Stock Market Predictions

📌 Phase 1: Problem Understanding & Industry Analysis

1. Requirement Gathering

The goal is to help investors and analysts manage stock data inside Salesforce.

- **Store stock details (company name, ticker, sector, price).**
- **Allow investors to track their portfolios (buy/sell transactions).**
- **Show predictions (future price trends).**
- **Provide reports and dashboards (gains/losses, prediction accuracy).**
- **Send alerts when stock crosses certain thresholds.**

2. Stakeholder Analysis

- Investors (End Users) → Want to see their portfolio and stock predictions.
- Financial Analysts → Need dashboards to compare stock performance.
- Admin/Developer → Setup objects, flows, automation, and integrations.
- Executives → Want summary dashboards for decision making.

3. Business Process Mapping

- Current Process (outside Salesforce):
- Investors use multiple apps like Yahoo Finance, Excel, TradingView.
- Predictions are either manual or from third-party websites.
- No single system to combine portfolio + real-time data + predictions.
- Proposed Process (inside Salesforce):
- Salesforce fetches stock data from an external API.
- Data is stored in custom objects (Stock, Portfolio, Transaction, Prediction).

- Automation updates portfolio value and prediction records.
- Reports and dashboards show insights (Top gainers, Loss %).
- Alerts sent to investors when price moves significantly.

4. Industry-Specific Use Case Analysis

- Retail Investors → Manage their personal stock portfolios inside Salesforce.
- Investment Firms → Track multiple client portfolios in one platform.
- Wealth Management Companies → Give AI-based recommendations using predictions.
- 📌 Example: If an investor has 10 shares of Company, Salesforce shows:
- Current Value = Quantity × Price.
- Predicted Next Price = +5%.
- System sends an alert: "Your Company holdings may rise 5% tomorrow."

5. AppExchange Exploration

- Existing apps provide stock tickers or financial dashboards.
- But there is no complete prediction-focused app on AppExchange.
- This project fills that gap by combining portfolio tracking + prediction + alerts.

📌 Phase 2: Org Setup & Configuration

1. Salesforce Edition

- Use Developer Edition → It's free and provides all the features required (custom objects, automation, API integration).
- Suitable for learning and building a POC (Proof of Concept).

2. Company Profile Setup

- Fiscal Year → Set from January to December (to align with global stock reporting).
- Default Currency → Indian Rupee (₹) or USD ($), depending on stock market focus.
- Timezone → Align with the stock exchange (e.g., GMT+5:30 for India).

3. Business Hours & Holidays

- Set Business Hours → 9:30 AM – 3:30 PM (Indian NSE/BSE market).
- Configure Holidays → Official stock market holidays (e.g., Diwali, Independence Day, Republic Day).
- Purpose → Helps with SLA calculations and alerts only during market hours.

4. User Setup & Licenses

- Users:

  Admin User → Full control (manages configurations).
- Investor User → Restricted access (views only their portfolio).

  Assign Salesforce Platform License to Investor user (cost-effective in real scenario).

5. Profiles

- Admin Profile → CRUD (Create, Read, Update, Delete) on all objects.
- Investor Profile → Read-only access to Stocks & Predictions, Read/Write to their Portfolio.

6. Roles

- Admin Role → Higher in hierarchy, can see all data.
- Investor Role → Lower in hierarchy, can only see their own records.

7. Permission Sets

- Create "API Access Permission Set" → Grants API access for stock data integration.
- Assign this only to Admin.

8. Org-Wide Defaults (OWD)

- Portfolio & Transactions → Private (only owner can see).
- Stock → Public Read-Only (everyone can see stock prices).
- Prediction → Controlled by Parent (linked to Stock).

9. Sharing Rules

- Share Portfolios only with the specific investor.
- Admin can see everything, but one investor cannot see another's portfolio.

10. Login Access Policies

- Enable IP Restrictions for Admin login (e.g., office network only).
- Allow investors to log in from anywhere.

11. Dev Org Setup

- Create Developer Org (from Salesforce.com → Free Signup).
- Install sample financial datasets (CSV imports).

12. Sandbox Usage

Use Developer Sandbox for:

- Testing API integrations (stock price API).
- Testing automation (flows, triggers).

- Deploy to production only after validation.

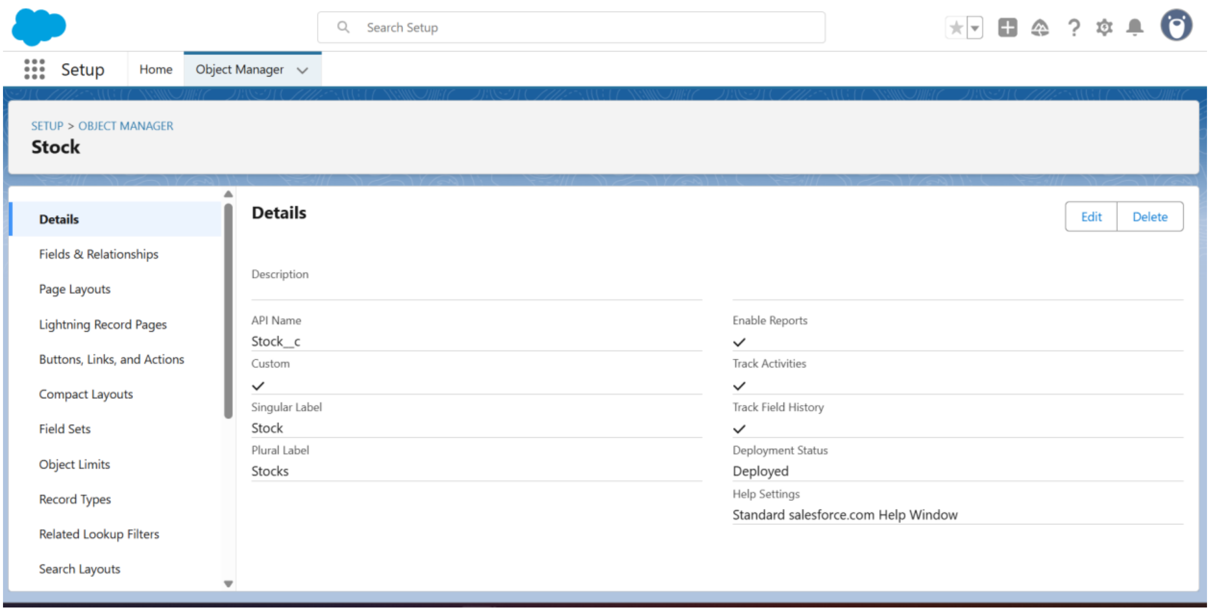
13. Deployment Basics

- Use **Change Sets** for deployment (simple beginner method).
- Advanced option: Use **VS Code + SFDX** for metadata deployment.

📌 Phase 3: Data Modeling & Relationships

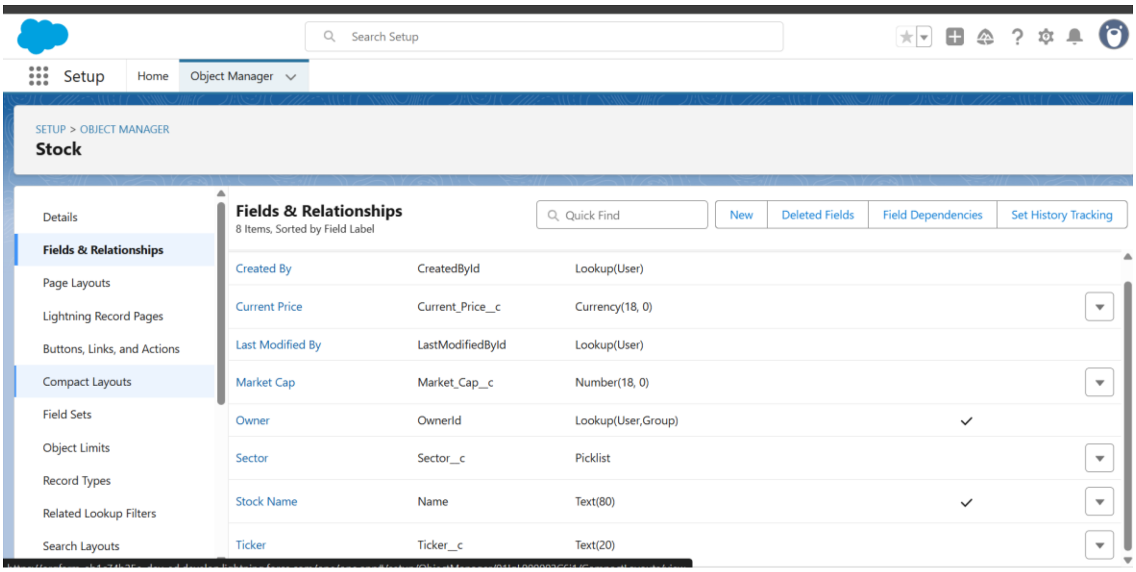
1.Custom Objects & Key Fields

- Stock__c

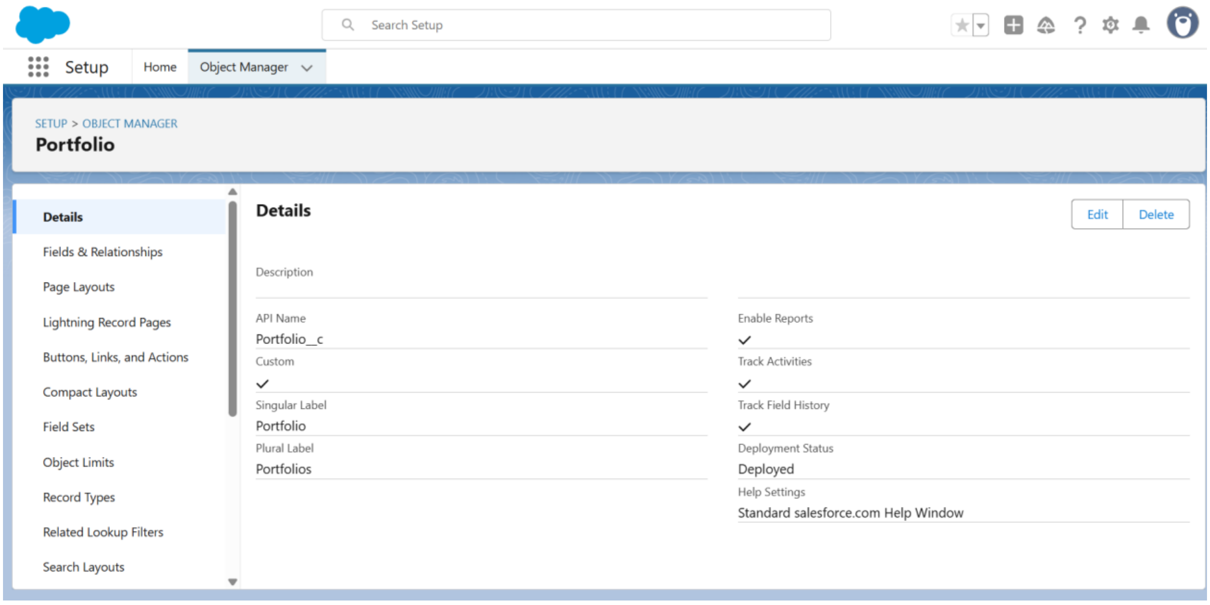


Fields:

- Ticker__c (Text, e.g., TCS, INFY)
- Sector__c (Picklist: IT, Pharma, Banking, etc.)
- Current_Price__c (Currency)
- Market_Cap__c (Number)

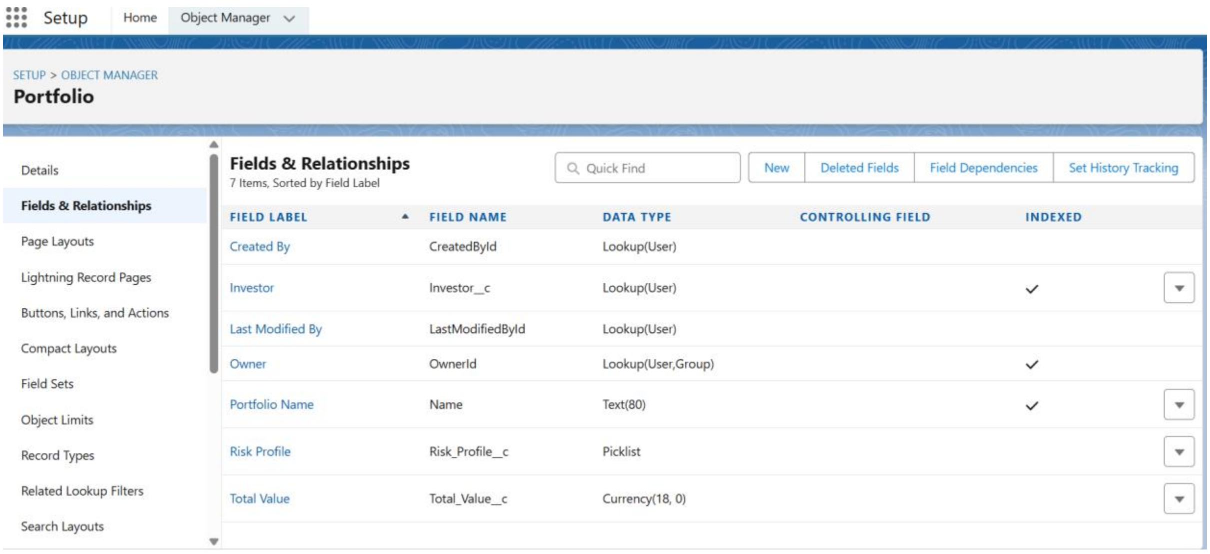


Portfolio__c

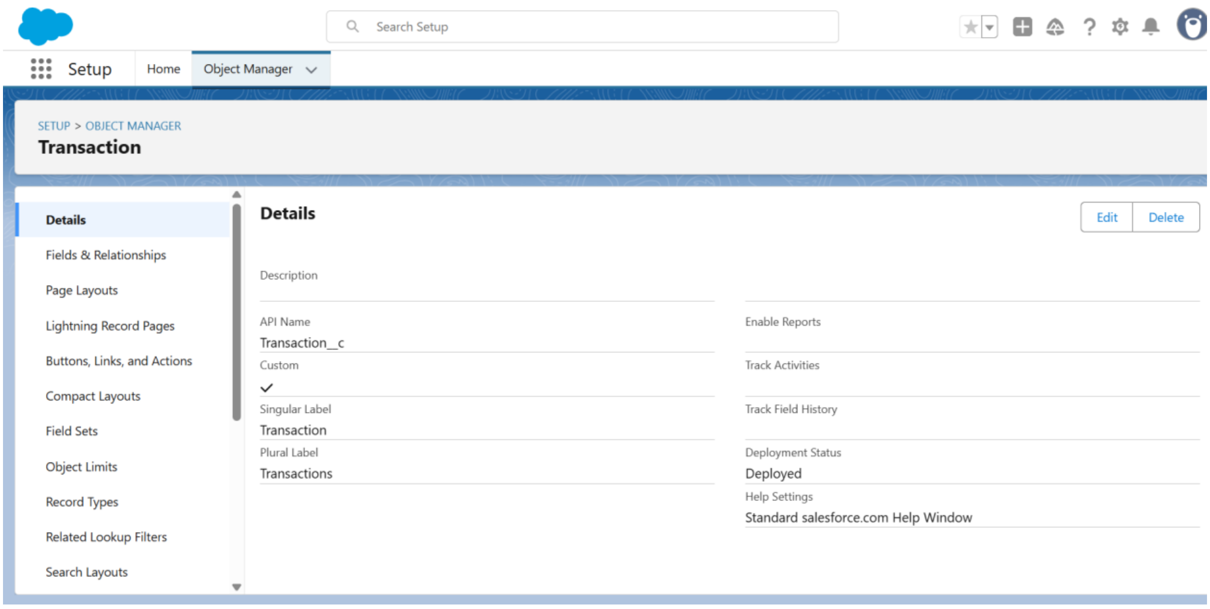


Fields:

- Investor__c (Lookup → User)
- Total_Value__c (Currency, roll-up from Transactions)
- Risk_Profile__c (Picklist: Low, Medium, High)

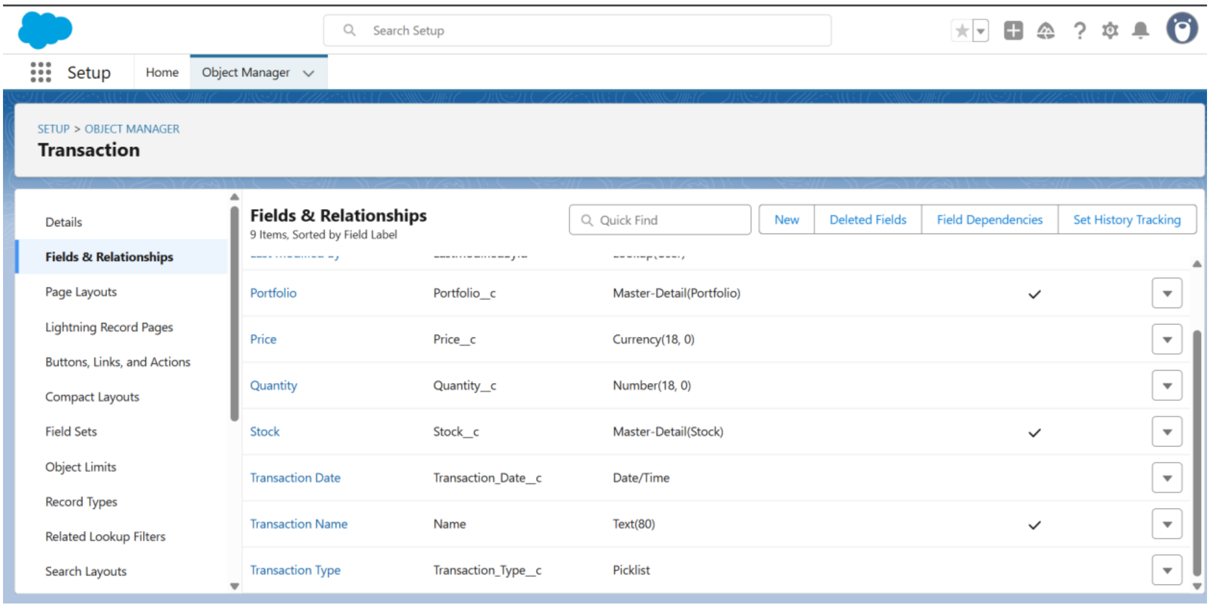


Transaction__c (Junction between Stock & Portfolio)

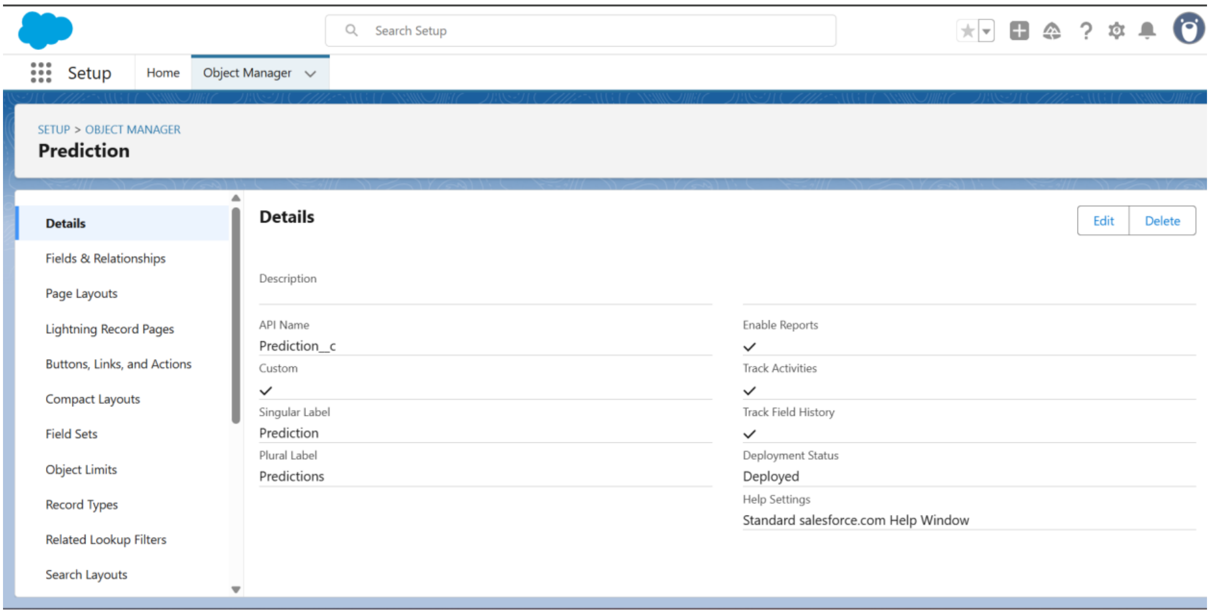


Fields:

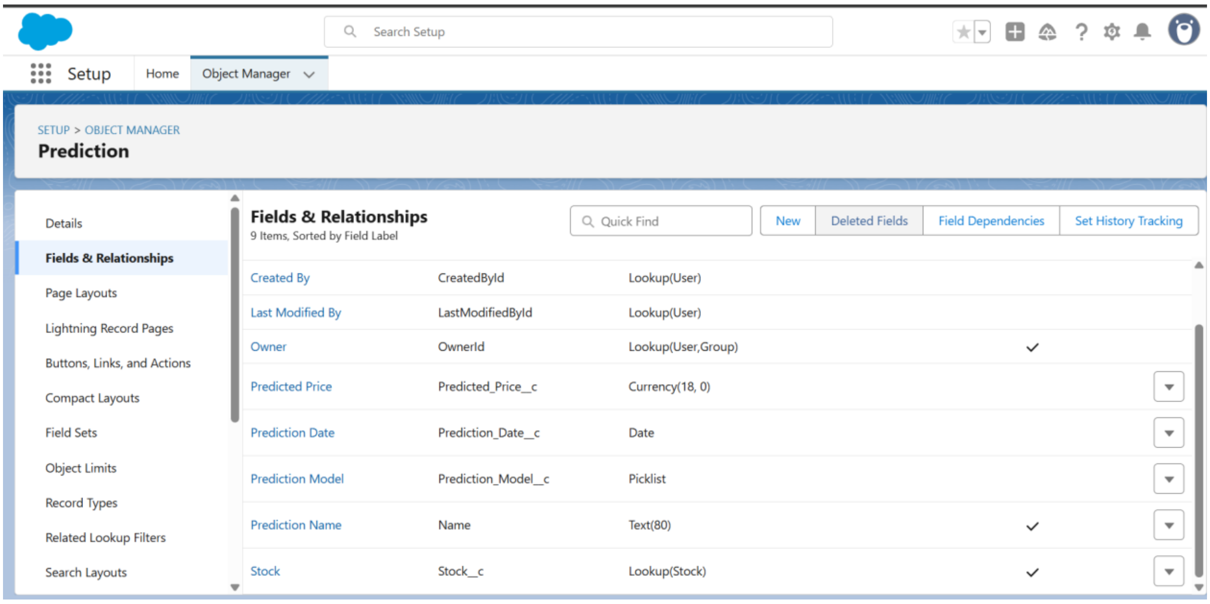
- Portfolio__c (Master-Detail)
- Stock__c (Master-Detail)
- Transaction_Type__c (Picklist: Buy, Sell)
- Quantity__c (Number)
- Price__c (Currency)
- Transaction_Date__c (Date/Time)



- Prediction__c



- Fields:
- Stock__c (Lookup)
- Predicted_Price__c (Currency)
- Confidence_Score__c (Percent)
- Prediction_Date__c (Date)
- Prediction_Model__c (Picklist: Moving Avg, ML, AI Service, etc.)



2.Relationships

- **Portfolio__c → Transaction__c → Stock__c**
  🔗 Many-to-Many via Transaction__c. One portfolio can hold many stocks, and one stock can belong to many portfolios.

- **Stock__c → Prediction__c**
  🔗 One-to-Many. A stock can have multiple predictions over time.

- **User (Investor)** → Portfolio__c (One-to-Many).

3.Schema Builder (Visualization)

- **Investor (User) → Portfolio__c → Transaction__c → Stock__c**
- **Stock__c → Prediction__c**

📌 This way:

- Admins see all data.
- Investors see **only their portfolios & related transactions**.
- Predictions link back to **stocks** for insights.