In the following sample queries, perl-style variable names are substituted for values supplied by the user/program logic, even when those values are inserted using positional binding
$netID is the database users's username, and $StockPrefix is the prefix for class databases

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-- DQL

Valid login
SELECT COUNT(*) FROM $netID.users WHERE email = $email AND password = $password AND
validation_code IS NULL

Average, standard deviation of DIA market index for finding beta
SELECT avg($field1), stddev($field1) FROM (SELECT $field1, timestamp, symbol FROM
cs339.stocksdaily UNION SELECT $field1, timestamp, symbol FROM $netID.newstocksdaily) WHERE
symbol=rpad('DIA', 16)

Average, standard deviation of stock whose beta is to be found
SELECT count(*),avg($field1),stddev($field1) from (SELECT $field1 FROM $StockPrefix StocksDaily l
where symbol='$s1' and l.timestamp>=$from and l.timestamp<=$to UNION SELECT $field1 FROM
$netID.newstocksdaily r WHERE symbol='$s1' and r.timestamp>=$from and r.timestamp<=$to )

Covariance of stock against market index
SELECT avg((l.$field1 - $mean_f1)*(r.$field1 - $mean)) from (SELECT $field1, timestamp, symbol
FROM $StockPrefix.StocksDaily UNION SELECT $field1, timestamp, symbol FROM $netID.newstocksdaily)
l join (SELECT $field1, timestamp FROM $StockPrefix StocksDaily WHERE symbol='DIA' UNION SELECT
$field1, timestamp FROM $netID.newstocksdaily WHERE symbol='DIA') r on  l.timestamp=r.timestamp
where l.symbol='$s1' and l.timestamp>= $from and l.timestamp<= $to

Coefficient of variation of stock
SELECT stddev($field) / avg($field) FROM (SELECT $field FROM ".GetStockPrefix()."StocksDaily WHERE
symbol='$symbol' AND timestamp>=$from AND timestamp<=$to UNION  SELECT $field FROM
$netID.newstocksdaily WHERE symbol='$symbol' AND timestamp>=$from AND timestamp<=$to )

Averages, standard deviations of stocks for covariance
SELECT count(*),avg(l.$field1),stddev(l.$field1),avg(r.$field2),stddev(r.$field2) from (SELECT
$field1, timestamp, symbol FROM $StockPrefix.StocksDaily UNION SELECT $field1, timestamp, symbol
FROM $netID.newstocksdaily ) l join (SELECT $field2, timestamp, symbol FROM
$StockPrefix.StocksDaily  UNION SELECT $field2, timestamp, symbol FROM $netID.newstocksdaily ) r
on l.timestamp= r.timestamp where l.symbol='$s1' and r.symbol='$s2' and l.timestamp>=$from and
l.timestamp<=$to

Covariance of two stocks
SELECT avg((l.$field1 - $mean_f1)*(r.$field2 - $mean_f2)) from $StockPrefix StocksDaily l join
$StockPrefix StocksDaily r on l.timestamp=r.timestamp where l.symbol='$s1' and r.symbol='$s2' and
l.timestamp>= $from and l.timestamp<= $to"

Select given fields (in $joinedFields, where $joinedInnerFields always
includes timestamp) of stock information
SELECT $joinedFields FROM (select $joinedInnerFields from $StockPrefix StocksDaily where symbol =
'$symbol' and timestamp >= $from and timestamp <= $to UNION SELECT $joinedInnerFields FROM
$netID.newstocksdaily where symbol = '$symbol' and timestamp >= $from and timestamp <= $to) order
by timestamp

Select all portfolios for a given user
SELECT id, name, cashccount FROM $netID.portfolios WHERE owner = $currentUser

Get data for a stock over a specific range
SELECT timestamp, close FROM $StockPrefix StocksDaily WHERE symbol=$symbol AND timestamp BETWEEN
$start AND $end UNION SELECT timestamp, close FROM $netID.newstocksdaily WHERE symbol=$symbol AND
timestamp BETWEEN $start AND $end
```

```
Get all holdings in a particular portfolio
SELECT stock, numShares FROM $netID.holdings WHERE portfolioID = $portID

Get name and cash account value of a portfolio
SELECT name, cashAccount FROM $netID.portfolios where id = $portID

Get list of all stocks, for quote.pl called by quote_daemon
SELECT DISTINCT stock FROM $netID.holdings

Get number of shares of a stock
SELECT numShares FROM $netID.holdings WHERE portfolioID = $portID AND stock = rpad($symbol, 16)

-- DML

Remove portfolio
DELETE FROM $netID.portfolios WHERE id = $portID

Add new portfolio (trigger creates unique id)
INSERT INTO $netID.portfolios (name, owner, cashAccount) VALUES ($name, $currentUser, 0)

Confirm/activate user (user may only log in when validation code is null)
UPDATE $netID.users SET validation_code=NULL WHERE validation_code = $key

Deposit money
UPDATE $netID.portfolios SET cashAccount = cashAccount + $amount WHERE id = $portID

Withdraw money
UPDATE $netID.portfolios SET cashAccount = cashAccount - $amount WHERE id = $portID

Add new stock data
INSERT INTO $netID.newstocksdaily (symbol, timestamp, high, low, close, open, volume)
VALUES($symbol, $timestamp, $high, $low, $close, $open, $volume)

Sell all of currently owned stock
DELETE FROM $netID.holdings WHERE portfolioID = $portID AND stock = $stock

Buy more or sell some (not all) of a stock holding
UPDATE $netID.holdings SET numShares = numShares + $numShares WHERE portfolioID = $portID AND
stock = rpad(?, 16)

Buy previously unowned stock
INSERT INTO $netID.holdings (portfolioID, stock, numShares) VALUES ($portID, $stock, $numShares)
```