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# Terminal Talk - The Wofford Connection - January 1970

Wofford College Computer Center

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# TEMINAL TALK

January 1970

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## - THE WOFFORD CONNECTION -

Wofford College Computer Center

Spartanburg, South Carolina

### NEW PROGRAMS

Dr. Dana Quade, Dept. of Biostatistics, UNC, has supplied listings of the following new programs:

MANTL\* performs the Mantel-Haenszel procedure for obtaining a summary of relative risk, and testing its significance, given a series of 2x2 tables.

CFTDIS is intended to replace all tabulations of the chi-square, t, and F distributions, both central and non-central, with both integral and fractional degrees of freedom, both direct and inverse. It may be used for cases not covered in available tables.

Further information is on file in the Computer Center.

### MORE PROGRAMS

The students in Interim Projects 10 and 46 have furnished the Computer Center with the following sets of programs which they wrote in an attempt to provide some useful programs for Wofford. Documentation and tape copies are on file in the Center.

ACTIVE calculates either the activity or molar concentration on any ion in solution, given the other factor.

CHI $\uparrow$  2+ Given the two alleles and distribution of the f2 generation, this program computes the frequency of alleles, genotypes, expected numbers, the chi-square and the probability that the observed distribution is due to chance.

CONACD determines the concentration of all the species in an aqueous solution of any acid with one to four charges on the completely unprotonated conjugate base.

DEPRE computes the depreciation by sum-of-digits and/or declining balance method.

GASSIM simulates real and ideal gas es based on Van der Waals equation and the ideal gas equation. Pressure, five different volumes, and two different temperatures are calculated, for both ideal and real situations.

GENET1 provides all possible genotypes in a genetic cross which considers up to five characters, any of which may be sex-linked.

HETCAT calculates the heat capacity of solids when user supplies Debye temperature and the temperature of interest. Integration is by use of the Monte Carlo method, the user supplying the number of iterations.

INFOCA calculates a series of chemical formulae given the percent composition in the compound. It is limited to those compounds containing carbon, hydrogen, oxygen, nitrogen, and/or sulphur.

MACRO1 demonstrates a series of increasingly complex economic models. The user determines parameters of marginal propensity to consume and changes in the level of consumption, investment, government expenditures, taxes, and net exports.

PAYROL performs payroll functions, including all withholdings, taxes, Social Security, etc.

PROCOS aids in the study of effective use of professorial manpower, taking into account course load, number of hours preparation, administrative work, and several other factors.

QTES\*\* performs Q-test calculations (3 to 10 data readings on the same experiment), giving three confidence levels with which data may be rejected on the basis of experimental error. It performs a chi-square test if more data is available.

TITRA1 and TITRA2 form a computer simulation of weak and strong acid titrations. The former program uses GRAPH\*; the latter prints a table.

WCRN1 and WCRN11 analyze responses to a questionnaire of listener attitudes and then prints a suggested format and schedule for an entire week, taking into consideration the opinions and preferences of the listeners.