HowToStock

A Stock prediction tool using Bayesian network

Nondescript
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Introduction

One of the hardest challenges that traders face when entering a new position (handling a new stock) is choosing the right strategy to maximize their potential profits.

Stock trading is a very flexible form of investment, and it's possible to profit from several different outlooks over above simply expecting a financial instrument to rise or fall in price. However, in order to do so a trader must choose an appropriate trading strategy and this isn't always an obvious choice. Also, analysing generic stock movement with company's performance can be a tedious process.

There isn't necessarily always a right decision in any given circumstance; there are strategies, though, that are particularly suitable for certain outlooks.

This system provides a tool to help you decide a trading strategy by self-assessing stock's future outlook as well as the general stock movement. To use the tool, you simply need to feed the information you know about underlying asset (here: company's stock you want to trade on) *and it suggests you whether you should buy or sell the stock for the best profit result.*

Background Theory and Knowledge Base

Few of the factors that can determine a general stock movement are:

1. Inflation or Deflation in country
2. Derivative use (Such as futures, forwards, options etc.)

Which, depend on several factors addressed in the network.

The factors that are taken into consideration for Company specific position are:

1. Company's historical trends
2. announcement of dividends
3. introduction of a new product
4. securing a new large contract
5. anticipated takeover or merger
6. a change of management i.e. a new CEO

To study **historical trends** of the company, there are various technical indicators used by traders to make buy and sell decisions. This system uses four indicators for decision making process: **Moving Average Convergence/Divergence (MACD), Relative Strength Index (RSI), Stochastic Oscillator (SO) and On-Balance Volume (OBV)**. The four indicators are:

1. Moving Average Convergence/Divergence : [https://en.wikipedia.org/wiki/MACD]
    - Used to identify moving averages that are indicating a new trend, whether it's bullish or bearish.
    - Depends on exponential moving average of the finalised stock price (i.e. close price).
2. Relative Strength Index (RSI) : [https://en.wikipedia.org/wiki/Relative_strength_index]
    - Used to indicate temporary overbought (bought more than you should implying a need to sell) or oversold (sold more than you should implying a need to buy) conditions in a market.
3. Stochastic Oscillator (SO) : [https://en.wikipedia.org/wiki/Stochastic_oscillator]
    - Used as a technical indicator of stock price momentum used to compare closing price to range of price over a given period of time.
4. On-Balance Volume (OBV) : [https://en.wikipedia.org/wiki/On-balance_volume]
    - Used to measure buying and selling pressure as a cumulative indicator that adds volume on stock-up days and subtracts volume on stock-down days.

User Manual

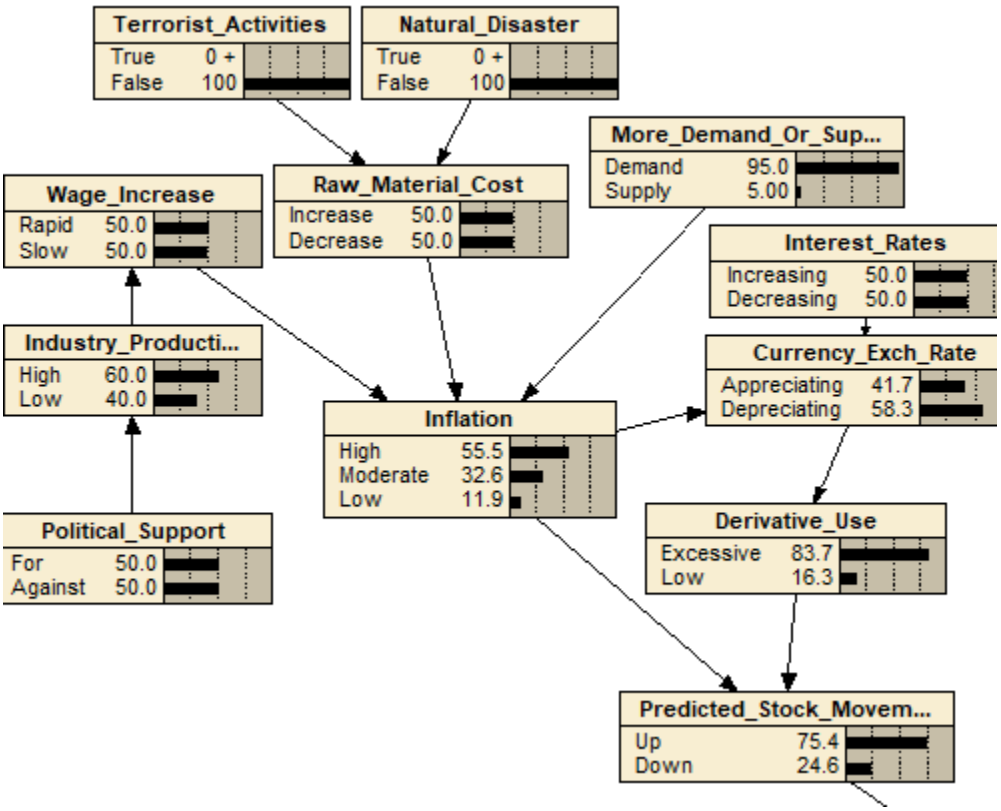
Instructions:

1. Copy the file StockPredictor.dne in any location and open the file in Netica

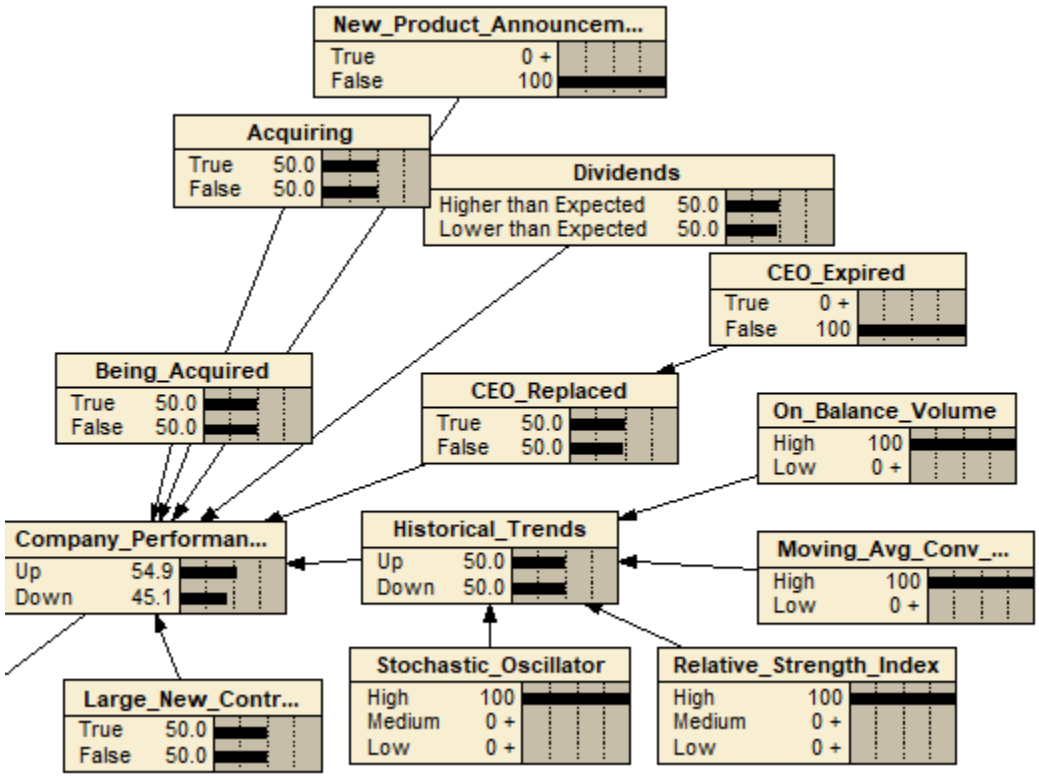
2. Compile the network

3. Input values by clicking on all the root nodes to see the changes flowing through the Bayesian Network

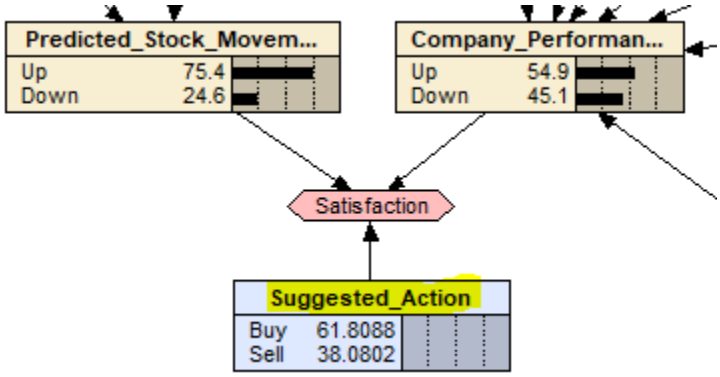
    a. Make changes in these for the overall stock movement:



    b. Make changes in these nodes for the company you want to start a new position in:

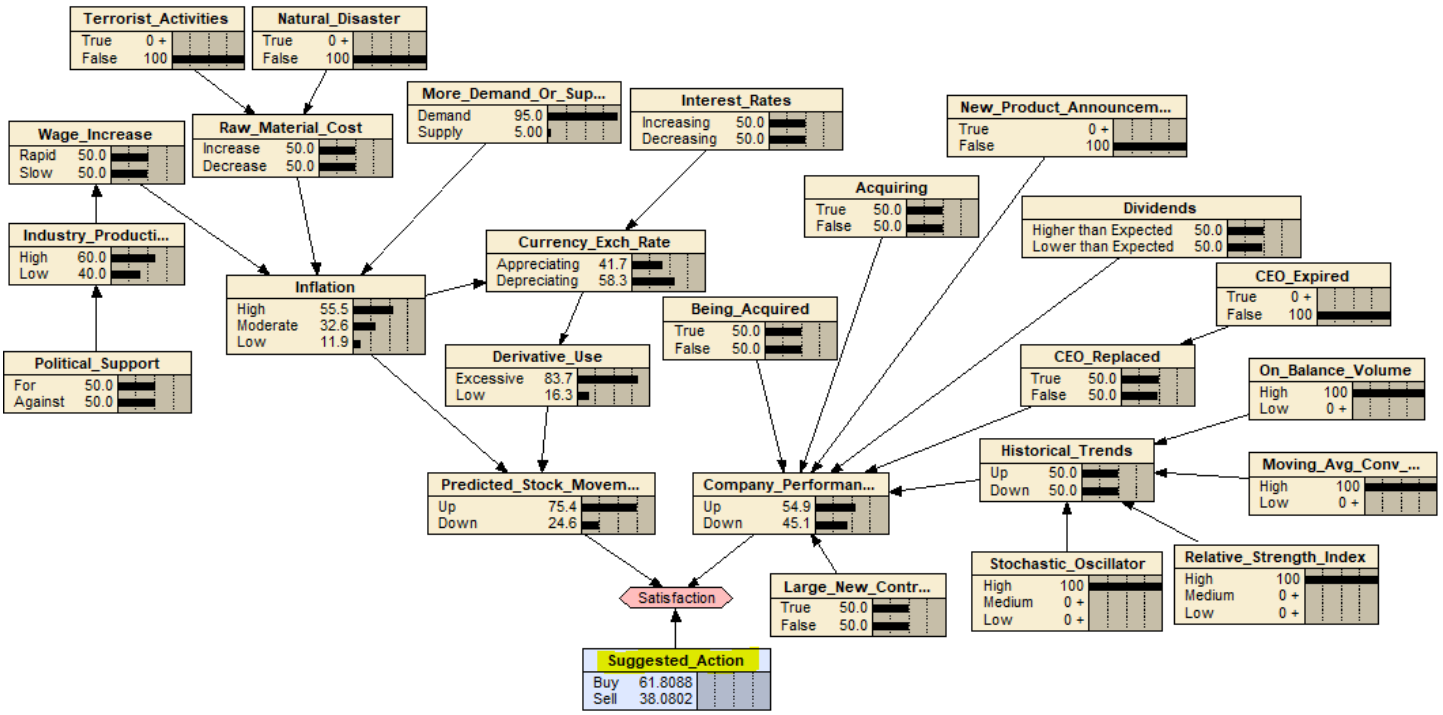


4. Suggested decision to buy or sell the particular company's stock is reflected in the decision node as shown below:



Results

Here is the sample output:



User enters the known information about the financial situation and Company (s)he wants prediction on. System weighs the several probabilities and gives its probabilistic decision whether the user should sell or buy the particular company's stock.