

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).

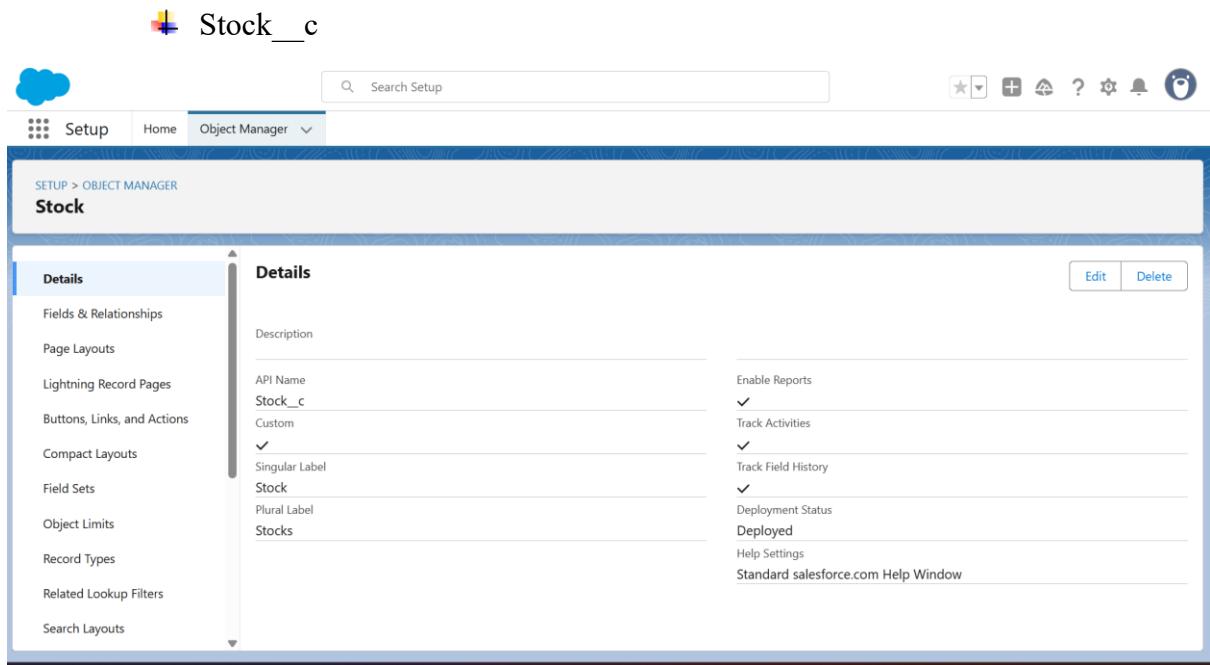
- Deploy to production only after validation.

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

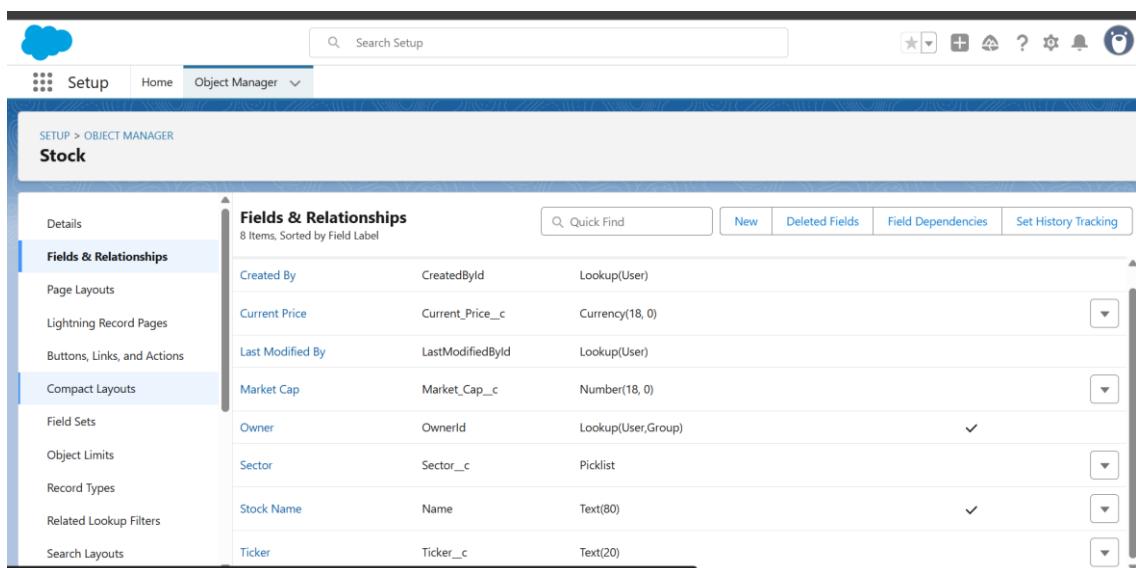
1. Custom Objects & Key Fields



The screenshot shows the Salesforce Object Manager interface for the Stock__c object. The left sidebar lists various setup options like Fields & Relationships, Page Layouts, and Lightning Record Pages. The main pane displays the object's details, including its API name (Stock__c), singular label (Stock), and plural label (Stocks). It also shows deployment status (Deployed) and help settings (Standard salesforce.com Help Window). A sidebar on the right provides quick access to Edit and Delete buttons.

Fields:

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



The screenshot shows the Salesforce Object Manager interface for the Stock__c object, specifically the Fields & Relationships section. The left sidebar is identical to the previous screenshot. The main pane lists eight fields: Created By (CreatedById, Lookup(User)), Current Price (Current_Price__c, Currency(18, 0)), Last Modified By (LastModifiedById, Lookup(User)), Market Cap (Market_Cap__c, Number(18, 0)), Owner (OwnerId, Lookup(User,Group)), Sector (Sector__c, Picklist), Stock Name (Name, Text(80)), and Ticker (Ticker, Text(20)). A toolbar at the top of the list view includes Quick Find, New, Deleted Fields, Field Dependencies, and Set History Tracking.

Portfolio_c

Setup > OBJECT MANAGER
Portfolio

Details

Description

API Name
Portfolio_c

Custom
✓

Singular Label
Portfolio

Plural Label
Portfolios

Enable Reports
✓

Track Activities
✓

Track Field History
✓

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

Edit Delete

Fields:

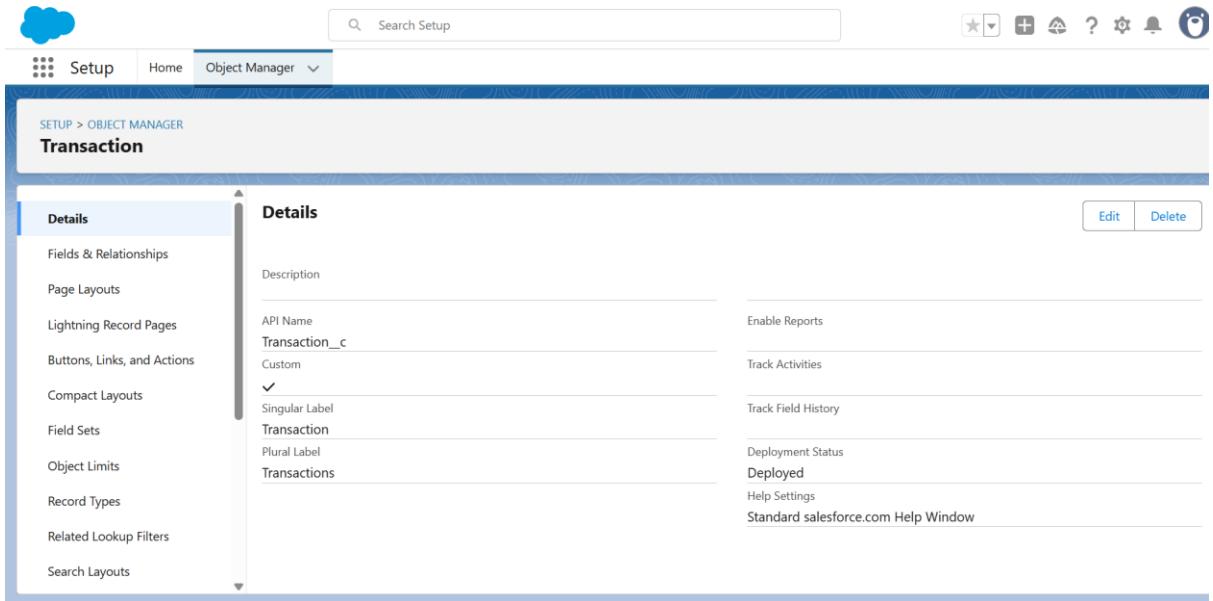
- Investor__c (Lookup → User)
- Total_Value__c (Currency, roll-up from Transactions)
- Risk_Profile__c (Picklist: Low, Medium, High)

Setup > OBJECT MANAGER
Portfolio

Fields & Relationships
7 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Investor	Investor__c	Lookup(User)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Portfolio Name	Name	Text(80)		✓
Risk Profile	Risk_Profile__c	Picklist		
Total Value	Total_Value__c	Currency(18, 0)		

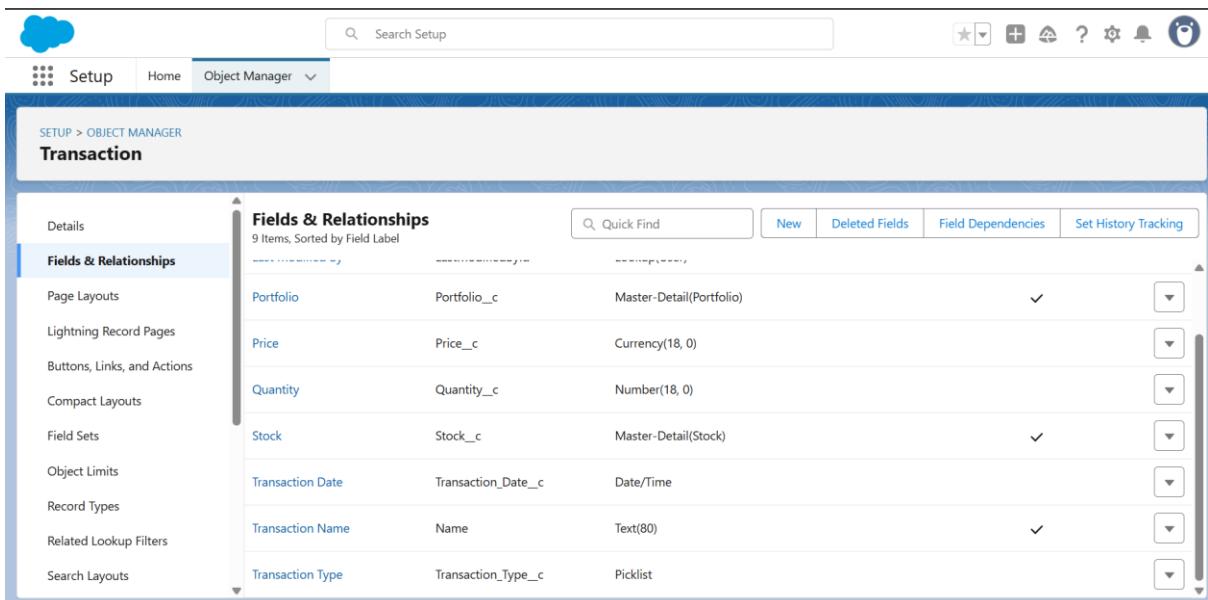
Transaction__c (Junction between Stock & Portfolio)



The screenshot shows the 'Object Manager' section of the Salesforce setup. The left sidebar lists various configuration options under 'Details'. The main area displays the 'Details' tab for the 'Transaction' object. It includes fields for API Name (set to 'Transaction__c'), Singular Label ('Transaction'), Plural Label ('Transactions'), and deployment status ('Deployed').

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)



The screenshot shows the 'Fields & Relationships' section of the 'Object Manager' for the 'Transaction' object. The left sidebar shows 'Fields & Relationships' is selected. The main area lists nine fields: Portfolio (Portfolio__c, Master-Detail(Portfolio)), Price (Price__c, Currency(18, 0)), Quantity (Quantity__c, Number(18, 0)), Stock (Stock__c, Master-Detail(Stock)), Transaction Date (Transaction_Date__c, Date/Time), Transaction Name (Name, Text(80)), and Transaction Type (Transaction_Type__c, Picklist).

Prediction__c

Object Manager

Prediction

Details

Description

API Name
Prediction__c

Custom ✓

Singular Label
Prediction

Plural Label
Predictions

Enable Reports ✓

Track Activities ✓

Track Field History ✓

Deployment Status
Deployed

Help Settings

Standard salesforce.com Help Window

Fields & Relationships

- Page Layouts
- Lightning Record Pages
- Buttons, Links, and Actions
- Compact Layouts
- Field Sets
- Object Limits
- Record Types
- Related Lookup Filters
- Search Layouts

- 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.)

Fields & Relationships

9 Items, Sorted by Field Label

Field	Type	Description
Created By	CreatedById	Lookup(User)
Last Modified By	LastModifiedById	Lookup(User)
Owner	OwnerId	Lookup(User,Group)
Predicted Price	Predicted_Price__c	Currency(18, 0)
Prediction Date	Prediction_Date__c	Date
Prediction Model	Prediction_Model__c	Picklist
Prediction Name	Name	Text(80)
Stock	Stock__c	Lookup(Stock)

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.

