Artificial Stock Market (ASM)

http://ArtStkMkt.sourceforge.net. Code snapshots, CVS access, and general information

http://lark.cc.ukans.edu/~pauljohn/ResearchPapers/Presentations/SDG_ASM01/presentation.html. Notes for the presentation "Teaching and Learning with Swarm"

Model Objectives: The artificial stock market model was originally proposed by R.G. Palmer, W. Brian Arthur, John H. Holland, Blake LeBaron, and Paul Taylor ("Artificial economic life: a simple model of a stock market." *Physica D* 75: 264-274 (1994). The agents buy and sell stock on the basis of their expectations, which may depend on both economic conditions (fundamentals) and perceived market conditions, such as trends in stock prices. The agents can pick and choose among indicators they will use when they decide to buy or sell. A major goal is to understand the aggregate implications of a model which describes many myopic agents who individually adjust their behavior and interact through a market mechanism.

The model was originally written in Objective C for the Next OS by Palmer, et. al. The code was revised and made public as ASM-2.0. That version runs under Swarm-1.0. Paul Johnson has revised the code for Swarm-2.x and to take advantage of Swarm's collections library and data output facilities.

Software: The ASM code is available in Objective C.

As a tutorial exercise in simulation modeling and computer programming, the ASM code base has some particular strengths. One can compare the code as written in C without Swarm against a more object-oriented set of code that uses the Swarm libraries. A number of features are particularly noteworthy:

Object-orientation: Hide implementation of details on forecasts and "bits" behind a consistent, easy-to-understand interface.

Data Input: Store default parameter values in separate files, create objects which can access them.

Collections: Replace low-level memory allocation and pointer math with Swarm collections and indexes (iterators).