Welcome to your Life as a Programmer in 1970

(As lived at NCR Ltd. in London) Please ask questions during the talk in 1970 terminology.

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Topics ======

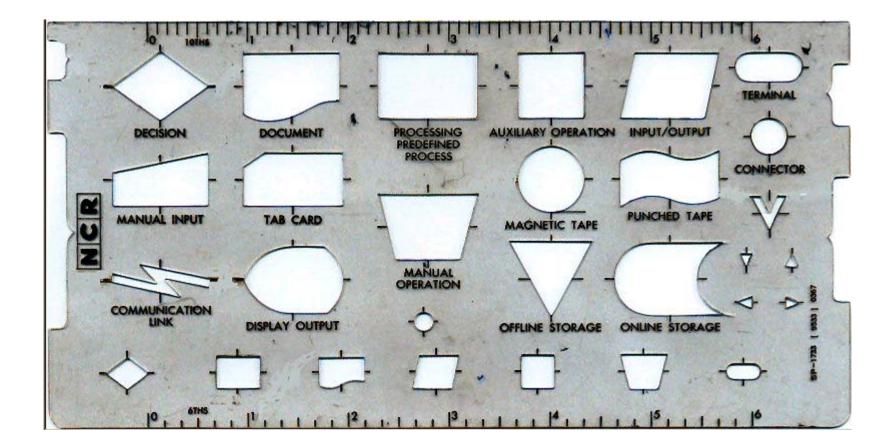
- * Communications
- * Program design tools
- * Program implementation
- * Computer access
- * Disk pack and drive care
- * Computer operations tips

One-to-One, or to Few, Communications

- * Telephone Effective and cheap within England. Less useful for talking to people in Dayton, because of cost and time zone issues.
- * Inter-office mail envelope works well within building, and to other NCR offices.
- * Telex Effective and cheap delivery of short text messages anywhere within a few hours. Mark "urgent" if it really is urgent, to get faster delivery.
- * First Class Letter Next day delivery in England. A few days for delivery to USA.
- * Packages are <u>not</u> airmail, unless marked. Airmail requires additional postage. International non-airmail packages can take weeks.

One-to-Many Communications

- * Short content: Write a memo. Fill out the memo form clearly. Take it to the typing pool. Proof read and mark corrections on the copy. Repeat the last two steps until it is correct. Initial by your name to indicate it is ready to send. Return to the typing pool for copying and distribution. * Long content, such as documents for review: Attach a routing slip listing recipients, and give it to the first person on the list. When you get a routed document, review promptly, cross off your name, and pass to anyone who has not yet seen it. If you are the last reviewer, return it to
 - the originator.



Go To Statement Considered Harmful

- * Recent letter to the editor of Communications of the ACM, from Edsger W. Dijkstra. (March 1968)
- * Highly controversial.

Some groups have started applying these ideas, others think extensive use of GOTO is essential for writing sufficiently compact and efficient code.

- * Groups following Dijkstra's ideas tend to use more pseudo-code and less flow charts.
- * There is a utility to generate a line printer flow chart from a NEAT/3 program.

Use this if you are not depending on flow charts for design, but management requires a flow chart on file.

CODING WORKSHEET



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Punch Cards - Keypunch Service

- * Large key punch jobs should be turned in at the computer room office.
- * Coding sheet pads for commonly used card layouts are in the office supplies cabinets in each department. If you cannot find one you need, ask your group secretary to order it.
- * Use a soft pencil, so that you can erase without leaving an indentation.
- * Write clear block capitals using one column for each character. A punctuation mark such as "," is a character.
- * Cross the digit "0" and put serifs on the letter "I", or other consistent, clear, stated convention.

Typing your own Punch Cards

- * Key punch machines in the computer room and other locations
- * Use for reasonably small numbers of cards
- * A customized drum card will save time if you need to type multiple cards in the same format.

Announcing the world's most advanced new family of computers.

NCR

The NCR Century Series.

Never before so much performance at so low a cost. Computer Access

* Computer room on first floor.

NCR Century 100 16 KB and 32 KB

All releasable software must be tested on 16 KB configuration unless there is permission to release with a larger required memory size. Note that only 13.5 KB is available for user programs.

NCR Century 200 - Big machine, more memory, more hardware instructions.

- * Book week in advance form in computer room office
- * To get smaller, more frequent, slots work with one or two other programmers to share an allocation.
- * No smoking, food, or drink in the computer room.
- * Always step on the sticky mat on the way in.



Care of Disk Packs and Drives

- * Disk packs are big, heavy, but very delicate
- * The disk drive's read-write heads float over the disk pack's surfaces, riding on the boundary layer, with a gap smaller than the diameter of a human hair.
- * If any problem, such as failure to read data, mark both the <u>pack</u> and the <u>drive</u> "do not use" and inform computer operations immediately.
- * Packs must not be mounted unless at stable computer room temperature.
 - Allow enough time, overnight is best, between bringing a pack into the computer room and using it.Absolute minimum time depends on how long the pack was outside the computer room environment and the conditions to which it was exposed - consult computer operations.
- * Unmount the disk pack before powering off the drive.

Computer Operation Tips

- * Power up processor, then peripheral controllers, then peripherals.
- * Power down in the reverse order do not just switch off at the wall.
- * Be careful printing. A line printer driven by a program in a page feed loop is scary.
- * When booting, always use a date card or tape with the correct date. The computer will believe you, and date files and printouts accordingly.
- * If all else fails, power off completely, count to ten, and then power up again.

Back to the 21st. Century

Images courtesy of THE CORE MEMORY, http://www.thecorememory.com