Projects from Speed Trading

Contact: Brent Starck, email: brent@speedtradinggroup.com

Pricing Model for Asian Equity Index Options

Speed Trading has a proprietary option pricing model which they are trying to apply to some foreign markets. The model works reasonably well for near the money options but not for outlying strikes. Can you take the proprietary model and make it work for valuing these different markets properly? Also, they will be adding some enhancements to be discussed. The ability to derive a complete understanding of the model from its code is essential.

Momentum Indicator for Trading

Develop a momentum indicator for trading. Your model will help in making the following types of decisions: (a) Delay or accelerate a trade in the underlying stock when the motive is to hedge an options position, and (b) When to initiate a trade, in the stock or options on a stock.

Risk Management System for Brokerage Business

Develop a risk management system that looks into the risk of the portfolio of holdings of a client rather than each position individually. The system should help the broker to monitor all customer activity and positions in real time. It would be necessary to do a correlation analysis in real time, identify the risk in the position, determine what the margin should be using an algorithm, and advice the client and the broker if a margin call is likely. The system should be sophisticated enough to recognize that when a customer puts a limit order, say a bid at below the market, it will be executed with some probability and use it to calculate margin requirements. The system will also have to take option positions into account for risk management purposes.