Stock Investments with SQL

Database Design and Development

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Project 1

### Scenario

This simplified Investment Portfolio case study maintains information regarding clients that invest in stocks and mutual funds. Each client has a unique taxpayer identification number. A client may invest in stocks or mutual funds.

A stock is uniquely identified by its ticker, which is symbol on the stock exchange. The name of issue for a stock is the name of the company. A stock has a rating, which is an assessment of the stock. The principal business of a stock denotes the primary business from which the company obtains its revenue. There are several prices associated with a stock. Besides the current price of a stock, the high and low price ranges are recorded for the calendar year. The return value for a stock, which is the price appreciation, is recorded for the prior year and five-year period.

A mutual fund is also uniquely identified by a ticker symbol and has a fund name. The principal objective of the fund is also recorded (e.g. ‘G’ for growth, ‘I’ for income, and ‘S’ for stability). Similar to stocks, mutual funds record a current offering price and a high and low price range. A percent yield from investment income is also maintained. A mutual fund may be associated with at most one fund family.

A fund family has a unique identification number and the company’s name and address. A fund family, as its name implies, can have many associated mutual funds, but must have at least one mutual fund.

Based on the high level introduction to the Investment Portfolio enterprise, assume the following:

The characteristics of a client include a unique taxpayer identification number, a name, and an address. A client can invest in many stocks in many mutual funds.

The characteristics of a stock include the stock’s unique ticker on the stock exchange and additional descriptive properties that include the name of issue, a rating, the principal business, a high and low price range, the current price, and return values for the prior year and 5-year period.

The characteristics of a mutual fund include the mutual fund’s unique ticker and additional descriptive properties that include the name of the fund, its principal objective, the high and low price range, the current offering price, and the fund’s yield. A mutual fund may be associated with the most one fund family.

The characteristics of a fund family include a unique identification, a name, and a address. A fund family may have mutual funds and must be associated with at least one mutual fund.

### Relationship Matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Client | Stock | Mutual Fund | Family Fund |
| Client | --- | Bought by | Bought by | --- |
| Stock | Invests | --- | --- | --- |
| Mutual Fund | Invests | --- | --- | Has |
| Family Fund | --- | --- | Belong to | --- |

# Business Rules

The three pairs of relationships are further defined as the database business rules as follows:

One client may invest in one or more than one stock.

A stock may be bought by one or more than one client.

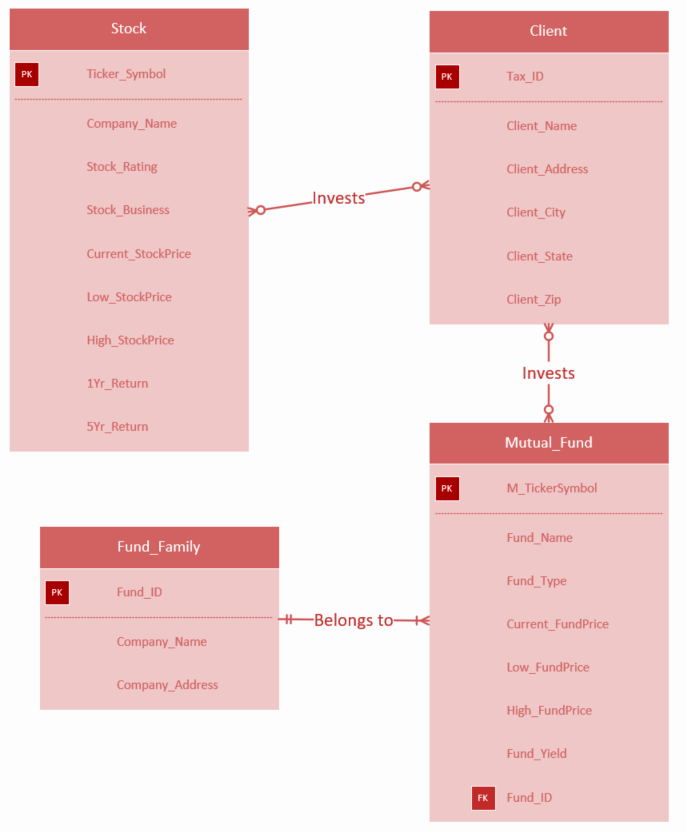
One client may invest in one or more than one mutual fund.

A mutual fund may be bought by one or more than one client.

One fund family must have one or more than one mutual fund.

One fund must belong to only one fund family.

# ER Diagram

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# Tables & Attributes

**Table Name: Client**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Tax\_ID (PK) | Client\_Name | Client\_Address | Client\_City | Client\_State | Client\_Zip |

**Table Name: Stock**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Ticker\_Symbol (PK) | Company\_Name | Stock\_Rating | Stock\_Business | Stock\_Price | One\_Yr\_Return | Five\_Yr\_Return |

**Table Name: Mutual\_Fund**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| M\_TickerSymbol (PK) | Fund\_Name | Fund\_Type | Fund\_Price | Fund\_Yield | Fund\_ID (FK) |

**Table Name: Fund\_Family**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fund\_ID (PK) | Company\_Name | Company\_Address | Company\_City | Company\_State | Company\_Zip |

**Table Name: Stock\_Portfolio**

|  |  |  |
| --- | --- | --- |
| Tax\_ID (PK)(FK) | Ticker\_Symbol (PK)(FK) | NumOfShares |

**Table Name: Fund\_Portfolio**

|  |  |  |
| --- | --- | --- |
| Tax\_ID (PK)(FK) | M\_TickerSymbol (PK)(FK) | M\_NumOfShares |

# Referential Integrity

|  |  |
| --- | --- |
| FK (TableName.ColName) | PK(TableName.ColName) |
| Fund\_Portfolio.Tax\_ID | Client.Tax\_ID |
| Fund\_Portfolio.M\_TickerSymbol | Mutual\_Fund.M\_TickerSymbol |
| Stock\_Portfolio.Tax\_ID | Client.Tax\_ID |
| Stock\_Portfolio.Ticker\_Symbol | Stock.Ticker\_Symbol |
| Mutual\_Fund.Fund\_ID | Fund\_Family.Fund\_ID |

Functional Dependency Analysis

**Full Dependency**

Tax\_ID >> Client\_Name, Client\_Address

Ticker\_Symbol >> Company\_Name, Stock\_Rating, Stock\_Business, Stock\_Price, One\_Yr\_Return, Five\_Yr\_Return

M\_TickerSymbol >>Fund\_Name, Fund\_Type, Fund\_Price, Fund\_Yield, Fund\_ID

Fund\_ID >>Company\_Name, Company\_Address

Tax\_ID, Ticker\_Symbol >> NumOfShares

Tax\_ID, M\_TickerSymbol >> M\_NumOfShares

# Relational Schema after Normalization

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | 1NF | 2NF | 3NF |
| Client | x | x | x |
| Stock | x | x | x |
| Mutual Fund | x | x | x |
| Fund Family | x | x | x |
| Stock\_Portfolio | x | x | x |
| Fund\_Portfolio | x | x | x |

Project 2

SQL DDL (Database Creation Script)

DROP TABLE Client CASCADE CONSTRAINTS ;

DROP TABLE Stock CASCADE CONSTRAINTS ;

DROP TABLE Fund\_Family CASCADE CONSTRAINTS ;

DROP TABLE Mutual\_Fund CASCADE CONSTRAINTS ;

DROP TABLE Fund\_Portfolio CASCADE CONSTRAINTS ;

DROP TABLE Stock\_Portfolio CASCADE CONSTRAINTS ;

CREATE TABLE Client

(Tax\_ID VARCHAR2(11) NOT NULL,

Client\_Name VARCHAR2(30) ,

Client\_Address VARCHAR2(26) ,

Client\_City VARCHAR2(13) ,

Client\_State VARCHAR2(2) ,

Client\_Zip NUMBER ,

CONSTRAINT CLIENT\_PK PRIMARY KEY (Tax\_ID));

CREATE TABLE Stock

(Ticker\_Symbol VARCHAR2(4) NOT NULL,

Company\_Name VARCHAR2(30) ,

Stock\_Rating VARCHAR2(1) ,

Stock\_Business VARCHAR2(25) ,

Current\_StockPrice DECIMAL(6,2) ,

Low\_StockPrice DECIMAL(6,2) ,

High\_StockPrice DECIMAL(6,2) ,

One\_Yr\_Return DECIMAL(6,2) ,

Five\_Yr\_Return DECIMAL(6,2) ,

CONSTRAINT STOCK\_PK PRIMARY KEY (Ticker\_Symbol));

CREATE TABLE Fund\_Family

(Fund\_ID VARCHAR2(5) NOT NULL,

Company\_Name VARCHAR2(30) ,

Company\_Address VARCHAR2(30) ,

Company\_City VARCHAR2(10) ,

Company\_State VARCHAR2(2) ,

Company\_Zip VARCHAR2(5) ,

CONSTRAINT FUND\_FAMILY\_PK PRIMARY KEY (Fund\_ID));

CREATE TABLE Mutual\_Fund

(M\_TickerSymbol VARCHAR2(5) NOT NULL,

Fund\_Name VARCHAR2(10) ,

Fund\_Type VARCHAR2(15) ,

Current\_FundPrice DECIMAL(6,2) ,

Low\_FundPrice DECIMAL(6,2) ,

High\_FundPrice DECIMAL(6,2) ,

Fund\_Yield DECIMAL(4,2) ,

Fund\_ID VARCHAR2(5) ,

CONSTRAINT MUTUAL\_FUND\_PK PRIMARY KEY (M\_TickerSymbol),

CONSTRAINT MUTUAL\_FUND\_FK1 FOREIGN KEY (Fund\_ID) REFERENCES Fund\_Family(Fund\_ID));

CREATE TABLE Fund\_Portfolio

(Tax\_ID VARCHAR2(11) NOT NULL,

M\_TickerSymbol VARCHAR2(30) NOT NULL,

M\_NumOfShares NUMBER ,

CONSTRAINT FUND\_PORTFOLIO\_PK PRIMARY KEY (Tax\_ID, M\_TickerSymbol),

CONSTRAINT FUND\_PORTFOLIO\_FK1 FOREIGN KEY (Tax\_ID) REFERENCES Client(Tax\_ID),

CONSTRAINT FUND\_PORTFOLIO\_FK2 FOREIGN KEY (M\_TickerSymbol) REFERENCES Mutual\_Fund(M\_TickerSymbol));

CREATE TABLE Stock\_Portfolio

(Tax\_ID VARCHAR2(11) NOT NULL,

Ticker\_Symbol VARCHAR2(30) NOT NULL,

NumOfShares NUMBER ,

CONSTRAINT STOCK\_PORTFOLIO\_PK PRIMARY KEY (Tax\_ID, Ticker\_Symbol),

CONSTRAINT STOCK\_PORTFOLIO\_FK1 FOREIGN KEY (Tax\_ID) REFERENCES Client(Tax\_ID),

CONSTRAINT STOCK\_PORTFOLIO\_FK2 FOREIGN KEY (Ticker\_Symbol) REFERENCES Stock(Ticker\_Symbol));

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('000-00-0001', 'Selina Wong', '1355 S Hines Blvd', 'Gainesville', 'FL', 32601);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('000-40-4040', 'Christian Serna', '650 E Rosemead Blvd', 'Rosemead', 'CA', 91770);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('404-69-5522', 'Kevin Smith', '400 S 4th St NW', 'Washington', 'DC', 20591);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('500-50-5000', 'Victoria Hong', '1333 1/2 E Frontier Ave', 'Manhattan', 'NY', 10004);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('999-69-5000', 'Frank Zuniga', '450 E New Ave', 'Monterey Park', 'CA', 91754);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('777-11-8799', 'Scott Jones', '550 S Grand Ave', 'Los Angeles', 'CA', 90013);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('282-62-5799', 'Zion Wu', '11121 E Freemark Circle Dr', 'Seattle', 'WA', 97954);

INSERT INTO Client (Tax\_ID, Client\_Name, Client\_Address, Client\_City, Client\_State, Client\_Zip)

VALUES ('322-33-3221', 'Kaho Akiya', '550 N Ivory Coast Ave', 'Bellevue', 'WA', 98004);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('AAPL', 'Apple Inc.', 'B', 'Consumer Electronics', 167.88, 164.47, 168.94, 160.68, 112.44);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('CSCO', 'Cisco Systems Inc.', 'C', 'Network Equipment', 41.34, 40.72, 41.50, 35.63, 28.47);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('VZ', 'Verizon Communications Inc.', 'C', 'Mobile Telecommunications', 47.22, 46.72, 47.62, 48.24, 49.05);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('MSI', 'Motorola Solutions Inc.', 'B', 'Network Equipment', 105.27, 104.40, 106.42, 91.32, 71.97);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('TMUS', 'T-Mobile US Inc.', 'C', 'Mobile Telecommunications', 60.06, 59.29, 60.18, 62.86, 41.60);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('GOOG', 'Alphabet Inc.', 'A', 'Systems Software', 1013.91, 990.37, 1020.99, 991.53, 739.75);

INSERT INTO Stock (Ticker\_Symbol, Company\_Name, Stock\_Rating, Stock\_Business, Current\_StockPrice, Low\_StockPrice, High\_StockPrice, One\_Yr\_Return, Five\_Yr\_Return)

VALUES ('MSFT', 'Microsoft Corp.', 'C', 'Systems Software', 89.58, 87.89, 90.05, 78.63, 53.22);

INSERT INTO Fund\_Family (Fund\_ID, Company\_Name, Company\_Address, Company\_City, Company\_State, Company\_Zip)

VALUES ('JAN11' , 'Janus' , '3773 Cherry Creek North Dr.', 'Denver', 'CO', 80209);

INSERT INTO Fund\_Family (Fund\_ID, Company\_Name, Company\_Address, Company\_City, Company\_State, Company\_Zip)

VALUES ('FIE22' , 'Fidelity' , '2300 Litton Ln.' , 'Herbron' , 'KY' , 41048);

INSERT INTO Fund\_Family (Fund\_ID, Company\_Name, Company\_Address, Company\_City, Company\_State, Company\_Zip)

VALUES ('TRW55' , 'T Rowe Price' , '100 East Pratt St.' , 'Baltimore' , 'MD', 21202);

INSERT INTO Fund\_Family (Fund\_ID, Company\_Name, Company\_Address, Company\_City, Company\_State, Company\_Zip)

VALUES ('ABN97' , 'ABN AMRO' , '208 S. LaSalle St., 4th Floor', 'Chicago', 'IL', 60604);

INSERT INTO Fund\_Family (Fund\_ID, Company\_Name, Company\_Address, Company\_City, Company\_State, Company\_Zip)

VALUES ('GE777' , 'GE' , '3003 Summer St.', 'Stamford', 'CT', 06912);

INSERT INTO Mutual\_Fund (M\_TickerSymbol, Fund\_Name, Fund\_Type, Current\_FundPrice, Low\_FundPrice, High\_FundPrice, Fund\_Yield, Fund\_ID)

VALUES ('JAGIX' , 'Janus' , 'Growth Fund' , 28.15 , 30.42 , 27.84 , -.23 , 'JAN11');

INSERT INTO Mutual\_Fund (M\_TickerSymbol, Fund\_Name, Fund\_Type, Current\_FundPrice, Low\_FundPrice, High\_FundPrice, Fund\_Yield, Fund\_ID)

VALUES ('FEQIX' , 'Fidelity' , 'Equity\_Income' , 48.07 , 55.11 , 42.46 , -1.53 , 'FIE22');

INSERT INTO Mutual\_Fund (M\_TickerSymbol, Fund\_Name, Fund\_Type, Current\_FundPrice, Low\_FundPrice, High\_FundPrice, Fund\_Yield, Fund\_ID)

VALUES ('RPMGX' , 'T Rowe' , 'Mid-Gap Growth' , 37.84 , 40.06 , 36.18 , -1.18 , 'TRW55');

INSERT INTO Mutual\_Fund (M\_TickerSymbol, Fund\_Name, Fund\_Type, Current\_FundPrice, Low\_FundPrice, High\_FundPrice, Fund\_Yield, Fund\_ID)

VALUES ('VERDX' , 'Veredus' , 'Growth Fund' , 15.74 , 19.88 , 15.74 , -13.91 , 'ABN97');

INSERT INTO Mutual\_Fund (M\_TickerSymbol, Fund\_Name, Fund\_Type, Current\_FundPrice, Low\_FundPrice, High\_FundPrice, Fund\_Yield, Fund\_ID)

VALUES ('GEEQX' , 'GE US' , 'Equity Fund' , 26.02 , 28.12 , 25.92 , -3.24 , 'GE777');

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('000-00-0001' , 'JAGIX' , 640);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('000-00-0001' , 'RPMGX' , 40);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('000-40-4040' , 'VERDX' , 83);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('000-40-4040' , 'RPMGX' , 100);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('000-40-4040' , 'GEEQX' , 162);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('404-69-5522' , 'FEQIX' , 200);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('500-50-5000' , 'VERDX' , 10);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('500-50-5000' , 'RPMGX' , 302);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('999-69-5000' , 'JAGIX' , 116);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('999-69-5000' , 'VERDX' , 5);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('777-11-8799' , 'FEQIX' , 90);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('777-11-8799' , 'RPMGX' , 140);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('282-62-5799' , 'VERDX' , 640);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('322-33-3221' , 'JAGIX' , 660);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('322-33-3221' , 'RPMGX' , 860);

INSERT INTO Fund\_Portfolio (Tax\_ID, M\_TickerSymbol, M\_NumOfShares)

VALUES ('322-33-3221' , 'GEEQX' , 160);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('000-00-0001' , 'AAPL' , 200);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('000-00-0001' , 'VZ' , 9);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('000-40-4040' , 'MSI' , 20);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('404-69-5522' , 'MSI' , 29);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('404-69-5522' , 'TMUS' , 60);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('404-69-5522' , 'CSCO' , 80);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('404-69-5522' , 'MSFT' , 100);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('500-50-5000' , 'MSFT' , 10);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('500-50-5000' , 'TMUS' , 10);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('999-69-5000' , 'MSFT' , 3);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('999-69-5000' , 'GOOG' , 209);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('777-11-8799' , 'GOOG' , 192);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('282-62-5799' , 'AAPL' , 69);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('282-62-5799' , 'VZ' , 269);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('322-33-3221' , 'VZ' , 99);

INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('322-33-3221' , 'MSFT' , 35);

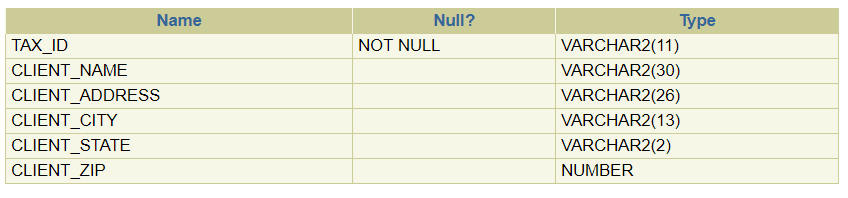
INSERT INTO Stock\_Portfolio (Tax\_ID, Ticker\_Symbol, NumOfShares)

VALUES ('322-33-3221' , 'GOOG' , 49);

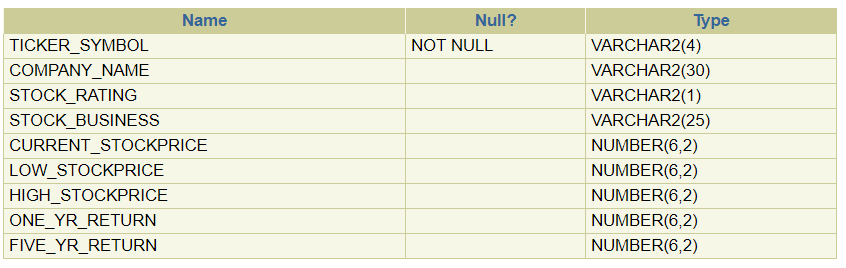
COMMIT;

Database Structure

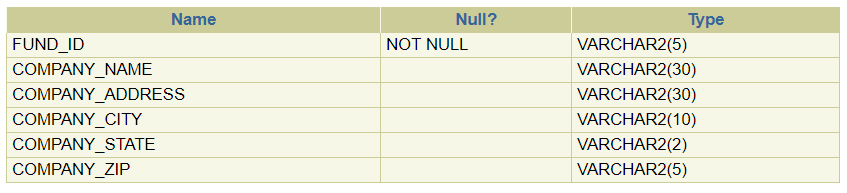
**DESC CLIENT;**

****

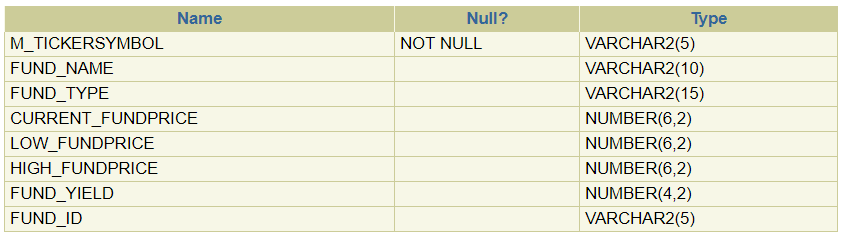
**DESC STOCK;**

****

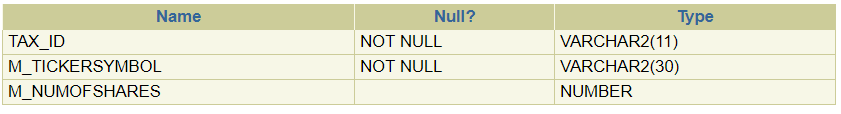
**DESC FUND\_FAMILY;**

****

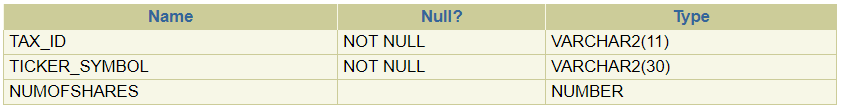
**DESC MUTUAL\_FUND;**

****

**DESC FUND\_PORTFOLIO;**

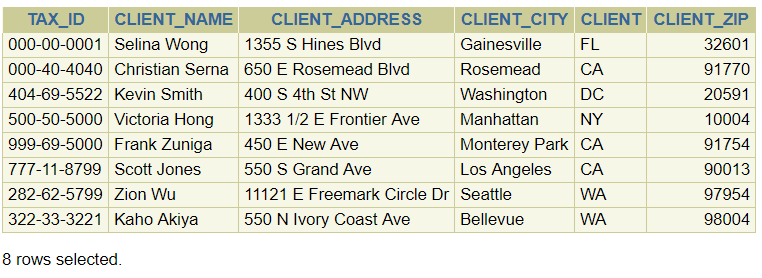
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**DESC STOCK\_PORTFOLIO**

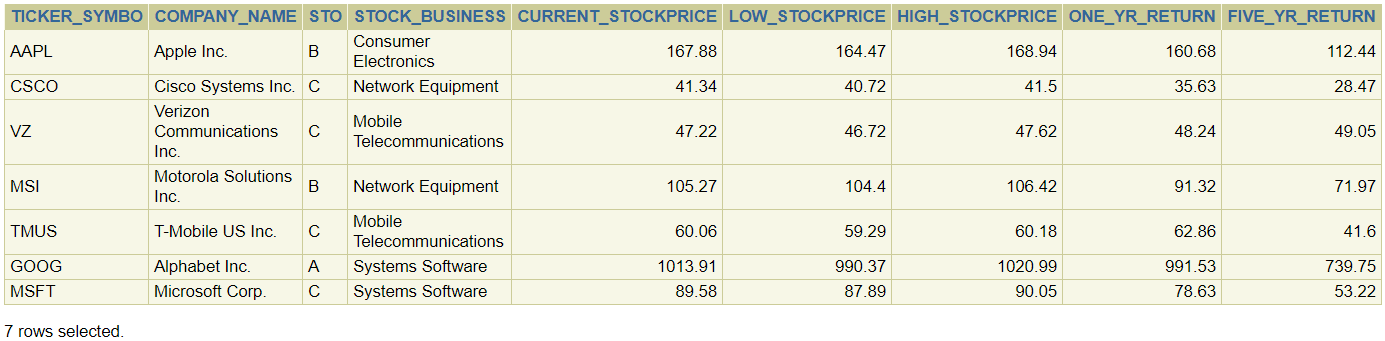
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Database Entity Instances

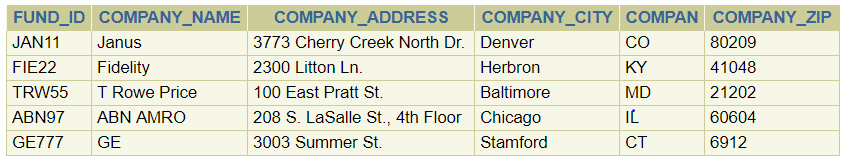
**SELECT \* FROM CLIENT;**

****

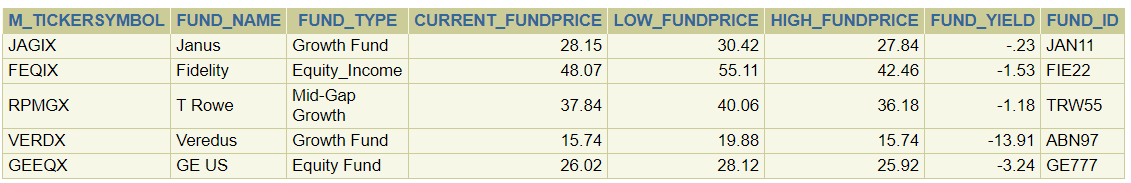
**SELECT \* FROM STOCK;**

****

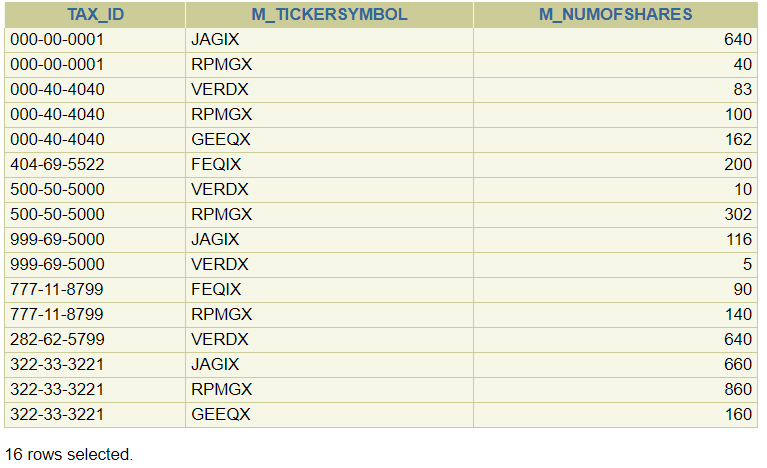
**SELECT \* FROM FUND\_FAMILY;**

****

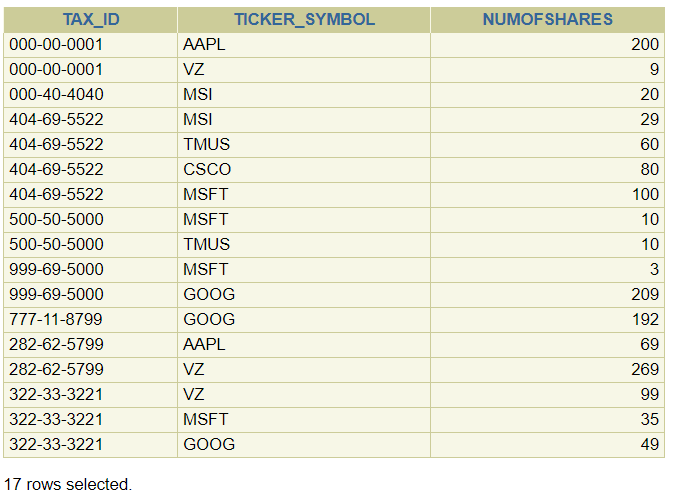
**SELECT \* FROM MUTUAL\_FUND;**

****

**SELECT \* FROM FUND\_PORTFOLIO;**

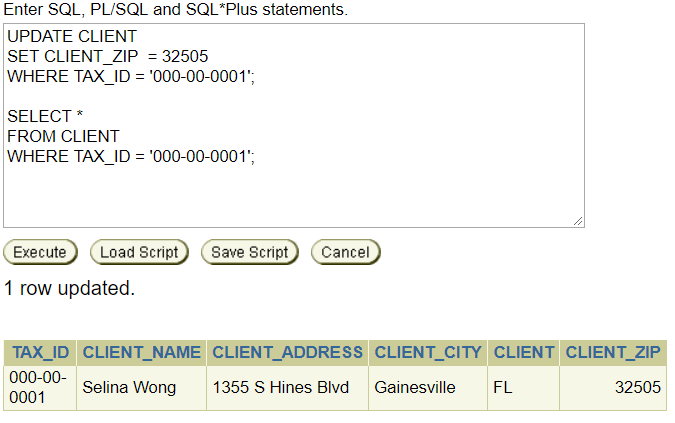
****

**SELECT \* FROM STOCK\_PORTFOLIO;**

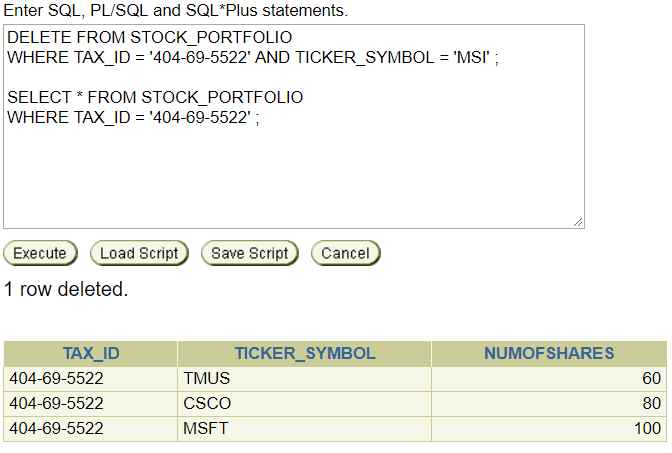


SQL Test Statements

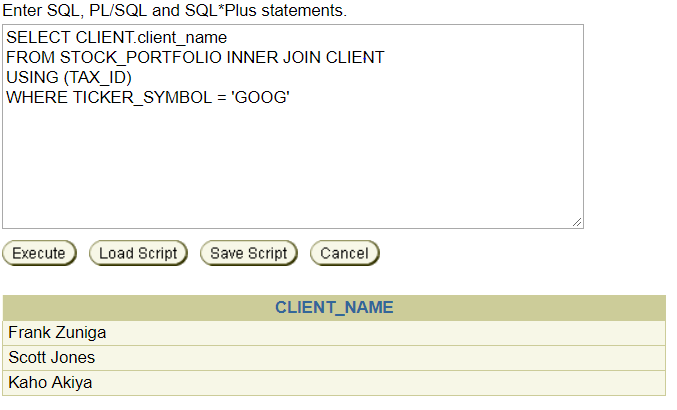
**Change the zip code of client 000-00-0001 to client\_zip 32505 and display the change.**

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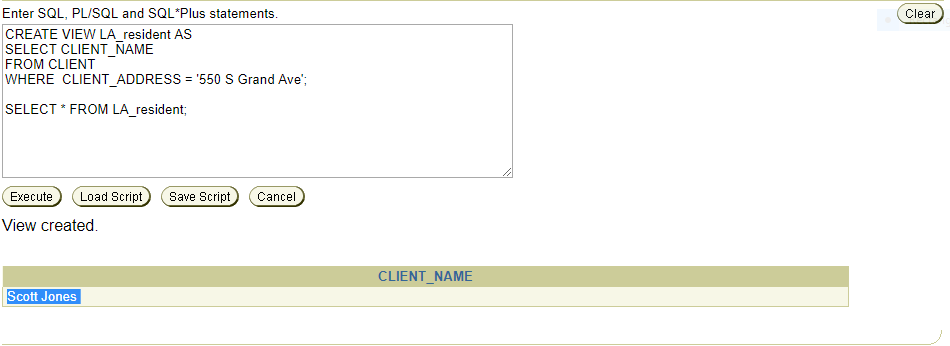
**Delete stock MSI, under tax ID 404-69-5522 and display the change.**

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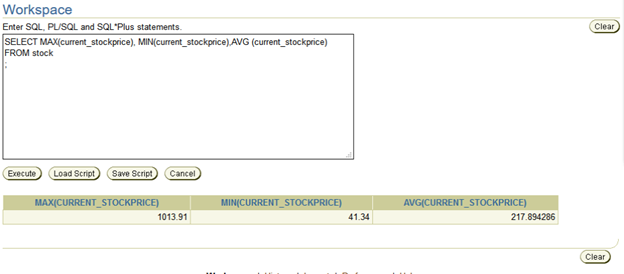
**Get the names of clients who invests in ticker symbol GOOG.**

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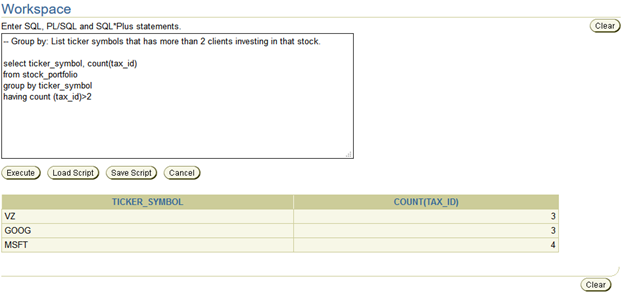
**Create View: Create a view for clients that are living in Los Angeles.**



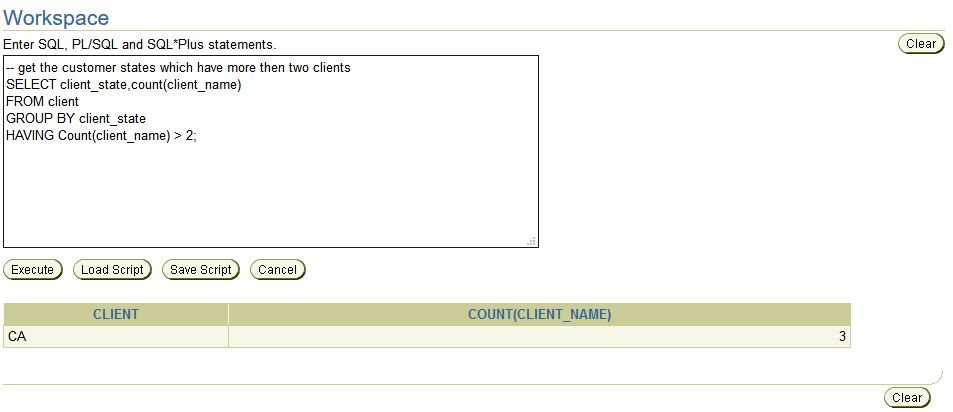
**Minimum, Maximum, and Average: Get the minimum, maximum, and average current stock prices for all stocks.**

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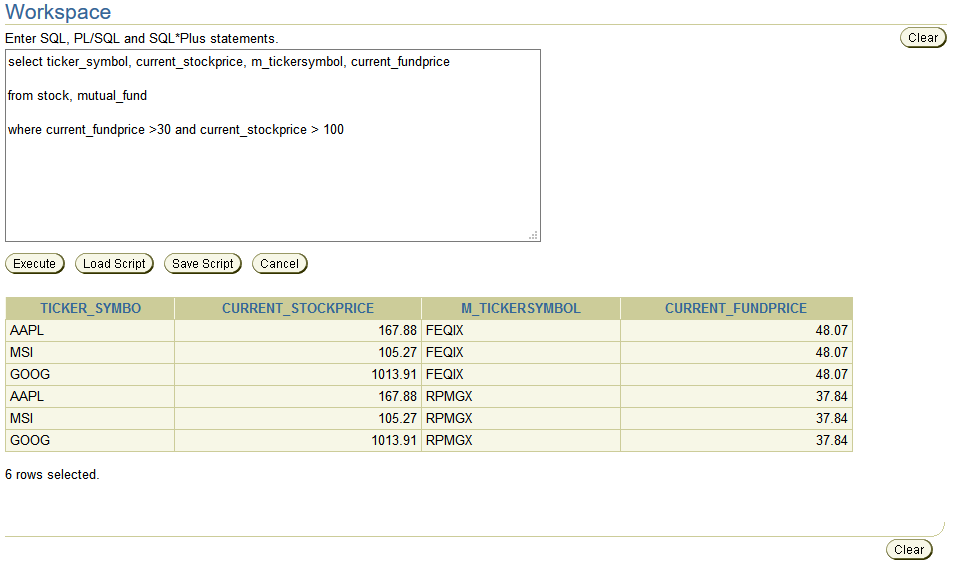
**Group by: List ticker symbols that has more than 2 clients investing in that stock.**

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**Get client states which have more than 2 clients.**



**List all current stock prices greater than $100.00 and current fund prices greater than $30.00 with their corresponding ticker symbols.**



**List the company’s names, addresses, fund types, and current fund price of companies that share their name with a fund name**

