Comprehensive Investment Portfolio System

Introduction
The Comprehensive Investment Portfolio System is designed to manage and track portfolios of clients, where each portfolio contains various investments such as stocks, mutual funds, and bonds. The system provides a holistic view of the client's investment data, including transaction records, historical market data, and portfolio performance.

Entities and Attributes

1. Client Table
The **Client** table holds information about the clients who have portfolios. Each client has a unique ID and can be associated with multiple portfolios.
Attributes:
- **ClientID (PK):** Unique identifier for each client.
- **Name:** Name of the client.
- **ContactDetails:** Contact information (e.g., email, phone).
- **RiskProfile:** Client's risk profile (Low, Medium, High).
- **DateOfBirth:** Date of birth of the client.

2. Portfolio Table
The **Portfolio** table stores information about the client's portfolio. Each portfolio is linked to a client, and a client can have multiple portfolios. The table captures the type and total value of each portfolio.
Attributes:
- **PortfolioID (PK):** Unique identifier for each portfolio.
- **ClientID (FK):** Foreign key referencing the Client table.
- **PortfolioType:** Type of portfolio (Aggressive, Conservative, Balanced).
- **TotalValue:** Total value of the portfolio.
- **DateCreated:** Date when the portfolio was created.

3. InvestmentType Table
The **InvestmentType** table defines different types of investments (e.g., stocks, mutual funds). This allows the system to track various categories of investments within portfolios.
Attributes:
- **InvestmentTypeID (PK):** Unique identifier for each investment type.
- **Name:** Name of the investment type (e.g., Stock, Bond, Mutual Fund).
- **RiskLevel:** General risk level associated with the investment type (Low, Medium, High).

4. Investment Table
The **Investment** table stores information about the specific investments held in a portfolio. It includes details such as the amount invested, current value, and the date of purchase.
Attributes:
- **InvestmentID (PK):** Unique identifier for the investment.
- **InvestmentTypeID (FK):** Foreign key referencing the InvestmentType table.
- **PortfolioID (FK):** Foreign key referencing the Portfolio table.
- **AmountInvested:** Amount of money invested in the asset.
- **CurrentValue:** Current value of the investment.
- **PurchaseDate:** Date the investment was made.
- **SaleDate:** Date the investment was sold (if applicable).

5. Stock Table
The **Stock** table stores information specific to stocks held within a portfolio. Each record contains details such as the stock ticker symbol, quantity owned, and current price.
Attributes:
- **StockID (PK):** Unique identifier for the stock.
- **StockSymbol:** Stock ticker symbol (e.g., AAPL for Apple).
- **CurrentPrice:** Current price of the stock.
- **QuantityOwned:** Number of shares owned.
- **PurchasePrice:** Price per share at the time of purchase.
- **PortfolioID (FK):** Foreign key referencing the Portfolio table.

6. MutualFund Table
The **MutualFund** table tracks mutual fund investments, including the fund's current value and the shares owned by the client in each portfolio.
Attributes:
- **MutualFundID (PK):** Unique identifier for the mutual fund.
- **FundName:** Name of the mutual fund.
- **CurrentValue:** Current value of the mutual fund.
- **SharesOwned:** Number of shares owned by the client.
- **PortfolioID (FK):** Foreign key referencing the Portfolio table.

7. Transaction Table
The **Transaction** table tracks all buy and sell transactions for investments in the portfolio. It records transaction type (buy/sell), transaction amount, and date.
Attributes:
- **TransactionID (PK):** Unique identifier for each transaction.
- **TransactionType:** Type of transaction (Buy, Sell).
- **TransactionDate:** Date the transaction occurred.
- **Amount:** Amount of money involved in the transaction.
- **InvestmentID (FK):** Foreign key referencing the Investment table.

8. MarketData Table
The **MarketData** table stores historical market data for investments, including opening, closing, highest, and lowest prices for each investment type.
Attributes:
- **MarketDataID (PK):** Unique identifier for the market data.
- **InvestmentTypeID (FK):** Foreign key referencing the InvestmentType table.
- **Date:** Date the market data entry was recorded.
- **OpeningPrice:** The opening price on the specified date.
- **ClosingPrice:** The closing price on the specified date.
- **HighestPrice:** Highest price during the trading day.
- **LowestPrice:** Lowest price during the trading day.

Relationships
1. **Client - Portfolio:** A Client can have multiple Portfolios. A Portfolio is linked to one Client via the ClientID foreign key. (1:M relationship)
2. **Portfolio - Investment:** A Portfolio can contain multiple Investments. An Investment is linked to a Portfolio via the PortfolioID foreign key. (1:M relationship)
3. **Investment - InvestmentType:** Each Investment is associated with a specific InvestmentType. The InvestmentTypeID foreign key links an Investment to its type. (M:1 relationship)
4. **Investment - Transaction:** An Investment can have multiple Transactions. Each Transaction is linked to a specific Investment via the InvestmentID foreign key. (1:M relationship)
5. **Portfolio - Stock/MutualFund:** A Portfolio can have multiple Stocks and MutualFunds. The PortfolioID foreign key links these entities to a specific Portfolio. (1:M relationship)
6. **InvestmentType - MarketData:** Each InvestmentType has multiple MarketData entries, representing historical prices. (1:M relationship)