

COMPUTING ⁴²⁰

A quarterly publication highlighting special services
of the University of Minnesota Computer Center

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PSD: Computer Services for Researchers and Administrators

The Professional Services Division (PSD) of the University of Minnesota Computer Center was established in 1977 to aid researchers and administrators, both within the University and in the larger community, in using state-of-the-art computer technology to solve a wide variety of problems. The goal of the Division, as described in its mission statement, is to provide the University of Minnesota community with computer expertise for use in systems development, system analysis, programming, and training.

Since its inception, PSD has worked on projects that have ranged from programming instructional materials for a class in nutrition to planning a system for account posting and recording to writing a program to match the sorority house choices of prospective "rushees" to the houses that wanted them to join.

One of the more interesting and complex projects recently completed by the Professional Services Division was the development of a complete record keeping system for client information in a specialized program at a metropolitan area medical center. This project included the "translation" of a wide range of medical forms into computer code, the construction of an invoicing system, and the creation of a program to generate statistical information about client population. The original time estimate for this project was about two months.

Another recent project (and perhaps a more typical one) involved the simple tabulation and analysis of information from a questionnaire provided by the client. The project was completed on time and under the estimated cost.

The great majority of PSD clients consists of approximately equal numbers of University administrators and researchers—which is as it should be, since they are the people the Division was designed to serve. Other clients include agencies of the state, local, and federal governments, non-profit organizations, and other University Computer Center users.

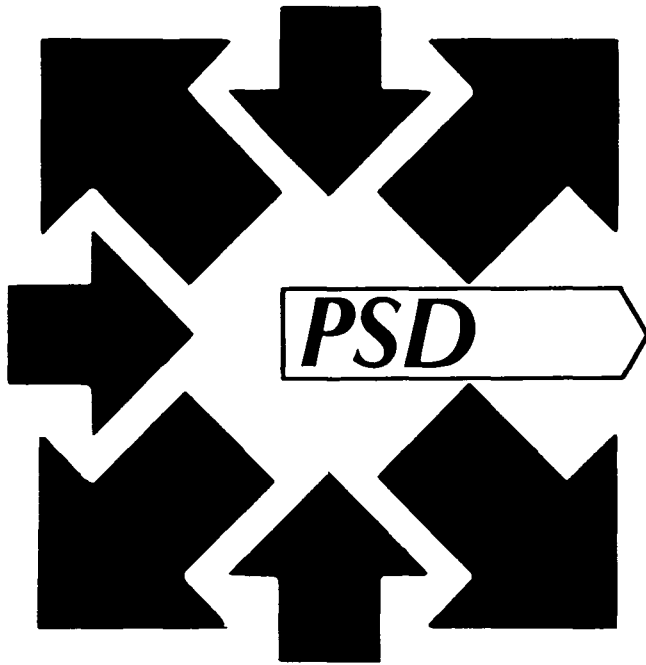
Most projects take one or two months to complete; but this is an average only and, depending on its relative simplicity or complexity, a project could take anywhere from an hour to six months.

Three types of project agreements can be written between PSD and its clients. The most common is the "fixed cost," in which the cost to the client and the goods and services provided by PSD are explicitly stated in the agreement. A "time and materials" agreement states the cost implicitly; the final cost is determined by the time and materials used in accomplishing the project plus a profit figure. Time and materials agreements are used when the client favors them or for projects of short duration. For projects longer than six months, the Professional Services Division has established a "retainer" agreement in which the costs to the client are explicitly stated in the agreement while specific goods and services are not.

A common error made by researchers and administrators when writing up grant proposals or designing projects that include computer services is to underestimate the cost of those services. While computer time and materials are relatively inexpensive in this age of runaway inflation (indeed, the entire microprocessing industry

EDITOR'S NOTE

Welcome to *Computing*, a quarterly publication of the University of Minnesota Computer Center (UCC). *Computing* is designed for people in upper-level management positions who are interested in the special services the University Computer Center can offer them. UCC's Professional Services Division is the subject of this issue: in the future, we will examine the different computer systems available at UCC, the work of other support groups (text processing, microcomputers, graphics), and the myriad ways in which UCC can provide you with computing services. We would appreciate any comments or suggestions you might have about *Computing*. Write to Editor, *Computing*, University Computer Center, University of Minnesota, 227 Experimental Engineering, 208 Union Street SE, Minneapolis, Minnesota 55455.



may be the only place in the world where things are getting less expensive as a result of technological advances), personnel costs are not. If you set up an agreement with PSD, you are hiring a group of well-qualified, experienced professionals—and the going rate for an information system specialist, for example, is about \$35 hour. The probability is that seventy-five or eighty percent of your project costs will be personnel-related; but hiring a *professional* staff that is familiar with the many aspects and possibilities of computing is never a mistake.

THE PSD STAFF

The Professional Services Division currently employs five full-time and five half-time staff members. The full-time employees include a manager, a system analyst, a system specialist, and two programmer analysts; the five half-time employees are experienced programmers. Their backgrounds are in computer science, statistics, management information systems, and business administration. Together, they have a total of over fifty years of experience in computing.

And as if that weren't enough, nearby are another 150 people—the staff of the University Computer Center—with additional skills and varying areas of expertise, on whom PSD can draw for assistance with their client projects. The University Computer Center support groups include image processing, text processing, graphics, microcomputing, data base management, and statistical services. If you have a problem you do not think of as a conventional one for a computer—something to do with graphic design perhaps, or a linguistic analysis of the poems of Emily Dickinson—call PSD! You may be pleasantly surprised.

The interests of current staff members at PSD include the design and programming of social/educational/medi-

cal research problems, projects, and systems within an academic environment; user support and education; business data processing; numerical analysis; and utility programs and software tools (programs to make programming easier, more interesting, or more nearly correct). This, of course, is only a small sampling of interests, and does not include the astonishing range of talents and abilities reflected in the makeup of the full UCC staff.

Computers today, including those at the University of Minnesota, are becoming progressively more "user friendly." They are no longer the domain of mysterious high priests who speak an incomprehensible language. Grade school kids play with them, business offices transfer their accounting systems to them, people at home keep tabs on family birthdays and bills or read newspapers from throughout the nation on them. The uses of the modern computer are many and varied; bring your problems to PSD and see what we can do for you.

HOW IT WORKS

Now that you're convinced that UCC's Professional Services Division has something to offer you, here's a short breakdown of how the process itself works.

You, PSD's prospective client, contact the Division to determine whether the project you have in mind is within its scope of business. Assuming that it is, a meeting or series of meetings is held to understand and interpret your project. Following these meetings, the Professional Services Division estimates the time and money needed to accomplish the project and presents the estimate for your review. If the estimate meets with your approval, an agreement describing the responsibilities of both you and PSD will be written and signed. These two first steps of the project are described as the "inquiry" and "definition" phases. No charge is made for inquiries or for the first day's work in the definition phase of a potential project. If the definition phase exceeds one work day, however, there is a charge.

After you review PSD's estimate and sign an agreement, the real work begins. Three major steps constitute the rest of the process: the design phase, the programming phase, and the acceptance phase. Here's what happens in each.

The system analyst, system specialist, or programmer analyst (or some combination of these staff members) prepares the documents necessary to develop your system. These include the design specifications (for example, a report layout, file layout, flowchart, etc.), data specifications giving the data collection procedure and the form used, and test specifications (the criteria for measuring system performance and completion). The system design is then approved by the PSD manager in consultation with you, the client.

The programming phase often includes two concurrent steps, the coding and documenting of the programs for the system and the collection of data to test the programs. The third step is the testing itself; the test specifications written during the design phase are performed and any needed changes are approved and made. The analyst in charge of your project supervises and assists the programmers throughout this phase.



Staff members of UCC's Professional Services Division include: (top, left to right) Pat Bland, Janet Eberhart, Christina Chang, Fernando Naveda (bottom, left to right) Dennis Lienke, Shih-Pau Yen, Phil Kachelmver. Not pictured: LeAnne Eickof, Bob Jarvis, Lu Qi

The final, acceptance, phase is initiated by the analyst, who prepares a demonstration script or plan to present the system to you. The script is approved by the PSD manager before the demonstration itself, the next step in the procedure. Once the system has been demonstrated, you and those who will be using your system are trained in its implementation. A "user manual"—a description of how to use the program—will have been prepared by the analyst for your use, and is subject to your approval. Once the system is installed, you will be asked to sign an acceptance agreement that indicates the completion of the work. The analyst completes a checklist from the final wrap-up of the project, which is subsequently approved by the manager. The manager then prepares an invoice in which you are billed for the goods and services used in the development of your system. And you, of course, pay the bill. Voila!

The tasks performed by the Professional Services Division range from simple to complex and, consequently, from inexpensive to expensive. Converting a

tape or program created on another system to UCC format is a fairly straightforward assignment, one that can be completed both quickly and inexpensively (the cost might range from \$25-\$500). More time consuming and complex projects, such as the development of special programs or data base set up, can cost as little as \$100 and as much as \$25,000; once again, it depends on the amount of data, the complexity of the programming, and other factors.

The Professional Services Division, however, has both the staff and the facilities to fulfill all (or nearly all) your computing needs. Please call and let them introduce you to the wonders and benefits of modern computing.

Professional Services Division

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Comments and suggestions about the content of this publication may be directed to the editor, 227 Experimental Engineering, or call 612/376-9832.

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