This task is part of a much larger research project I commenced in 2014 to investigate equity (share) trading strategies. Data were obtained for ASX stocks covering the period 2000 to 2013 and stored and processed using Microsoft SQL Server. This data includes company financials (i.e. annual financial statement data), and market-based data (i.e. derived from ASX data such as price, volume, shares outstanding etc.). **In this task I compute financial ratios and other 'signals' (i.e. independent variables or features) and store them in (two) tables suitable for use in later tasks** in the research project, which

- match these observations with subsequent stock returns (dependant variables or targets)
- search for profitable trading strategies using simple sorting procedures
- search for profitable trading strategies using linear programming optimisation
- allow for variations in research design via a dashboard-type application
- search for profitable trading strategies using machine-learning algorithms

The company (annual) financial data are stored in the table "Financials" as per the following schema:

column_name	data_type	is_nullable
ID	Int	NO
StockID	Int	NO
ReportType	nvarchar	NO
ReportMonth	Int	NO
ReportYear	Int	NO
Item	nvarchar	NO
ItemValue	Float	YES

For the purposes of (demonstrating) this project, I am only interested in rows where "Item" is one of the following: EBITDA, Market Cap., Net Financing Cashflows, Net Investing Cashflows, Net Operating Cashflows, PER, Price/Book Value, Total Assets, Total Equity, Total Liabilities

I then calculate a series of ratios based on these items. For any given firm, these ratios correspond to (are calculated as at) the end of the financial reporting period. Consequently, there is only one set of data points per firm per year – on the ASX most (but by no means all) of the data points correspond to a financial year end of June 30.

Other ratios are based purely on ASX "market" data which is available on a daily basis. These ratios ("LIQ", "MCR" and "MOM") were calculated separately, with the calculations omitted for brevity. The data are stored in the tables "LIQ", "MCR" and "MOM6" respectively, each of which has the following schema:

column_name	data_type	is_nullable
StockID	int	NO
PriceDate	datetime	NO
ItemValue	float	YES

Only the month-end values of the market-based ratios are retained. Each stock therefore has (a maximum of) 12 market-based data points each year, compared with 1 data point per year for the financial ratio data points.

The financial ratios (1 data point per year) are then compiled into the "outputTable" table, with schema as follows:

column_name	data_type	is_nullable
StockID	int	NO
ReportMonth	int	NO
ReportYear	int	NO
B_P	decimal	YES
E_P	decimal	YES
ROE	decimal	YES
D_A	decimal	YES
CFO_A	decimal	YES
CFI_A	decimal	YES
CFF_A	decimal	YES
EBITDA_EV	decimal	YES

The market-based ratios (1 data point per month) are compiled into the "outputTable_MktBased" table, with schema as follows:

column_name	data_type	is_nullable
StockID	int	NO
monthEnd	datetime	NO
MOM	decimal	YES
LIQ	decimal	YES
MCR	decimal	YES

In the process, use is also made of the "monthEndDates" tables with schema as follows:

column_name	data_type	is_nullable
Month_	int	NO
Year_	int	NO
monthEnd	datetime	NO

Additional info: companies are identified in the table "Companylist" as per the following schema:

column_name	data_type	is_nullable
StockId	int	NO
ASXCode	nvarchar	YES
CompanyName	nvarchar	YES
ListingDate	datetime	YES
DelistingDate	datetime	YES

But this table is not used in this task.