

COGNITION: A program for the presentation of several tests of cognitive function using the Hewlett-Packard 85 computer

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COGNITION, the program described here, includes several tests of cognitive functioning. The user may select any or all of the available tests from a menu. The program is currently being used on the Hewlett-Packard 85 microcomputer, which is lightweight and extremely portable. The system has a built-in CRT, printer, and tape-storage system. It is ideal for experiments that require portable equipment which may be taken to the research subjects rather than vice-versa. This computer and the described subroutines have been used to test cognitive functions of submariners during submarine patrols.

Description. The program is written as a set of independent modules. After loading the program and initializing date, time, and subject information, the user may select from five different tests, which include short-term memory, choice reaction time, timed mental arithmetic, digit symbol substitution, and mental rotation tasks. The number of stimulus presentations for each can easily be varied. The program is extremely easy to use: after one

session, all of our subjects have been able to repeat test sessions without additional aid from the experimenter.

Input. After the program has loaded, the experimenter initializes the date and the real-time clock. Thereafter, each subject must enter a name, age, and sex before proceeding with the actual tests.

Output. At the completion of any of the tests, a copy of the subject's test results is printed. The exact nature of this output varies with the specific test chosen but, in general, includes the name of the test and either mean time or number of stimuli correct and the standard deviation of the value. The subject's personal information, the date, and any variable information, such as presentation time (mental arithmetic), are included on the printout.

Language and Computer. The program was written for a Hewlett-Packard 85 computer. As written, the program also uses the Advanced Programming ROM, and the Input/Output ROM. These ROMs permit the use of additional features, such as locking out the keyboard. In general, however, the program is written in BASIC, and most of the programs can be easily modified to run on other systems.

Availability. Documentation and listings of the programs are available from the authors. We have access to both 5¼-in. and 8-in. floppy disk drives, and we are willing to reproduce the program on floppy disk or Hewlett-Packard cassettes if the media is included with the request.

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