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**A Repeated Measures Analysis of Variance
Program for a Design with N Factors.** *Chris
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Description: This ALGOL 60 program prints up, in standard form, the complete summary table of a multifactorial analysis of variance with repeated measures. It makes use of three previously published algorithms from the *Communications of the ACM*. These are number 209 Gauss, number 330 Factorial Anova, and number 346 *F-test* Probabilities. F values are calculated irrespective of the significance of higher order interactions and without pooling.

Multidimensional arrays are simulated using one-dimensional arrays. This method, together with the feature of ALGOL allowing dynamic array bounds, provides a program which has no limitations in terms of number of factors or levels per factor other than that imposed by the size of the computer core store. The program assumes a complete, balanced design with equal cell frequencies.

A pseudo variable corresponding to the experimental unit is defined. This will usually correspond to the variable subjects and becomes the $(b + 1)$ th factor where there are b between or repeated measures variables. The first b factors are the between variables and the last w factors are the within variables where w is their number. Each factor, including the pseudo one, is assigned a user-defined three-character code name which is then employed in the summary table to identify the appropriate sums of squares, degrees of freedom, mean square estimates and F values.

Availability: This program has been run on an I.C.L. 4/50, a similar machine to the RCA Spectra 40/75. A source listing together with print-outs of sample data and results is available on request from Chris N. French, Psychology