

The Computer Revolution

Learn now or be branded "computer illiterate." It isn't as hard as it looks.

In the last 30 years there has been a revolution in data processing that is as important as the industrial revolution. In 1950 there was only one computer in the United States; now one in ten jobs is in the computer industry and the computer has invaded nearly every field of endeavor.

The first computer was the ENIAC, designed and built at the University of Pennsylvania by Remington Rand between 1939 and 1946. It weighed 31 tons, enveloped 3,000 cubic feet and was based on vacuum tubes. It cost \$2.5 million. Now hand-held computers can store thousands of integrated circuits on a single chip.

Mini computers have become popular in education, science and industry, but the biggest market is in business. The most popular use by business is word processing, which is the preparation of printed text using a micro-computer. Text can be entered at a video screen and edited before it is printed. Letters and forms can be stored in the computer memory and printed repeatedly with changes of names and other information.

The hobby computer was marketed in 1975 with overwhelming acceptance. The personal computer is available in the \$500 range and has a myriad of uses other than to play video games — income taxes and personal finance, household automation, computer-aided education, etc.

By 1990, computers will be found in 25 percent of all homes. Many people in high school now will own a personal computer, will know a computer language and will use computers in their work.

The data processing field has turned into a huge industry. The employment section of any metropolitan daily has more jobs under "Programmer" than any other category. There are also ads under Systems Analyst, Data Control Clerk, Operator, Project Leader — all dealing with computers. Another lucrative field is computer sales.

The basic concept of every computer is: input, processing and output. The program records the data, performs some calculation or operation on it, and reports the results. During the processing phase, computer operations include sorting, selecting, summarizing, calculating, counting, deciding and editing.

On the first computers, instructions had to be entered one at a time by the operator, which was time-consuming. Now a series of instructions making up the program can be stored in the computer's memory. The computer can select one instruction at a time and perform the desired operation.

Originally, programs were written in machine language, but this was too complicated so new languages were developed. Today most programs are written in COBAL, FORTRAN, BASIC, PRG, GICS or BAL.

The programmer codes the specifications provided by the Systems Analyst into the most suitable language, compiles and tests the program.

Systems Analyst

The Systems Analyst is the architect. He designs the systems that will store, process and report the information needed.

The problems Systems Analysts solve vary from monitoring nuclear physics to forecasting sales. Because the work is varied and complex, analysts usually specialize in business or scientific and engineering applications.

Analysts usually have BA's or advanced degrees. Business employers usually want persons with backgrounds in accounting, business, or economics while scientifically oriented organizations want a background in physical or biological sciences, engineering, or mathematics. An increasing number of employers prefer a degree in computer science. Most Analysts have several years' experience in programming.

Employment of Systems Analysts is expected to increase faster than average occupations in the 1980's, particularly in accounting firms and companies doing research and development.

Programmers

Most programmers are college graduates, but others have taken special courses in community colleges. Employers using computers in science and engineering prefer college graduates with degrees in math, science or engineering. Employers who use computers for business applications do not require college degrees, but prefer persons with backgrounds in data processing, accounting and business.

Employers look for people who can think logically, are analytical and are good with details. The job calls for patience, persistence and extreme accuracy.

Computer Operator

Information is entered into computers in a variety of ways. **Keypunch operators** punch patterns in computer cards. **Data typists** use special machines to type holes in cards or magnetic impulses on tapes or discs. Newer systems have keyboards that enter information directly in the computer electronically.

Console Operators monitor and control the computer. **High-speed printer operators** and **card-tape-converter operators** run auxiliary equipment. **Tape librarians** classify and catalogue material and keep records.

Employers usually require a high school education and many prefer that console operators have some community college work. Beginners are usually trained on the job. Keypunch or auxiliary equipment operators



PHOTO: OMSI ACCENT

should be able to work under close supervision as part of a team. They must be comfortable working with machines and doing repetitive work. Console operators must use independent judgement.

Learn a programming language no matter what your career plans are today. It will be useful and will be a source of opportunity all of your life.

Computer classes

OMSI/OES

OMSI/Oregon Episcopal School will offer a two-week camp program for high school students in computers. The first week will use Atari and Apple computers to study the physics of music and the fundamentals of wave theory. During the second week subjects will include holography, word processing and computer techniques. A lab will feature several computers and languages. Students will be housed at Oregon Episcopal School and attend classes at OMSI.

OMSI

OMSI offers many summer computer classes for children beginning at Grade 1 and for adults. Among the classes offered are LOGO, BASIC, New Computer Things (Pascal, FORTH, LISP, LOGO), and science using computers as a tool. A special workshop for teachers is available. Call 222-1500 for information.

Portland Community College

Portland Community College offers a variety of credit and non-credit computer courses. Among these are television courses "Introduction to Computers: Making It Count" and "Computer Concepts in Society." Television courses are broadcast on KOAP-TV 10 and include an orientation class at the center. (244-6111). For PCC class and registration information call 244-6111.

YWCA COMPUTER CLASSES

YWCA computer classes are available this summer at the Downtown YWCA, St. Johns YWCA, Vancouver YWCA and Koll Business Center (Beaverton). At least one computer to each two students guarantees hands-on experience. Call 223-6281, ext. 217 for information.

BASIC Computer Programming: an introduction to computers and BASIC computer programming. Exposure to various applications of computers at home or in business. (4 sessions)

Computer Orientation: Introduction to computers, understanding of vocabulary. (1 session)

Word Processing: Step-by-step through word processing features; learn to edit, store and retrieve documents. Hands-on course with one person per computer. (4 sessions)

Computer Buying Guide: Learn about differences among brands of personal computers, compare capabilities and prices. (1 session)

Also contact Mt. Hood Community College and other community colleges and Portland State University.

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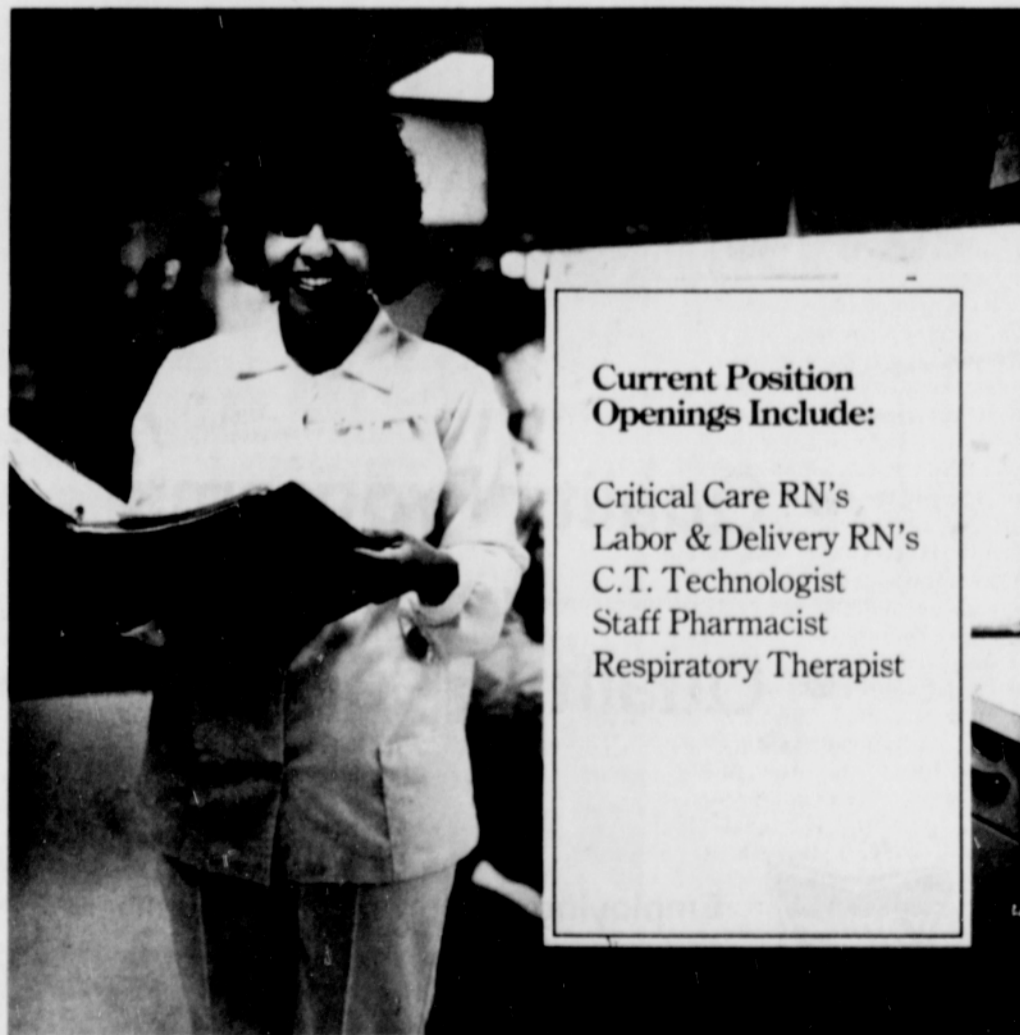
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