**REPORT**

**Database Management And Database Design**

**Project Item 3**

**Team Members:**

Nikhil Dharane – 001409173

Kaviya Sachi – 001387786

Varun Senthil – 001434831

Anuja Suryawanshi – 001383812

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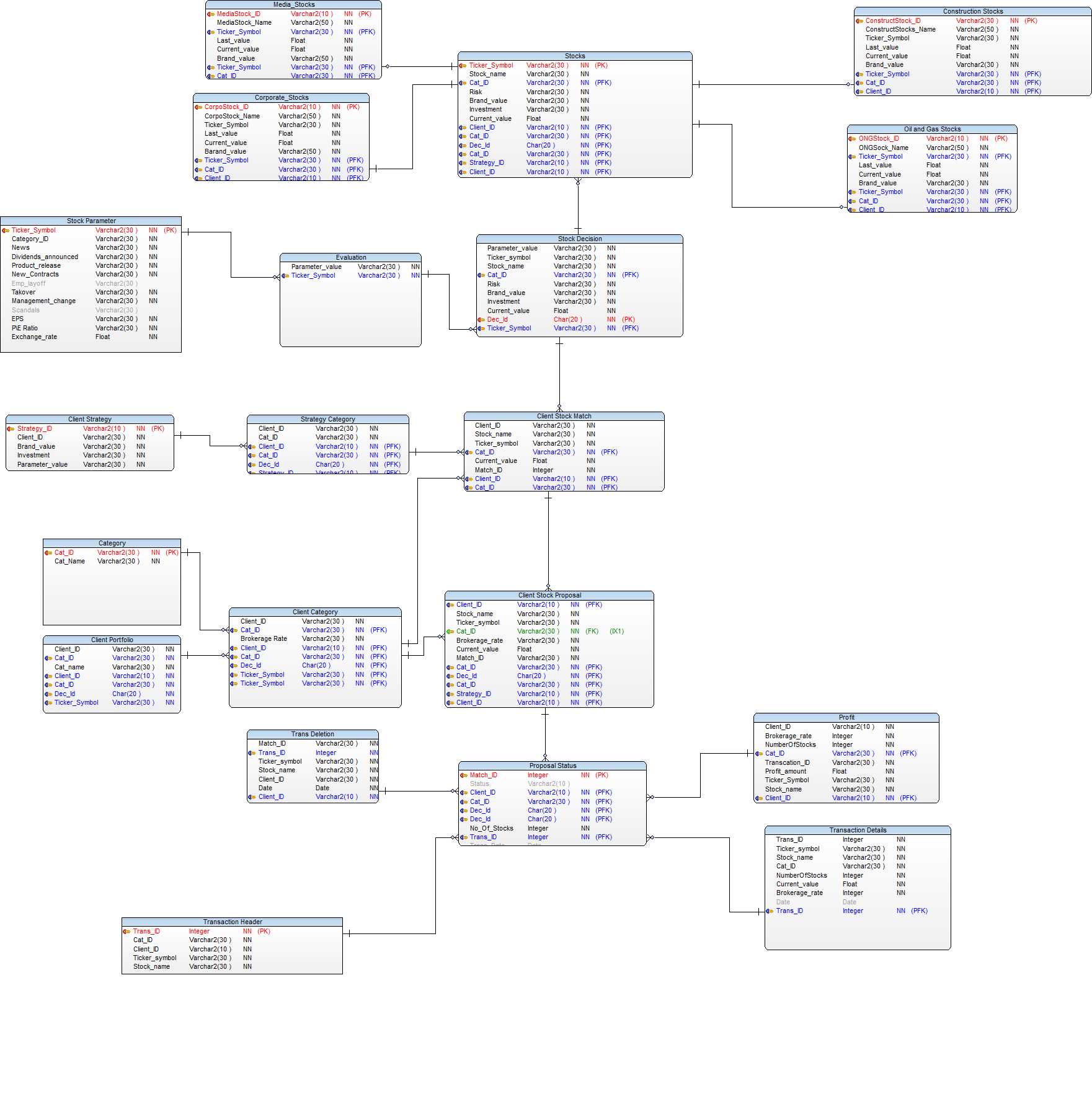
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**Abstract:**

The purpose of this project is to provide the fund management firm with the strategies to filter the clients based on their portfolio for optimal investment plan with the less involvement of risks and man-force through automation. This report contains Entity Relationship Diagram which shows the relationship of all the entity sets that are in the database. Also, the business rules, scope of the database schema and all the tables used are provided.

**Entity Relationship Diagram:**

An entity relationship diagram (ERD) shows the relationships of entity sets stored in a database. An entity in this context is an object, a component of data. An entity set is a collection of similar entities. These entities can have attributes that define its properties. By defining the entities, their attributes, and showing the relationships between them, an ER diagram illustrates the logical structure of databases.



**Scope of Database Schema:**

The scope of the project is proposing Stock to Client which matches their area of interest using their previous portfolio.

The Rules of Interest:

* 1. Stock
  2. Category
  3. Brokerage Rate
  4. Stock Value
  5. Stock Condition
  6. Client
  7. Stock Proposal

**Business Rules:**

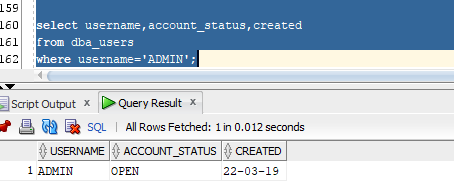
* Every Client-Stock proposal should have a unique transaction ID
* Profit is calculated as a product of number of stocks and brokerage rate
* Transaction id is used to track the transaction header and all the minor details
* Transaction date is created using the system timestamp and must be in the format MM-DD-YY
* All the accepted proposals will be tracked using transaction details and all the details for deleted proposals will be tracked using transaction deletion
* Number of stocks when the proposal is accepted must be one or greater than one but not zero or null
* Every parameter condition must not be null and should have a certain value associated with it.
* Every parameter condition must have a value that is within its range
* The finally evaluated parameter value for a stock should not be null and must not be greater than 100
* The ticker symbol must always be unique when referring to a stock
* The change value for a stock in the staging level must reflect as the current value for the stock in the deployed database tables
* The ticker symbol should be a unique sequence of 3 letter and cannot be null for a particular stock
* The match id and transaction id must be unique and not null
* SSN, contact number of the client should not be null and must not be greater than 10 digits
* Email, city, state and zip code of the client must not be null
* Client name, and client id must be unique and cannot be null
* Every Stock\_Proposal should be Accepted/Rejected by the client
* A client is associated with one or more Stocks
* Based on Stock\_Parameter, Evaluation must be performed and categorized as Extremely High/High/Moderate/Low/Extremely Low.
* Stock\_Decision is made by evaluating the Evaluation and Stock\_Table
* Every Client may have zero, one or more than one strategy
* Every Client must have one or more stock categories of interest
* The Client can accept zero, one or more than one stock proposal
* Every stock is evaluated first and proposed to the client only if the client minimum conditions are met for the stock
* Every stock must have only one category
* The particular one stock can be proposed to multiple clients if the client minimum conditions are met for the stock
* The particular stock cannot be proposed to an individual client multiple times.
* Every stock must have the current stock value.
* Every stock proposed to a particular client must have a unique match\_id
* Every proposed stock must include the brokerage rate
* Every proposed stock must have either 'accept' OR 'Reject' status to be processed further
* Every parameter condition like News, Dividends announced, Product Release, must be greater than or equal to the expected parameter\_value from the client's side
* A client have one and only one SSN.
* The Stock\_Table can have wide range of stocks from History table, but no stocks should be repeated.

**User Privileges:**

Access given to two users Admin and user (i.e. Client). Admin has all the rights to add, update, insert into database. Also maintain and manage the database. User has access to Client, Client portfolio, Proposal Status tables.

**Admin privileges:**

create user Admin identified by Admin;

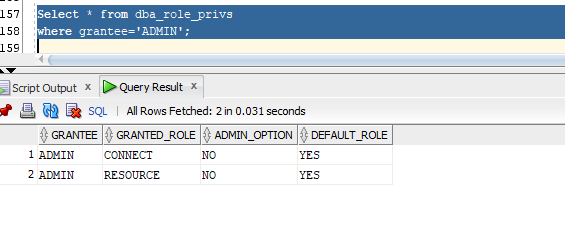


Giving connect privilege to Admin

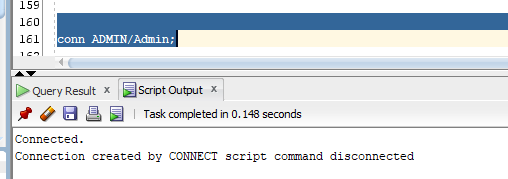
grant connect to Admin;

Granting resource(allows to create procedure/triggers)

grant resource to Admin;



Connect successful for ADMIN



**Granting Role1 to Admin**

**Queries for granting roles:**

create role ROLE1;

grant select\_catalog\_role to ROLE1;

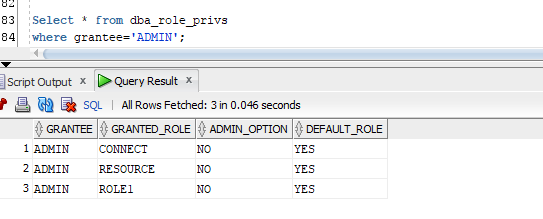
grant execute\_catalog\_role to ROLE1;

grant DELETE\_CATALOG\_ROLE to ROLE1;

GRANT GRANT ANY OBJECT PRIVILEGE TO ROLE1;

**Granting Role1 privileges to Admin:**

grant ROLE1 to ADMIN;



create user Client identified by Client;

grant connect to Client;

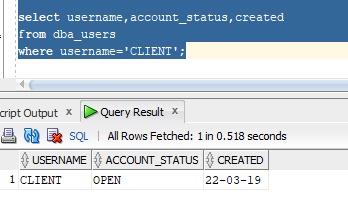
grant resource to Client;

conn CLIENT/Client;

GRANT SELECT ON client\_portf TO CLIENT;

GRANT SELECT ON client TO CLIENT;

GRANT SELECT ON PROPOSAL\_STATUS TO CLIENT;



**DML And DDL SQL queries for Creating tables and Inserting sample data to test the integrity constraints of the sample data:**

**Healthcare sector table:**

**DDL Create:**

CREATE TABLE Healthcare (

"Stock\_Name" Varchar(255),

"Ticker\_Symbol" Varchar(10),

"Last\_Value" Float,

"Change\_Value" Float,

"Brand Value" Varchar(10),

"Cat\_id" Varchar(10)

);

**DDL insert:**

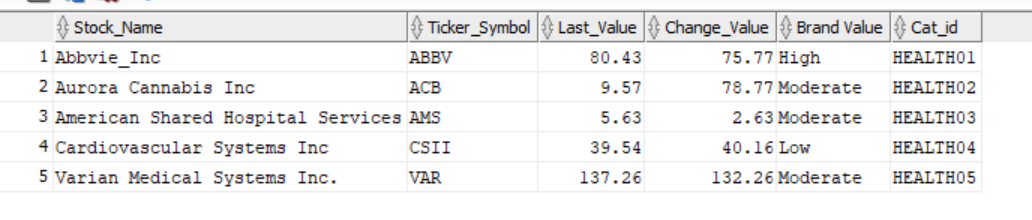
insert into Healthcare values('Abbvie\_Inc', 'ABBV', 80.43, 75.77, 'High', 'HEALTH01');

insert into Healthcare values('Aurora Cannabis Inc', 'ACB', 9.57, 78.77, 'Moderate', 'HEALTH02');

insert into Healthcare values('American Shared Hospital Services', 'AMS', 5.63, 2.63, 'Moderate', 'HEALTH03');

insert into Healthcare values('Cardiovascular Systems Inc', 'CSII', 39.54, 40.16, 'Low', 'HEALTH04');

insert into Healthcare values('Varian Medical Systems Inc.', 'VAR', 137.26, 132.26, 'Moderate', 'HEALTH05');



**Energy sector table:**

**DDL Create:**

CREATE TABLE Energy (

"Stock\_Name" Varchar(255),

"Ticker\_Symbol" Varchar(10),

"Last\_Value" Float,

"Change\_Value" Float,

"Brand Value" Varchar(10),

"Cat\_id" Varchar(10)

);

**DDL insert:**

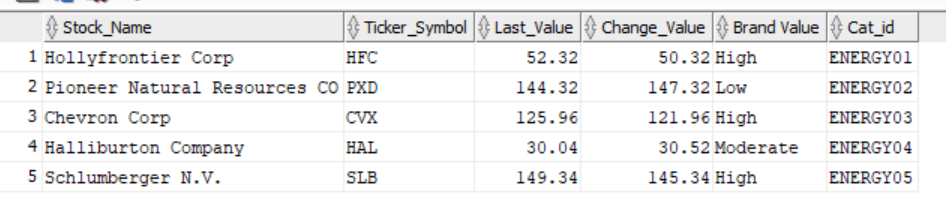
insert into Energy values('Hollyfrontier Corp', 'HFC', 52.32, 50.32, 'High', 'ENERGY01');

insert into Energy values('Pioneer Natural Resources CO', 'PXD', 144.32, 147.32, 'Low', 'ENERGY02');

insert into Energy values('Chevron Corp', 'CVX', 125.96, 121.96, 'High', 'ENERGY03');

insert into Energy values('Halliburton Company', 'HAL', 30.04, 30.52, 'Moderate', 'ENERGY04');

insert into Energy values('Schlumberger N.V.', 'SLB', 149.34, 145.34, 'High', 'ENERGY05');



**Technology sector table:**

**DDL Create:**

CREATE TABLE Technology (

"Stock\_Name" Varchar(255),

"Ticker\_Symbol" Varchar(10),

"Last\_Value" Float,

"Change\_Value" Float,

"Brand Value" Varchar(10),

"Cat\_id" Varchar(10)

);

**DDL insert:**

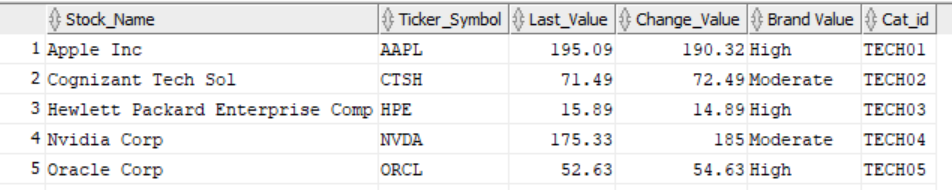
insert into Technology values('Apple Inc ', 'AAPL', 195.09, 190.32, 'High', 'TECH01');

insert into Technology values('Cognizant Tech Sol', 'CTSH', 71.49, 72.49, 'Moderate', 'TECH02');

insert into Technology values('Hewlett Packard Enterprise Comp', 'HPE', 15.89, 14.89, 'High', 'TECH03');

insert into Technology values('Nvidia Corp', 'NVDA', 175.33, 185.00, 'Moderate', 'TECH04');

insert into Technology values('Oracle Corp', 'ORCL', 52.63, 54.63, 'High', 'TECH05');



**Industrials sector table:**

**DDL** **Create**:

CREATE TABLE Industrials (

"Stock\_Name" Varchar(255),

"Ticker\_Symbol" Varchar(10),

"Last\_Value" Float,

"Change\_Value" Float,

"Brand Value" Varchar(10),

"Cat\_id" Varchar(10)

);

**DDL insert:**

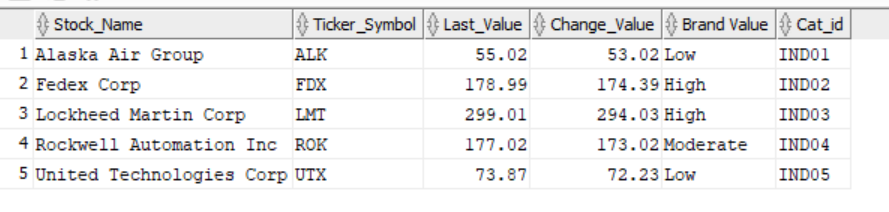
insert into Industrials values('Alaska Air Group', 'ALK', 55.02, 53.02, 'Low', 'IND01');

insert into Industrials values('Fedex Corp', 'FDX', 178.99, 174.39, 'High', 'IND02');

insert into Industrials values('Lockheed Martin Corp', 'LMT', 299.01, 294.03, 'High', 'IND03');

insert into Industrials values('Rockwell Automation Inc', 'ROK', 177.02, 173.02, 'Moderate', 'IND04');

insert into Industrials values('United Technologies Corp', 'UTX', 73.87, 72.23, 'Low', 'IND05');



**ConsumerDiscretionary sector table:**

**DDL Create:**

CREATE TABLE ConsumerDiscretionary (

"Stock\_Name" Varchar(255),

"Ticker\_Symbol" Varchar(10),

"Last\_Value" Float,

"Change\_Value" Float,

"Brand Value" Varchar(10),

"Cat\_id" Varchar(10)

);

**DDL insert:**

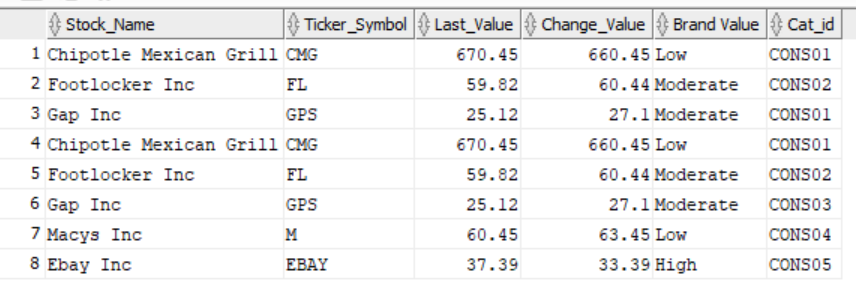
insert into ConsumerDiscretionary values('Chipotle Mexican Grill', 'CMG', 670.45, 660.45, 'Low', 'CONS01');

insert into ConsumerDiscretionary values('Footlocker Inc', 'FL', 59.82, 60.44, 'Moderate', 'CONS02');

insert into ConsumerDiscretionary values('Gap Inc', 'GPS', 25.12, 27.1, 'Moderate', 'CONS03');

insert into ConsumerDiscretionary values('Macys Inc', 'M', 60.45, 63.45, 'Low', 'CONS04');

insert into ConsumerDiscretionary values('Ebay Inc', 'EBAY', 37.39, 33.39, 'High', 'CONS05');



**Client\_portfolio:**

**DDL Create:**

create table client\_portf(

Client\_Id varchar(5) NOT NULL,

Category\_Name varchar(25) NOT NULL,

Cat\_ID Varchar(25) NOT NULL

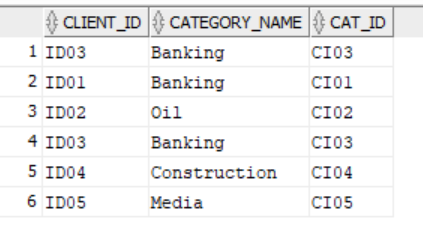
);

**DDL Insert:**

insert into Client\_portf values ('ID01','Banking','CI01');

insert into Client\_portf values ('ID02','Oil&Gas','CI02');

insert into Client\_portf values ('ID03','Banking','CI03');



**Category:**

**DDL Create:**

create table Category(

Cat\_ID varchar(25) NOT NULL PRIMARY KEY,

Category\_Name varchar(25) NOT NULL,

Brokerage\_Rate int NOT NULL);

**DDL Insert:**

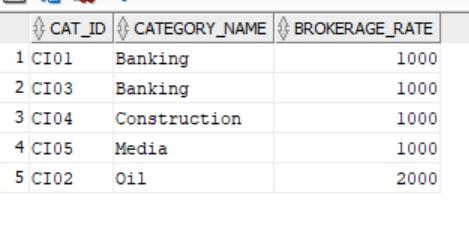
insert into Category values ('CI01','Banking',1000);

insert into Category values ('CI02','Oil&Gas',1000);

insert into Category values ('CI03','Banking',1000);

insert into Category values ('CI04','Construction',1000);

insert into Category values ('CI05','Media',1000);



**Client strategy:**

**DDL Create:**

create table Client\_strat(

Strategy\_ID varchar(5) NOT NULL,

Cat\_ID varchar(25) NOT NULL,

Brand\_value varchar(25) NOT NULL,

Investment varchar(25) NOT NULL,

Parameter\_Value int NOT NULL,

PRIMARY KEY (Strategy\_ID)

);

**DDL Insert:**

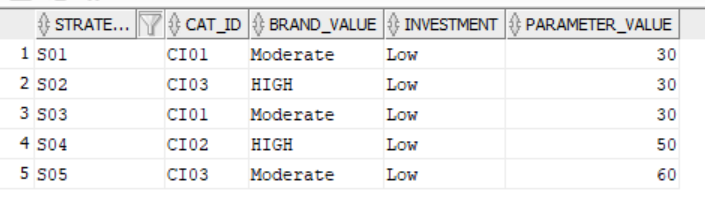
insert into Client\_strat values ('S01','CI01','Moderate','Low',30);

insert into Client\_strat values ('S02','CI03','HIGH','Low',30);

insert into Client\_strat values ('S03','CI01','Moderate','Low',30);

insert into Client\_strat values ('S04','CI02','HIGH','Low',50);

insert into Client\_strat values ('S05','CI03','Moderate','Low',60);



**Client:**

**DDL Create:**

Create table Client(

Client\_Id varchar(5) NOT NULL PRIMARY KEY,

First\_Name varchar(255) NOT NULL,

Last\_Name varchar(255) NOT NULL,

Street varchar(255) NOT NULL,

Contact\_Number varchar(10) NOT NULL,

SSN varchar(10) NOT NULL,

Email varchar(255) NOT NULL,

City varchar(50) NOT NULL,

State varchar(50) NOT NULL,

Zip\_code varchar(10) NOT NULL

);

**DDL** **Insert**:

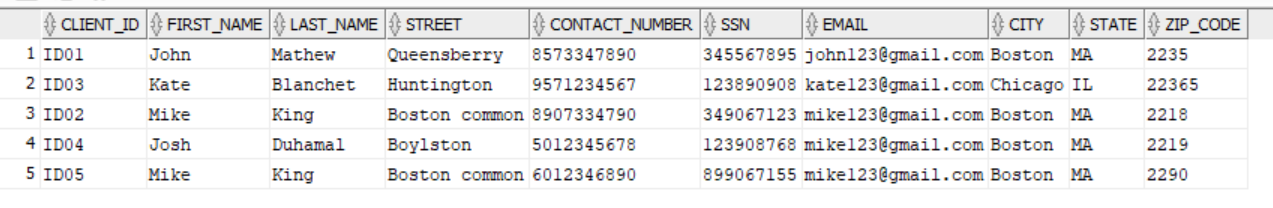
insert into Client values ('ID01','John', 'Mathew', 'Queensberry', 8573347890 ,0345567895,'john123@gmail.com','Boston','MA',02235);

insert into Client values ('ID03','Kate','Blanchet','Huntington',9571234567,0123890908,'kate123@gmail.com','Chicago','IL',022365);

insert into Client values ('ID02','Mike', 'King','Boston common' ,8907334790 ,0349067123,'mike123@gmail.com','Boston','MA',02218);

insert into Client values ('ID04','Josh', 'Duhamal','Boylston' ,5012345678 ,0123908768,'mike123@gmail.com','Boston','MA',02219);

insert into Client values ('ID05','Mike', 'King','Boston common' ,6012346890 ,0899067155,'mike123@gmail.com','Boston','MA',02290);



**STOCK DECISION:**

DDL Create:

create table STOCK\_DECISION (

Parameter\_Value int NOT NULL,

Stock\_Name varchar(20),

Ticker\_symbol varchar(10) NOT NULL PRIMARY KEY,

Cat\_Id varchar(10) NOT NULL,

Risk varchar(10),

Brand\_value varchar(10),

Investment varchar(10),

current\_value int NOT NULL);

DDL Insert:

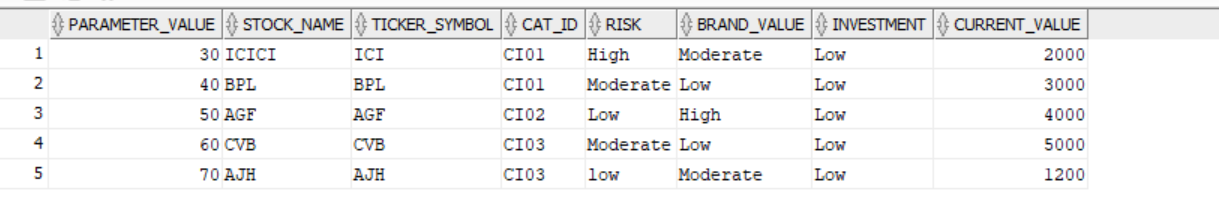
insert into STOCK\_DECISION values (30, 'ICICI', 'ICI', 'CI01', 'High', 'Moderate', 'Low' , 2000);

insert into STOCK\_DECISION values (40, 'BPL', 'BPL', 'CI01', 'Moderate', 'Low', 'Low' , 3000);

insert into STOCK\_DECISION values (50, 'AGF', 'AGF', 'CI02', 'Low', 'High', 'Low' , 4000);

insert into STOCK\_DECISION values (60, 'CVB', 'CVB', 'CI03', 'Moderate', 'Low', 'Low' , 5000);

insert into STOCK\_DECISION values (70, 'AJH', 'AJH', 'CI03', 'low', 'Moderate', 'Low' , 1200);



**Strategy Category:**

DDL Create:

create table Strategy\_Category (

Client\_ID VARCHAR(10) NOT NULL ,

Cat\_ID Varchar(10) NOT NULL ,

Strategy\_ID Varchar(10) NOT NULL ,

Brand\_Value Varchar(25) NOT NULL ,

Investment Varchar(25) NOT NULL ,

Parameter\_Value int NOT NULL )

DDL Insert:

insert into Strategy\_Category values ('ID01','CI01', 'S01', 'Moderate', 'Low' ,30);

insert into Strategy\_Category values ('ID01','CI03', 'S02', 'High', 'Low',30);

insert into Strategy\_Category values ('ID02','CI01', 'S03', 'Low', 'Low' ,30);

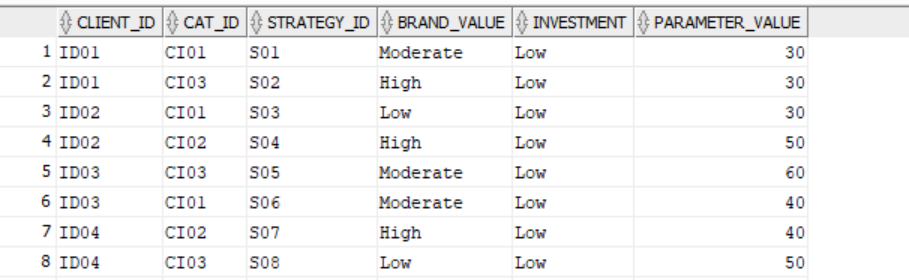
insert into Strategy\_Category values ('ID02','CI02', 'S04', 'High', 'Low',50);

insert into Strategy\_Category values ('ID03','CI03', 'S05', 'Moderate', 'Low',60);

insert into Strategy\_Category values ('ID03','CI01', 'S06', 'Moderate', 'Low' ,40);

insert into Strategy\_Category values ('ID04','CI02', 'S07', 'High', 'Low',40);

insert into Strategy\_Category values ('ID04','CI03', 'S08', 'Low', 'Low' ,50);



**Client Category:**

DDL Create:

create table Client\_Category (

Client\_ID VARCHAR(10) NOT NULL ,

Cat\_ID VARCHAR(10) NOT NULL ,

Brokerage\_Rate int NOT NULL)

**DDL Insert:**

insert into Client\_Category values ('ID01','CI01', 1000) ;

insert into Client\_Category values ('ID01','CI03', 1000) ;

insert into Client\_Category values ('ID02','CI01', 1000) ;

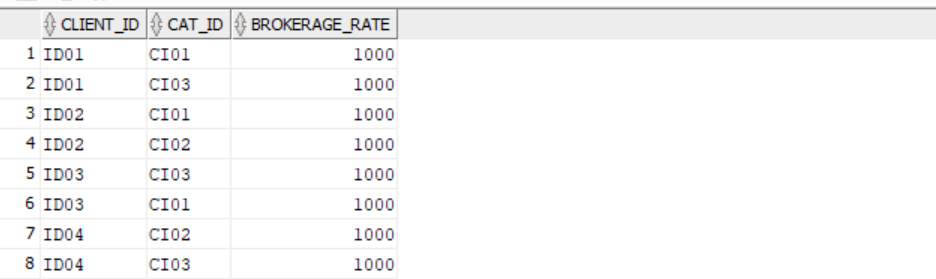
insert into Client\_Category values ('ID02','CI02', 1000) ;

insert into Client\_Category values ('ID03','CI03', 1000) ;

insert into Client\_Category values ('ID03','CI01', 1000) ;

insert into Client\_Category values ('ID04','CI02', 1000) ;

insert into Client\_Category values ('ID04','CI03', 1000) ;



**Client stock match:**

**DDL Create:**

create table client\_stock\_match (

Match\_id int not null PRIMARY KEY,

MATCHID varchar(15),

Client\_ID varchar(10),

Strategy\_ID varchar(10),

Parameter\_Value int NOT NULL,

Stock\_Name varchar(20),

Ticker\_symbol varchar(10) NOT NULL ,

Cat\_Id varchar(10) NOT NULL,

Risk varchar(10),

Brand\_value varchar(10),

Investment varchar(10),

current\_value int NOT NULL);

**DDL Insert:**

insert into client\_stock\_match

values(1,'M01','ID01','S01',30,'ICICI','ICI','CI01','High','Moderate','Low',2000);

insert into client\_stock\_match

values(2,'M02','ID02','S03',40,'BPL','BPL','CI01','Moderate','Moderate','Low',3000);

insert into client\_stock\_match

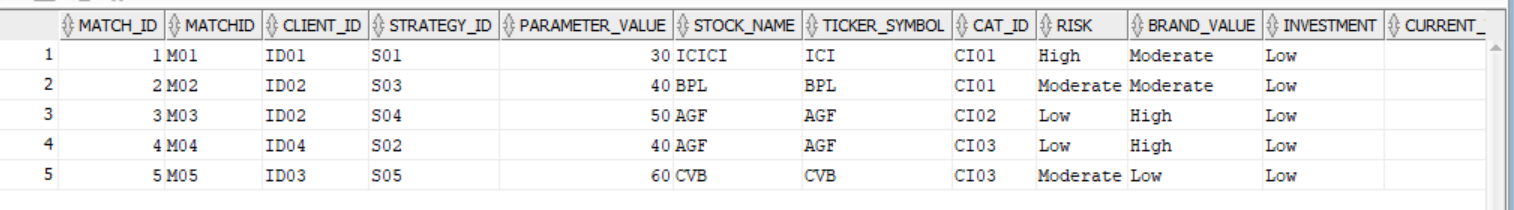
values(3,'M03','ID02','S04',50,'AGF','AGF','CI02','Low','High','Low',3000);

insert into client\_stock\_match

values(4,'M04','ID04','S02',40,'AGF','AGF','CI03','Low','High','Low',5000);

insert into client\_stock\_match

values(5,'M05','ID03','S05',60,'CVB','CVB','CI03','Moderate','Low','Low',6000);



**Client\_Stock\_Proposal**

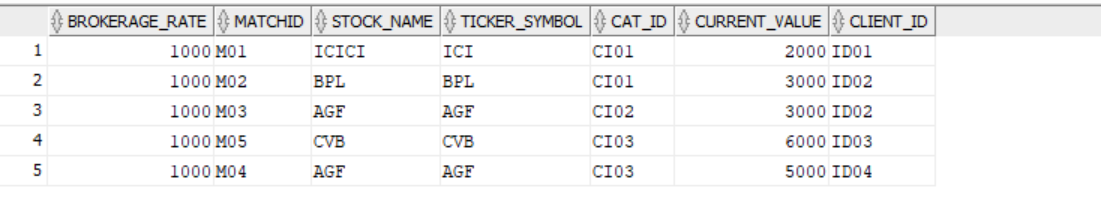
**DDL Create:**

Create table Client\_Stock\_Proposal as

(select CC.Brokerage\_Rate, CS.MATCHID, CS.Stock\_Name, CS.Ticker\_symbol, CS.Cat\_Id, CS.Current\_value, CS.Client\_Id

from client\_stock\_match CS inner join Client\_Category CC

on CC.Client\_Id = CS.Client\_Id and CS.Cat\_Id = CC.Cat\_Id);



**PROPOSAL\_STATUS**

**DDL Create:**

create table PROPOSAL\_STATUS (

TRANS\_ID VARCHAR(10) PRIMARY KEY,

MATCH\_ID VARCHAR(3),

NOOFSTOCKS NUMBER(4),

STATUS VARCHAR(6),

TRANS\_DATE DATE DEFAULT SYSDATE,

CONSTRAINT CHECK\_STATUS CHECK(STATUS IN('ACCEPT','REJECT')));

**DDL Insert:**

insert into proposal\_status values('T01','M01',5,'ACCEPT',SYSDATE);

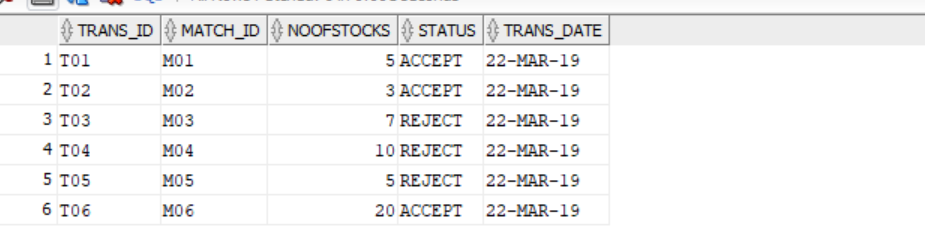
insert into proposal\_status values('T02','M02',3,'ACCEPT',SYSDATE);

insert into proposal\_status values('T03','M03',7,'REJECT',SYSDATE);

insert into proposal\_status values('T04','M04',10,'REJECT',SYSDATE);

insert into proposal\_status values('T05','M05',5,'REJECT',SYSDATE);

insert into proposal\_status values('T06','M06',20,'ACCEPT',SYSDATE);



**TRANSACTION HEADER**

**DDL Create:**

create table TRANS\_HEADER AS(

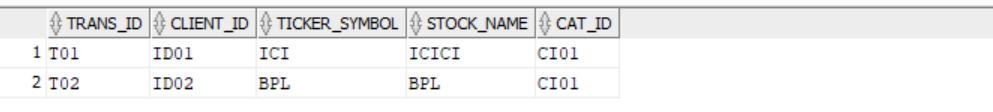
select p.TRANS\_ID,c.client\_id,c.Ticker\_Symbol,c.Stock\_Name,c.Cat\_ID

from Client\_Stock\_Proposal c

inner join PROPOSAL\_STATUS p

on p.MATCH\_ID=c.MATCHID

and p.STATUS='ACCEPT');



**TRANSACTION DETAILS**

**DDL Create:**  
create table TRANS\_DETAIL AS(

select p.TRANS\_ID,c.Ticker\_Symbol,c.Stock\_Name,c.Cat\_ID,p.NOOFSTOCKS,c.current\_value,c.brokerage\_rate,p.TRANS\_DATE

from Client\_Stock\_Proposal c

inner join PROPOSAL\_STATUS p

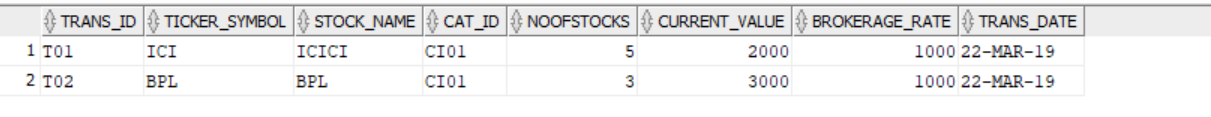
on p.MATCH\_ID=c.MATCHID

inner join TRANS\_HEADER t

on t.client\_id = c.client\_id

and p.STATUS='ACCEPT'

);



**TRANSACTION DELETION**

**DDL Create:**

create table TRANS\_DELETION AS(

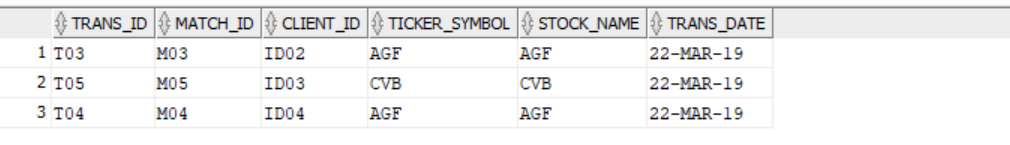
select p.TRANS\_ID,p.MATCH\_ID,c.client\_id,c.Ticker\_Symbol,c.Stock\_Name,p.TRANS\_DATE

from Client\_Stock\_Proposal c

inner join PROPOSAL\_STATUS p

on p.MATCH\_ID=c.MATCHID

and p.STATUS='REJECT');



**PROFIT**

**DDL Create:**

create table PROFIT(

PROFIT\_ID VARCHAR(10) PRIMARY KEY,

CLIENT\_ID VARCHAR(10) NOT NULL,

TRANS\_ID VARCHAR(10),

TICKER\_SYMBOL VARCHAR(10) NOT NULL,

STOCK\_NAME VARCHAR(20) NOT NULL,

CAT\_ID VARCHAR(10) NOT NULL,

NOOFSTOCK NUMBER(4) NOT NULL,

PROFIT\_AMT FLOAT NOT NULL,

BROKERAGE\_RATE NUMBER(5) NOT NULL

);

**DDL Insert:**

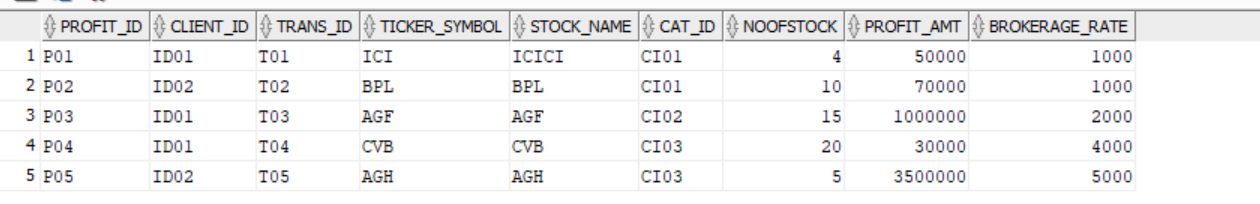
INSERT INTO PROFIT VALUES('P01','ID01','T01','ICI','ICICI','CI01',4,50000,1000);

insert into PROFIT values('P02','ID02','T02','BPL','BPL','CI01',10,70000,1000);

insert into PROFIT values('P03','ID01','T03','AGF','AGF','CI02',15,1000000,2000);

insert into PROFIT values('P04','ID01','T04','CVB','CVB','CI03',20,30000,4000);

insert into PROFIT values('P05','ID02','T05','AGH','AGH','CI03',5,3500000,5000);



**Stock\_Parameter**

**DDL Create:**

create table Stock\_Parameter(

Ticker\_Symbol varchar(10) PRIMARY KEY,

Cat\_ID varchar(10) NOT NULL,

News int NOT NULL,

Dividends\_Announced int NOT NULL,

Product\_Release int NOT NULL,

New\_Contract int NOT NULL,

Employee\_Layoff int NOT NULL,

Takeover int NOT NULL,

Mgmt\_Changes int NOT NULL,

Scandals int NOT NULL,

EPS int NOT NULL,

PE\_ratio int NOT NULL,

Exchange\_rate int NOT NULL);

**DDL Insert:**

insert into Stock\_Parameter

values('ICI','CI01',4,6,6,12,10,14,17,15,5,7,4);

insert into Stock\_Parameter

values('BPL','CI02',6,4,6,10,12,16,15,10,10,4,7);

insert into Stock\_Parameter

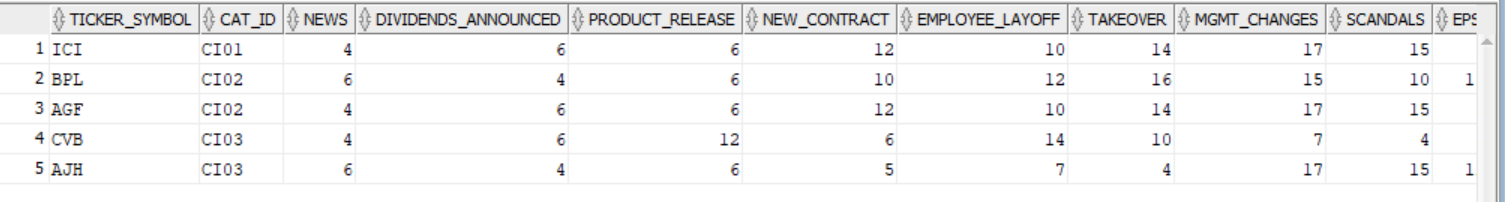
values('AGF','CI02',4,6,6,12,10,14,17,15,5,7,4);

insert into Stock\_Parameter

values('CVB','CI03',4,6,12,6,14,10,7,4,5,15,5);

insert into Stock\_Parameter

values('AJH','CI03',6,4,6,5,7,4,17,15,12,10,14);



**Client Portfolio**

**DDL Create:**

create table client\_portf(

Client\_Id varchar(10) NOT NULL,

Category\_Name varchar(25) NOT NULL,

Cat\_ID Varchar(10) NOT NULL

);

**DDL Insert:**

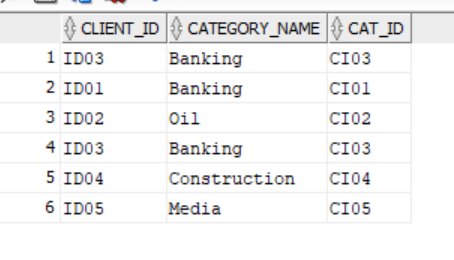
insert into Client\_portf values ('ID01','Banking','CI01');

insert into Client\_portf values ('ID02','Oil','CI02');

insert into Client\_portf values ('ID03','Banking','CI03');

insert into Client\_portf values ('ID04','Construction','CI04');

insert into Client\_portf values ('ID05','Media', 'CI05');



**Category**

**DDL Create:**

create table Category(

Cat\_ID varchar(10) PRIMARY KEY,

Category\_Name varchar(25) NOT NULL,

Brokerage\_Rate int NOT NULL);

**DDL Insert:**

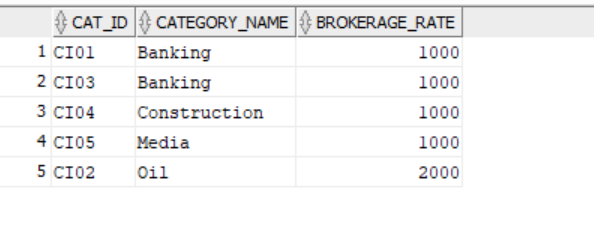
insert into Category values ('CI01','Banking',1000);

insert into Category values ('CI02','Oil',2000);

insert into Category values ('CI03','Banking',5000);

insert into Category values ('CI04','Construction',7000);

insert into Category values ('CI05','Media',8000);



**Client Category**

**DDL Create:**

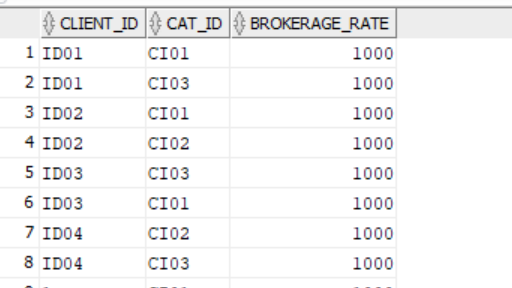
create table Client\_Category as

(select p.Client\_Id,c.Brokerage\_Rate,p.Cat\_ID

from Client\_portf p

inner join Category c

on p.Cat\_ID=c.Cat\_ID);



**Stock\_Parameter**

**DDL Create:**

create table Stock\_Parameter(

Ticker\_Symbol varchar(10) PRIMARY KEY,

Cat\_ID varchar(10) NOT NULL,

News int NOT NULL,

Dividends\_Announced int NOT NULL,

Product\_Release int NOT NULL,

New\_Contract int NOT NULL,

Employee\_Layoff int NOT NULL,

Takeover int NOT NULL,

Mgmt\_Changes int NOT NULL,

Scandals int NOT NULL,

EPS int NOT NULL,

PE\_ratio int NOT NULL,

Exchange\_rate int NOT NULL);

**DDL Insert:**

insert into Stock\_Parameter

values('ICI','CI01',4,6,6,12,10,14,17,15,5,7,4);

insert into Stock\_Parameter

values('BPL','CI02',6,4,6,10,12,16,15,10,10,4,7);

insert into Stock\_Parameter

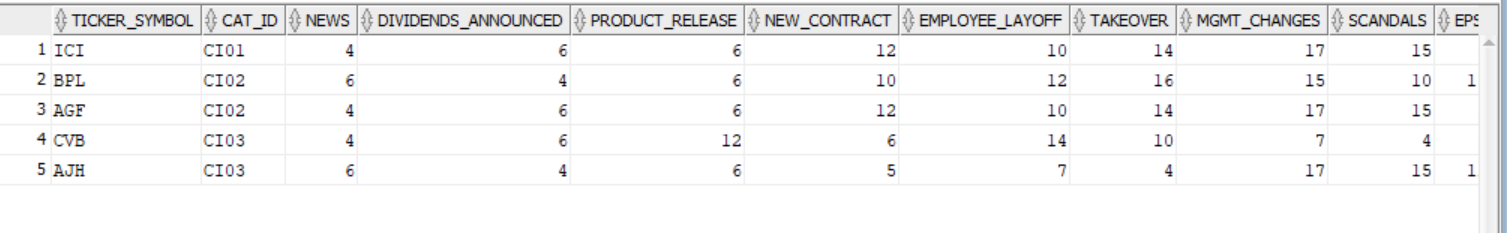
values('AGF','CI02',4,6,6,12,10,14,17,15,5,7,4);

insert into Stock\_Parameter

values('CVB','CI03',4,6,12,6,14,10,7,4,5,15,5);

insert into Stock\_Parameter

values('AJH','CI03',6,4,6,5,7,4,17,15,12,10,14);



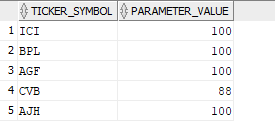
**Evaluation**

**DDL Create:**

create table evaluation as

(select Ticker\_Symbol, (News+Dividends\_Announced+Product\_Release+New\_Contract+Employee\_Layoff+Takeover+Mgmt\_Changes+Scandals+EPS+PE\_Ratio+Exchange\_Rate)as Parameter\_Value

from Stock\_Parameter);



**Client Portfolio**

**DDL Create:**

create table client\_portf(

Client\_Id varchar(10) NOT NULL,

Category\_Name varchar(25) NOT NULL,

Cat\_ID Varchar(10) NOT NULL

);

**DDL Insert:**

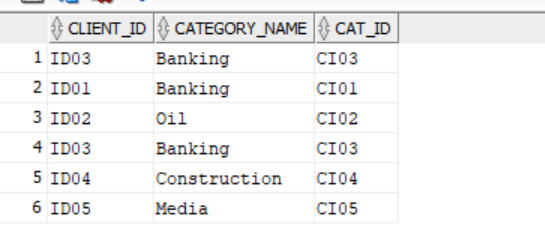
insert into Client\_portf values ('ID01','Banking','CI01');

insert into Client\_portf values ('ID02','Oil','CI02');

insert into Client\_portf values ('ID03','Banking','CI03');

insert into Client\_portf values ('ID04','Construction','CI04');

insert into Client\_portf values ('ID05','Media', 'CI05');



**Category**

**DDL Create:**

create table Category(

Cat\_ID varchar(10) PRIMARY KEY,

Category\_Name varchar(25) NOT NULL,

Brokerage\_Rate int NOT NULL);

**DDL Insert:**

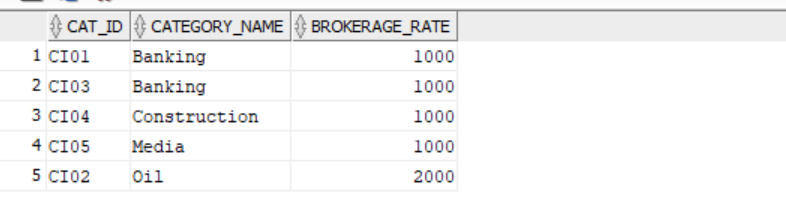
insert into Category values ('CI01','Banking',1000);

insert into Category values ('CI02','Oil',2000);

insert into Category values ('CI03','Banking',5000);

insert into Category values ('CI04','Construction',7000);

insert into Category values ('CI05','Media',8000);



**Client\_Category**

**DDL Create:**

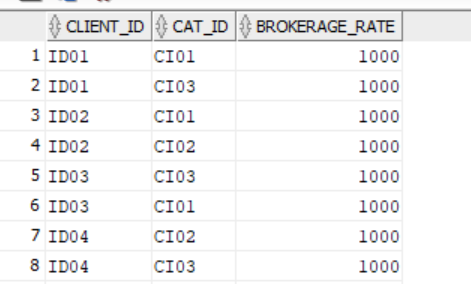
create table Client\_Category as

(select p.Client\_Id,c.Brokerage\_Rate,p.Cat\_ID

from Client\_portf p

inner join Category c

on p.Cat\_ID=c.Cat\_ID);

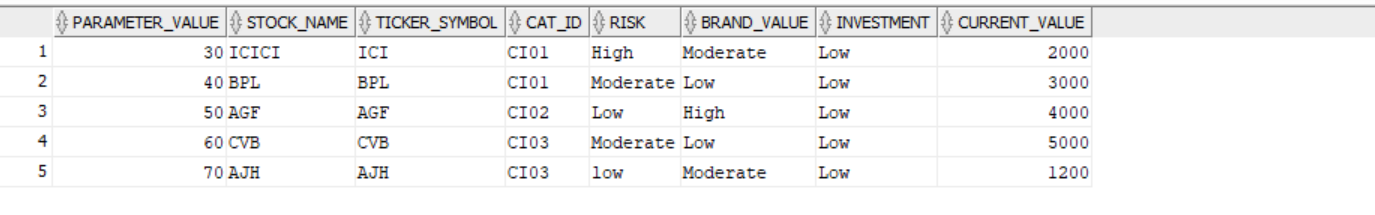


**Stock Decision**

**DDL Create:**

create table STOCK\_DECISION as (SELECT Rownum as Dec\_ID, e.parameter\_value,S.\* FROM STOCK S

inner join evaluation E on E.ticker\_symbol = S.ticker\_symbol) ;



**STOCK**

**DDL Create:**

create table STOCK (

Stock\_Name varchar(20),

Ticker\_symbol varchar(10) NOT NULL PRIMARY KEY,

Cat\_Id varchar(15) NOT NULL,

Risk varchar(10),

Brand\_value varchar(10),

Investment varchar(10),

current\_value int NOT NULL)

**DDL Insert:**

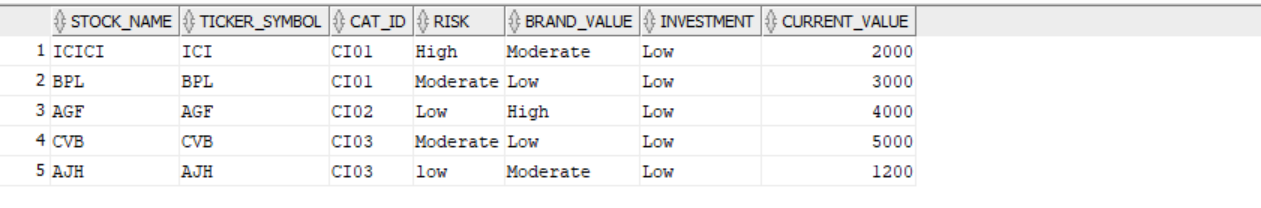
insert into STOCK values ('ICICI', 'ICI', 'CI01', 'High', 'Moderate', 'Low' , 2000);

insert into STOCK values ('BPL', 'BPL', 'CI01', 'Moderate', 'Low', 'Low' , 3000);

insert into STOCK values ('AGF', 'AGF', 'CI02', 'Low', 'High', 'Low' , 4000);

insert into STOCK values ('CVB', 'CVB', 'CI03', 'Moderate', 'Low', 'Low' , 5000);

insert into STOCK values ('AJH', 'AJH', 'CI03', 'low', 'Moderate', 'Low' , 1200);



**Strategy\_Category**

**DDL Create:**

create table Strategy\_Category (

Client\_ID int NOT NULL ,

Cat\_ID Varchar(25) NOT NULL ,

Strategy\_ID Varchar2(25) NOT NULL ,

Brand\_Value Varchar(25) NOT NULL ,

Investment Varchar(25) NOT NULL ,

Parameter\_Value int NOT NULL )

**DDL Insert:**

insert into Strategy\_Category values (01,'CI01', 'S01', 'Moderate', 'Low' ,30);

insert into Strategy\_Category values (01,'CI03', 'S02', 'High', 'Low',30);

insert into Strategy\_Category values (02,'CI01', 'S03', 'Low', 'Low' ,30

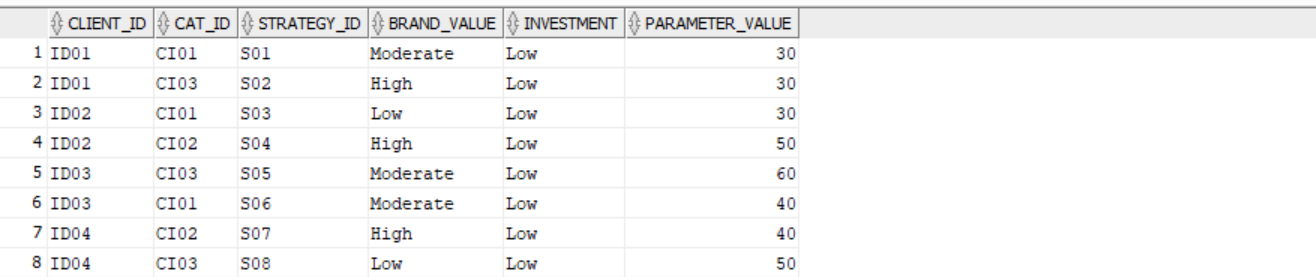
insert into Strategy\_Category values (02,'CI02', 'S04', 'High', 'Low',50);

insert into Strategy\_Category values (03,'CI03', 'S05', 'Moderate', 'Low',60);

insert into Strategy\_Category values (03,'CI01', 'S06', 'Moderate', 'Low' ,40);

insert into Strategy\_Category values (04,'CI02', 'S07', 'High', 'Low',40);

insert into Strategy\_Category values (04,'CI03', 'S08', 'Low', 'Low' ,50);



**Client\_Category**

**DDL Create:**

create table Client\_Category (

Client\_ID int NOT NULL ,

Cat\_ID Varchar(25) NOT NULL ,

Brokerage\_Rate int NOT NULL)

**DDL Insert:**

insert into Client\_Category values (01,'CI01', 1000) ;

insert into Client\_Category values (01,'CI03', 1000) ;

insert into Client\_Category values (02,'CI01', 1000) ;

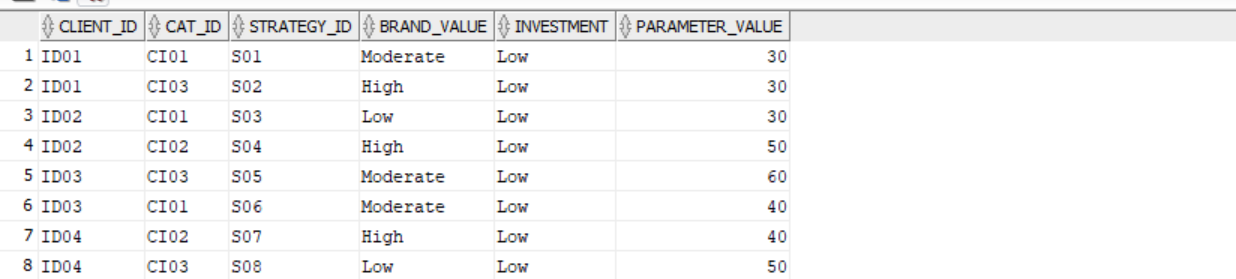
insert into Client\_Category values (02,'CI02', 1000) ;

insert into Client\_Category values (03,'CI03', 1000) ;

insert into Client\_Category values (03,'CI01', 1000) ;

insert into Client\_Category values (04,'CI02', 1000) ;

insert into Client\_Category values (04,'CI03', 1000) ;



**Citations:**

* https://www.w3schools.com/sql/
* https://www.geeksforgeeks.org/structured-query-language/
* https://www.tutorialspoint.com/sql/sql-select-query.htm