YoY - Net Margin YoY

Interpretation Rules (UI badges)

- EPS ≥ Sales → Healthy
- Sales ↑, EPS ↓ → Margin pressure
- EPS ↑, Sales ↓ → Other income risk

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2. EPS vs Sales Overlay

Purpose

Validate that **earnings growth is driven by business growth**, not accounting noise.

Metrics

- Quarterly YoY Sales %
- Quarterly YoY EPS %

Backend Logic

- Compute rolling correlation (optional, later enhancement)

UI – Chart

Component: `EarningsVsSalesChart.jsx` - Dual-line chart - X-axis: Quarters - Y-axis: Growth %

UI – Insight Badges

> • "EPS tracking Sales" (Positive)
> • "EPS diverging from Sales" (Warning)

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3. Two-Quarter Rolling Average (2Q Momentum)

Purpose

Reduce quarterly noise and detect **acceleration / deceleration** early.

Metrics

> • 2Q Rolling Avg Sales Growth %
> • 2Q Rolling Avg EPS Growth %

Backend Logic

> • Average of current + previous quarter YoY values

UI – Raw Data

Component: `RollingAverageTable.jsx` - Columns: Quarters - Rows: EPS 2Q Avg, Sales 2Q Avg

UI – Chart

Component: `RollingAverageChart.jsx` - Smoothed dual-line chart

Interpretation

> • Rising EPS & Sales → Momentum building
> • Falling averages → Early slowdown

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4. ROCE (Capital Efficiency)

Purpose

Measure **quality of growth** and capital allocation efficiency.

Metric

> • ROCE (%) – Annual

Backend Logic

- Use reported ROCE
- Track trend (last 5 years if available)

UI – Raw Data

Component: `ROCEDataTable.jsx` - Year vs ROCE %

UI – Chart

Component: `ROCETrendChart.jsx` - Line chart

Interpretation Rules

- ROCE > 15% → Good
- ROCE > 20% → Excellent
- Declining ROCE → Warning

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5. Other Income Check (Earnings Quality)

Purpose

Detect **non-operating earnings dependency**.

Metric

- Other Income % of Net Profit

Backend Logic

- Other Income / Net Profit

UI – Raw Data

Component: `OtherIncomeTable.jsx` - Quarterly values

UI – Chart

Component: `OtherIncomeChart.jsx` - Bar chart

Risk Thresholds

- < 15% → Safe
- 15–30% → Watch

-       30% → Risk

6. Fundamental Score (Phase 1)

Purpose

Create a **single, explainable score** summarizing business quality.

Scoring Breakdown (0–100)

Category	Weight
Sales Growth Consistency	20
EPS vs Sales Alignment	20
2Q Rolling Momentum	15
ROCE	20
Earnings Quality (Other Income)	15
Stability (Volatility of metrics)	10

Backend Output

```
{
  "fundamental_score": 78,
  "grade": "Strong",
  "contributors": {
    "sales_growth": 16,
    "eps_alignment": 18,
    "roce": 17
  }
}
```

UI – Score Banner

Component: `FundamentalHealthBanner.jsx` - Grade: Strong / Neutral / Weak - Confidence: High / Medium - Short explanation

Layout Placement (Frontend)

Fundamental Analysis Tab Structure

1. Fundamental Health Banner
2. Quarterly YoY (Table + Chart toggle)

3. EPS vs Sales Overlay
4. 2Q Rolling Momentum
5. ROCE
6. Other Income Quality
7. Fundamental Score Summary

Non-Goals (Phase 1)

- Valuation models (DCF, PE fair value)
- Forecasting future earnings
- Macro or sector comparison

Future Extensions (Phase 2+)

- Fundamental Regime Shifts (Improving / Deteriorating)
- Tech + Fundamental Conviction Score
- Alerts: EPS breakout + Accumulation
- Sector-relative scoring

Success Criteria

- Users can **verify numbers manually** (Excel-style trust)
- Charts clearly explain trends without interpretation overload
- Fundamental score aligns intuitively with business quality

Status: Draft – Phase 1