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WHAT'S NEW ---
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HOW QUICKMONEY WILL FIND
 A SUPERIOR SOLUTION

QUICKMONEY® will optimize with greater efficiency Page 1

In pursuit of profits, all trading system developers that we have seen in today's market adopt the approach of varying all combinations (or a contiguous subset of all combinations) of parameters to produce a level of simulated profit. The number of choices to be examined for many systems is often formidable and could easily consume more computer resources than a Cray could supply.

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In recent News Journals we introduced the concept of gradient climbing, a modified form of partial differentiation (actually, partial differencing would be a more descriptive label) to achieve an optimization objective. Such a concept is valuable because of its speed in finding viable solutions. Since customers have asked us to explain this concept, we thought a simple analogy might help.

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Imagine the analogy of profit and loss to the earth's terrain above and below sea level. Allow high mountains to represent large profits and let deep oceans represent large losses. This will help to explain the idea.

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A computer program (or linear equation) with three or more independent variables that influence simulated profit deals with a multi-dimensional surface that cannot be visualized. To make the analogy realistic, assume the earth's terrain also cannot be visualized. This makes the problem of mapping the earth's terrain conceptually similar.

Suppose a terrain map maker, who is blind, could jump around the earth randomly and make altitude measurements wherever he lands. His primary objective is to find a high mountain with a minimum of hops or steps.

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Before attempting to solve this problem, it may be helpful to compute the number of points on earth that one might conceivably visit if the earth were subdivided into one mile by one mile squares. The number of square miles on earth, if my equation for the area of a sphere is correct ($\pi^2 r^2$), is approximately 700,000,000. If we subdivide the earth into tenth of a mile squares, the number of squares to be sampled would rise to 70 billion.

The gradient approach we have suggested in previous News Journals uses an intelligent searching procedure which would vary selected coordinate locations on earth at random and then attempt to walk up or down grades in the terrain by taking increasingly larger or smaller steps as required. If a sloping hill or valley is found, the map maker would take small steps in multiple azimuths in search of higher and higher altitudes. Using feedback logic that can logically detect that a decrease in altitude may be reversed by stepping small distances in the opposite direction may make possible the successful search of a high mountain. This procedure, when approached systematically, can reveal the better solution in far less steps than the combinatorial approach normally employed by brute force computer optimization methods.

It is possible by using such a method that a workable solution may be found in, perhaps 50 to 200 trails in place of the more than 70 billion possibilities. The gradient method may not find Mt. Everest, but it may easily find the Rockies, Appalachians or Himlayas. The gradient method can learn from the terrain by skipping from hill to hill and stepping to the top. In contrast, the combinatorial approach could easily spend all your available computer time on the midwest plains with little performance to justify the time-consuming effort of the search.

The gradient technique is an often neglected Operations Research tool that can manage many parameters in different forms. Variables can be integers, continuous variables, and logical or procedural components. QUICKMONEY will make full use of such methodology to save you time, trouble, and money. We look forward to exposing you to it soon.

ATTENTION FOREIGN USERS

Effective with our April 1st invoicing all non-Australian foreign users will no longer receive a foreign discount. This position was made necessary due to the rapid drop in the exchange value of the dollar relevant to most currencies. This will impose an approximate increase in price of 10 to 20 percent.

REMINDER :

The PC version of QUICKSTUDY now allows a price difference oscillator of any two fields loaded in memory. Previously, the open, high, low, close and moving averages were the only fields allowed for the difference oscillator. The most obvious use for this is a MACD-SIGNAL line, but now any study result can be subtracted from any other study result.

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