situations that can arise. That takes work, but if a clerk of ten years experience can do it, so can a good systems analyst do it and then translate it into a computer program.

Second, we equip the program with an evaluating function such as in a computer program that plays chess. In other words, in situations where different degrees of desirability attach to different courses of action relative to a purpose, the computer is given a subroutine that weighs factors and makes decisions. This also takes work, but if a chess-playing program can do it, so also can other programs. To modify instructions in the light of purposes is not hard, provided we take the trouble to express the evaluating function in a computer program.

Of course a computer cannot regularly observe or perceive all of the environment – any more than a blind man can. But we do not expect the same kind or degree of common sense from a blind man as we expect from a sighted person.

We can properly expect a very high degree of many kinds of common sense from well-worked-out computer programs.

Edmund C. Berkeley

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Editor

Note: An expanded discussion of "What is Common Sense?" and how different organisms apply it constitutes Issue No. 24 in *The C&A Notebook on Common Sense, Elementary and Advanced.* See the announcement on page 2.

C.a PROBLEM CORNER

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Problem 7110: Operation Search

"Here's a really far-out search procedure", said Pete. "Don't know why they want it, but ours not to reason why, etc."

"How does it work?" asked Al.

"Well, the program is supposed to be looking for a certain number. It starts with 1, then adds 2, the 4, and so on, doubling the amount added at every point as long as the sum is less than the number it's looking for."

"Sooner or later it will reach a number bigger than the target number. What does it do then?"

"Actually if the number is of the form $2^n - 1$ the machine will reach it directly by addition", said Pete. "For other numbers it starts subtracting half the last number used and continues doubling and adding or halving and subtracting depending on whether the number it's after is more or less than the current number."

"How can the machine tell when the number has been found?"

"The machine is able to compare two numbers, deciding whether one is less than, equal to or greater than another. It stops when it finds the two are the same."

Al looked a little puzzled. "I'm still a little confused", he said. "How would it go about finding the number 6, for example?"

"It would go $1 + 2 + 4 - 2 + 4 - 2 - 1$ so that seven operations would be necessary."

"How many operations would be necessary for a number in general?"

Solution to Problem 719: Messages in Math?

Of the 63 possible two-digit endings of cubes, only 00, 17, 25, 41, 37, 57 and 97 yield admissible endings for squares when 41 (the last two digits of 1971^2) is subtracted. Additional restrictions on the hundred's digits of squares and cubes allow us to reduce these possibilities further until we find $1971^2 + 1430^2 = 181^3$.

Readers are invited to submit problems (and their solutions) for publication in this column to: Problem Editor, Computers and Automation, 815 Washington St., Newtonville, Mass. 02160.