SENG3011 Project

- The project will build on last week's lecture on financial markets
- The common theme will be *algorithmic trading*
- The use of computer programs for entering trading orders with the computer algorithm deciding on aspects of the order such as:
  - the timing,
  - price, or
  - quantity of the order,
  - initiating the order without human intervention

Introduction

- Algorithmic Trading is widely used by institutional traders, to divide large trades into several smaller trades in order to manage market impact, and risk.
- Sell side traders, such as market makers and some hedge funds, provide liquidity to the market, generating and executing orders automatically.

High Frequency Trading

- High frequency trading (HFT) is characterized by:
  - HFT is highly quantitative, employing computerized algorithms to analyse incoming market data and implement proprietary trading strategies;
  - HFT usually implies a firm holds an investment position only for very brief periods of time and rapidly trades into and out of those positions, sometimes thousands or tens of thousands of times a day;
  - HFT firms typically end a trading day with no net investment position in the securities they trade;
  - HFT operations are usually found in proprietary firms or on proprietary trading desks in larger, diversified firms;
  - HFT strategies are usually very sensitive to the processing speed of markets and of their own access to the market.
- By 2010 High Frequency Trading accounted for over 70% of equity trades taking place in the US .

Project scope

- The project will be a simplification of HFT
- Will be using ASX data from Sirca to simulate a market
- System to be developped referred to as Algorithmic Trading System (ATS)
- Initial ATAS spec on course Web site

Schedule

- Project organised in 4 sprints
  - Week 6: a working structure
  - Week 8: a simple strategy
  - Week 10: public demo
  - Week 12: final demo
- Managing requirements
  - No complete spec given
  - Ambiguities must be resolved with customer
  - Ability to innovate / improve

Initial choices for getting working structure

- Req 3: 2 algorithmic orders (1 buy followed by 1 sell) are entered at predetermined times, their price would be that of “closest” real order in time
- Req 4: each algorithmic order is turned into an algorithmic trade
- Req 5: payoff is Price(sell)-Price(buy)

Actions

- Form teams now
  - 3-4 members like before
  - “Teamless” students should let me know
- Using AE system
  - Each team should get login/password
  - See demo notes on Web site
- Read about algorithmic trading
  - http://en.wikipedia.org/wiki/Algorithmic_trading
  - More links will be provided on course web site