BCIT COMPUTER RESOURCES

Newsletter

87:03:02
VOLUME 5 NUMBER 3

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LETTER From The DIRECTOR

Information Technology at BCIT

Probably many of you are facing the daily struggle of coping with recalcitrant computers (obscure error messages, faulty cables, an instruction manual that is written in a language that purports to be English but is totally incomprehensible, etc). While I don't want to ignore these problems or diminish their difficulty, I would like to devote my first Letter from the Director to a wider topic -- Information Technology.

"Information Technology" may be a term new to many of our readers, and I would like to write a few words of explanation of why I believe the term and the concepts it attempts to convey are of vital importance to almost every organizational component of BCIT and to every student, instructor, and staff member.

Most of us have used the computer for its traditional purposes of intensive numerical computation in science and engineering: indeed, the very roots of the electronic digital computer are in these fields. However, the past few years have seen a remarkable convergence of two major technologies - computing and communications - which, used in non-traditional ways, are giving us all access to significantly new ways of running and enriching our lives. The desktop microcomputer coupled to a communications line leading to the "outside world" suddenly allows each of us to become a member of the much-heralded Information Society, with easy access to banking services, stock market data, computer conferences, library systems, electronic mail, airline reservations, entertainment, huge commercial databases, news reports, weather forecasts, etc., and gives us the ability to contribute to and influence that Society by making our voice heard in ways never dreamt of before.

The term "information technology" is an attempt to capture in one phrase the idea that computing and communications are converging into a brand new technology that transcends traditional computing (e.g. the processing of numerical data) and traditional communications (e.g. direct person-to-person voice contact). This new technology gives us profoundly new ways of storing, accessing, retrieving, manipulating and presenting information as unlimited combinations of text, graphics, moving images and sound, and in ways that we are only now starting to understand or exploit.

These same convergent technologies that are profoundly affecting the world about us are also appearing on our campus, and will certainly deeply influence the world into which we send our students.

In the classroom we can use this new technology to enrich the learning experience, to cater for the individual styles and needs of

each student; the faculty member can use information technology tools to aid him/her to teach, to allow students new ways to explore the world about them, to provide new ways of communicating with him/her and each other, and to stimulate new approaches to old and new problems.

Beyond the classroom, information technology is affecting BCIT's administrative, and research and development activities. Both as an institute and a nation we are challenged by falling budgets, scarce resources, increased complexity, reduced planning horizons, and a social and political environment changing at what appears to be an ever-increasing rate. The only way that we have any hope of coping with all of this is to exploit whatever new technologies will allow us to do. If we fail to rise to this challenge then our students will suffer, BCIT will suffer, British Columbia will suffer, and Canada will suffer.

We cannot afford to ignore these new technologies for our competitors will not, and they will exploit them to their commercial and industrial advantage -- which means to our disadvantage. It has been said that organizations and nations that use new technology are not after ALL of our business -- they are after only the profitable parts! Therein lies the danger and the challenge to us all.

I believe that BCIT is well positioned to rise to the challenges of information technology. It will require a new awareness from all of us (even those of us who believe we understand at least part of what is happening in the Information Society that surrounds us!), but as an Institute of Technology we really have little choice but to become deeply involved in a new technology that is already touching every facet of our daily lives both at work and at leisure.

I see Computer Resources playing a major role in assisting each of you to understand and exploit information technology: the path ahead is not clear, easy, cheap or without hazard, but if we do not accept the challenge then others will. We all know too well the fates of North America's major auto and home electronics industries: unable or unwilling to accept the challenges of the newly industrialised nations they chose to be victims. That lesson from the recent past should alert us to the need to exploit information technology to the fullest in our teaching, administrative and R&D activities, and to arm each and every one of our students with the knowledge of these new tools and techniques, regardless of the trade or technology from which he or she graduates.

In coming months I hope to return to this topic again, and to provide you with a new medium (yes, an information technology solution!) to allow us jointly to discuss these issues further.

Yours,

Morven Wilson

EDITORIAL MESSAGE

The Newsletter continues its evolution. Starting with this issue, the Newsletter will be printed in standard-size print, except for the front and back pages.

Before we forget, we must acknowledge the fine redesign of the front page by Lynda Watson (Print Services) and the excellent printing of the Christmas issue by Sherry Arnold and her staff.

In this Information Age, we are constantly bombarded with data. Graphical techniques have long been used to simplify complex data. In the past few years, graphics software has been developed for the microcomputer. In this issue, we describe business graphics facilities available through Computer Resources.

We also discuss the Released Faculty position to highlight the achievements and opinions of current and past faculty members who have held that position. The Released Faculty position requires budget approval each year. Usually, the position is advertised in April, and the interviews and selection are done in late April or early May.

Suggestions for focus topics are welcome. If you have some area of computing that you are interested in, or if you would like to submit a paper, feel free to send me a note.

Dan Low, Editor (8268)

NOTICES

UHC Spring Break Course Schedule

The following courses will be offered during the Spring Break. These courses are held during the mornings (09:00-12:00) of the dates indicated.

Date	Description
87:03:09	Beginner's CMS
87:03:10	Advanced CMS
87:03:11	Advanced CMS

PC DOS Courses -- Beginner's and Advanced -- will still be held once a month. For further information or to register for any of the above courses, please contact the User Help Centre at local 8561 or 8628.

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The Future of BCIT's HP 3000

BCIT's HP 3000/64, installed in 1983, is used mostly for introductory level courses. It supports over 1300 students this term, down about 25% from last term's figure of 1700. These students run BASIC, Minitab, Powerhouse and many packaged programs which have been acquired, adapted and/or written at BCIT.

The popularity of Business Basic has loaded the HP to the point where response time has suffered. Although limited main memory on the HP is the immediate cause of this problem, there is no assurance that an expensive memory upgrade will be of long-term benefit. Before the current

lease-purchase agreement lapses in 1988, the whole configuration will be re-considered in the light of today's technology and job market. There may be a better way of supporting these applications and others which will be needed in future.

The fall 1987 term will be a critical time, as a final solution cannot reasonably be implemented by then. Computer Resources welcomes comments and suggestions from interested users. Please forward your suggestions to Dave Thomson (8560).

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Staff Changes in Administrative Systems

There have been several staff changes in Administrative Systems over the last several months. Analysts Mike Smolnicki and Ron Lee have both left the department for positions at UBC; and former Assistant Manager Larry Ferguson has accepted a position with Kelly Douglas. Joining the group are Pat Pelletier and Duanne Wilson. We wish Mike, Ron, and Larry good luck with their new endeavours and extend a welcome to Pat and Duanne.

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Computer System Availability Report

	NOV	DEC	JAN
HP 3000	98.9%	97.8%	98.7%
IBM 3083			
VM	99.2%	100 %	99.9%
ISIS	97.5%	100 %	98.1%
GLOBAL-CHRIS	98.2%	100 %	99.3%
DOBIS	95.4%	99.8%	98.8%

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General Statistical Information

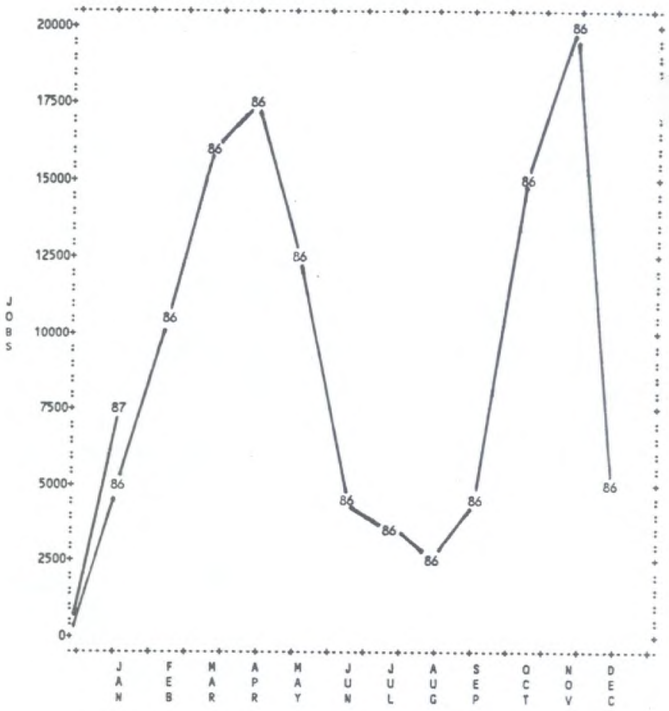
POWER Jobs Submitted

	NOV	DEC	JAN
AVSE -	2,347	2,039	2,795
SVSE -	20,026	5,023	7,737
TVSE -	947	678	715

AVSE = Administrative VSE system
SVSE = Student (academic) VSE system
TVSE = Test VSE system

The following graph is designed to compare the current year's figures to last year's for SVSE, the student VSE system.

POWER Jobs Submitted on SVSE



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Hardware Problem Report

Since the end of November, some problems have occurred on the IBM 3083 mainframe system. These fell into three classes -- problems with the IBM 3274 terminal controllers, the Memorex 1270 communications controller and the central processing unit.

Various problems were experienced with different IBM 3274 terminal controllers. Since each IBM 3274 terminal controller handles a different group of terminals, not everyone was affected on each occurrence.

Service on the Memorex 1270 communications controller handling the data communications with the downtown campus and the optical scanner was interrupted for a total of 2.25 hours on three occasions.

The mainframe processor was down for a total of 70 minutes on two occasions -- 87:01:07 and 87:01:12.

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HARDWARE CHANGES

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December Computer Resources Equipment Move

On 86:12:19, Computer Resources embarked upon a major endeavor, akin to starting all over again! As part of the major renovations, the coordination of several trades was required to move the computer, communications and peripheral equipment to the new operating and machine rooms.

One of the requirements was to place the equipment in an environment meeting the manufacturer's specifications for spacing, air flow and power.

Starting at 17:00 on Friday, 86:12:19, all communications lines to outside users were disconnected. At 23:00 both the IBM 3083 and HP3000 computers were powered off. By Saturday morning, all cables were disconnected and all units moved to their new locations.

By 18:00 Sunday, 86:12:21, networks consisting of dozens of telephone lines and more than 600 cables had been relocated and power restored to all but four units. A wall had been erected; the raised floor expanded, and a new large air conditioning unit installed, including all the duct work and plumbing. Dozens of small jobs were performed to complete this move.

During a peak period on 86:12:20, approximately 35 people worked on this project.

It is to the credit of the people involved that by Monday morning, 86:12:22, the majority of user of the mainframe systems were oblivious to the activities of the weekend -- other than the logon notice that all systems were unavailable that weekend due to equipment and power supply relocation.

If you are interested in more detail, please feel free to contact Lee Korman (8351) or Zdenek Prochazka (8578).

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SOFTWARE CHANGES

ZSTEM Update

Owing to heavy demand and general cost inflation, the manufacturer of ZSTEM has raised the price of ZSTEM to $45 per copy. Central Stores is selling ZSTEM at that new price with documentation included.

ZSTEM is a terminal emulator program that runs on an IBM PC and emulates an IBM mainframe terminal. ZSTEM uses a serial port to connect to BCIT's Dataswitch through a telephone line via a modem or a direct connect via twisted pair.

A new release of ZSTEM will be available in early March. Current owners of ZSTEM software do not need to upgrade to the new version since there are no significant enhancements -- only minor changes in the definition of function key macros.

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FEATURES

Business Graphics Facilities at BCIT

The purpose of this discussion on business and presentation graphics is to raise the awareness of facilities available through Computer Resources. These are indicated at the top of the next column.

System	Software Package
IBM 3083	GDDM (Graphical Data Display Manager)
	SPSS (Statistical Package for Social Sciences)
HP 3000	Minitab

In part, this discussion is academic since Computer Resources does not have a plotter on the IBM mainframe or the HP3000 minicomputer for graphing the output from these software packages. Printer plots, while not of presentation quality, can be used for decision making.

The current interest in business graphics has been largely fueled by the ease with which simple graphics could be generated by spreadsheet programs such as Lotus 1-2-3 and SuperCalc3. A consequence has been the development of many PC-based packages. Two packages -- Chart-Master from Ashton-Tate and ChartStar from MicroPro -- are discussed in following articles.

Computer Resources is working to acquire better business graphics facilities. Increased demand will provide more justification.

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Effective Business Graphics

An old saying says "a picture is worth a thousand words". We all know how easy it is for computers to generate a tremendous amount of information. The purpose of business graphics is to simplify information to indicate trends or relationships that could be obscured by an overabundance of data. However, you can still fail if you ignore some

fundemental principles of effective business graphics.

* "Keep It Simple" -- Don't clutter up your graph with extraneous data. Usually, you would have one point to make. Select data that gets your point across. Don't try to graph on one chart everything the computer prints out.

* Choose the right type of chart. For example, a line chart is appropriate for trend analysis; a bar chart for comparing one thing to another; a pie chart for comparing one thing to a whole; a scattergram for correlation of data, and so on.

* Make it easy to read.

  - Show all labels and annotations horizontally.

  - Use colour, if available. Solid colours are better for pie charts than cross-hatching. However, use colour sparingly. Too many colours are confusing and be aware of the connotations of the colours you use.

    For example, be careful in using red for colouring financial information. In North America, we associate deficits with red.

* Label bars, lines and other data directly if room permits. Indirect labeling via keys and legends requires additional time for interpretation.

* Use scales carefully.

  - Avoid multiple scales.

  - Begin the axis at zero for making comparisons.

  - Use units that are multiples of two, five or ten for easy interpretation.

These points are offered as guidelines only. There are no absolutes in this field. You have to choose appropriate techniques based on your objective(s) and on your audience. For example, if a person is colour-blind, then the use of certain colours will not have the planned impact!

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Graphics in Minitab

The interactive statistical package Minitab, running on the HP 3000, provides business graphics capabilities. However, while Minitab has extensive plotter support, keep in mind that only printer plots can be achieved on the HP 3000 system.

Release 5.1 of Minitab provides new plotting capabilities such as:

- contour plots
- dot plot
- multiple time-series plots

Since we are restricted to printer plots on the HP 3000, the plot output for a regression analysis (from the routine REGRESS) is a scattergram on which you have to draw the lines.

The MPLOT routine is useful for multiple line plots on the same scale. Minitab fits the scale to the data to provide a display that is easy for visual interpolation of the curve joining the points.

For samples of plots provided by Minitab, refer to the BCIT Minitab User's Guide (86:11:17), available free for faculty and

staff from the User Help Centre and, at cost, for students from the Bookstore.

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SPSS

SPSS (Statistical Package for Social Sciences), a widely-used package for statistical analysis at BCIT, provides rudimentary graphics with the FREQUENCIES and PLOT routines.

The FREQUENCIES procedure produces a table of frequency counts and percentages for the values of individual variables. By default, it prints as many tables with complete labeling information as will fit on one page in the order specified on the DATA LIST statement.

In addition to frequency counts and percentages, the FREQUENCIES procedure can provide barcharts with the command as shown below:

```
FREQUENCIES     VARIABLES=varlist/
                BARCHART/
```

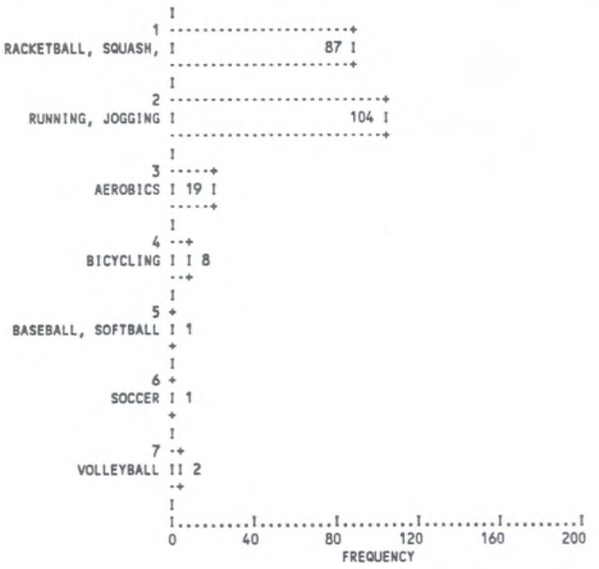
where varlist = the list of selected variables.

Each bar corresponds to a value and the length of the bar is determined by the number of cases having the value. You can also specify minimum and maximum bounds for plotting, and a horizontal scale labeled with percentage or frequency counts as follows:

```
FREQUENCIES     VARIABLES=varlist/
                BARCHART=PERCENT
                         MAX(n)/
```

where n = maximum value.

Fig. 1: A Bar Chart



Note: Data courtesy of SPSS Inc.

With the HISTOGRAM subcommand, you can produce histograms for all variables named in the variable list as shown below:

```
FREQUENCIES     VARIABLES=varlist/
                HISTOGRAM/
```

Fig. 2: A Histogram

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
RACKETBALL, SQUASH,	1	87	28.3	39.2	39.2
RUNNING, JOGGING	2	104	33.9	46.8	86.0
AEROBICS	3	19	6.2	8.6	94.6
BICYCLING	4	8	2.6	3.6	98.2
BASEBALL, SOFTBALL	5	1	.3	.5	98.6
SOCCER	6	1	.3	.5	99.1
VOLLEYBALL	7	2	.7	.9	100.0
	0	85	27.7	MISSING	
	TOTAL	307	100.0	100.0	

```
 COUNT      VALUE    ONE SYMBOL EQUALS APPROXIMATELY  4.00 OCCURRENCES
    87       1.00  **********************
   104       2.00  **************************
    19       3.00  *****
     8       4.00  **
     1       5.00
     1       6.00
     2       7.00  *
           I.........I.........I.........I.........I.........I
           0        40        80        120       160       200
                  HISTOGRAM FREQUENCY
```

All the formatting options available with BARCHART can be used on the HISTOGRAM subcommand; i.e. MIN(n), MAX(n), PERCENT(n), FREQ(n). In addition, you can specify the interval width and superimpose a normal curve on the histogram as shown below:

```
FREQUENCIES    VARIABLES=varlist/
               HISTOGRAM=NORMAL
                    INCREMENT(n)/
```

Fig. 3: A Histogram with the Normal Curve Superimposed

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
RACKETBALL, SQUASH,	1	87	28.3	39.2	39.2
RUNNING, JOGGING	2	104	33.9	46.8	86.0
AEROBICS	3	19	6.2	8.6	94.6
BICYCLING	4	8	2.6	3.6	98.2
BASEBALL, SOFTBALL	5	1	.3	.5	98.6
SOCCER	6	1	.3	.5	99.1
VOLLEYBALL	7	2	.7	.9	100.0
	0	85	27.7	MISSING	
	TOTAL	307	100.0	100.0	

```
  COUNT      VALUE    ONE SYMBOL EQUALS APPROXIMATELY  4.00 OCCURRENCES

     87       1.00  **************:*******
    104       2.00  **********************:****
     19       3.00  *****     .
      8       4.00  *:
      1       5.00
      1       6.00
      2       7.00  *
                    I.........I.........I.........I.........I.........I
                    0        40        80        120       160       200
                              HISTOGRAM FREQUENCY
```

Either a bar chart or a histogram can be produced depending on the number of values encountered in the data by using the HBAR subcommand. If a barchart fits on a page, HBAR produces a bar chart; otherwise, a histogram. Specifications for BARCHART and HISTOGRAM will also work with HBAR. The format is shown below:

```
FREQUENCIES    VARIABLES=varlist
               /HBAR
```

Scattergrams can be produced by the PLOT procedure. An example of a scattergram is the graph of "Jobs Submitted" on page 4 The points were plotted with the procedure PLOT. The output was modified with XEDIT for the vertical month names on the x-axis and the line was drawn manually.

With PLOT, you can:

* produce bivariate scatter plots or, by defining symbols to represent different elevations, 3-dimensional (contour) plots

* define a title for the plot with the TITLE command

* define titles for the axes

* define the range of each axis (i.e. the minimum and maximum values)

* define the symbols used for plotting with the SYMBOLS subcommand

* define the plot area with VSIZE and HSIZE commands

Defaults exist; so it is possible to get a plot without specifying any parameters.

To transform the printed scattergram into a line chart, you would have to draw the line between each point yourself. We are currently devising procedures to link SPSS to ChartStar to further automate this step. (For more information on ChartStar, see the article on ChartStar on the next page.)

For more information on the graphic capabilities of SPSS, please refer to the BCIT SPSSx User's Guide (86:11:28) which is available free for faculty and staff from the User Help Centre and, at cost, from the Bookstore for students. Alternatively, you can talk to Dan Low (8268) and Ron Venne (8538).

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IBM GDDM

A little known product on the IBM mainframe is the Graphical Data Display Manager (GDDM). The features of GDDM relevant to business graphics are the Presentation Graphics Feature (PGF) and the Interactive Chart Utility (ICU).

The major factor limiting the use of GDDM is the small number of IBM 3279 terminals at BCIT. There are three (3) IBM 3279 terminals in the student terminal room 2N327 and a few located in Surveying and Mining Technology.

If you have access to an IBM 3279 terminal, you may want to experiment with the ICU. Control is through menus. A context-sensitive online help facility is available via the PF1 key. To run the ICU, type

ADMCHART

from CMS. You will then be presented with a choice of activities.

First, select a chart type. The ICU provides:

- line charts
- surface charts
- histograms
- bar charts
- pie charts
- polar charts
- tower charts
- venn diagrams

Next, enter data. If you are only experimenting with the ICU, keep the data input to a minimum since the only function currently available is screen display (unless you happen to be in Surveying). If you are working with real data, keep that in mind.

After the data is entered, press the PF5 key for a display.

To leave the ICU, press PF3 to "back up" through each menu until you reach the "home" menu where you press PF9 to exit.

For more information on GDDM, contact Dan Low (8268).

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MicroPro ChartStar

In Fall 1985, Academic Systems conducted an evaluation of business graphics software for the IBM PC. The primary characteristics sought were:

1. ease of use for occasional users
2. flexibility in type and style of charts
3. low cost
4. data portability

From the study, we concluded that ChartStar, from MicroPro International, offered the greatest flexibility in type and style of charts in relation to its cost ($400 Cdn). In an article presented in the November 1985 issue of Canadian Business, ChartStar was considered to be "very easy to use". This article provided useful input since it was oriented towards executive-level users to whom flexibility and ease of use were major concerns.

ChartStar provides the following chart types:

- line
- bar
- pie
- Gantt
- organisation
- text

With the line chart routine, ChartStar provides four styles:

- simple line chart
- area-filled line chart
- scattergram
- curve-fitted scattergram

Six line types are available. In addition, scales can be linear or logarithmic.

Six bar chart styles and four pie chart styles are available.

Data for the line, bar and pie charts can be easily transferred from one chart type to another. ChartStar provides a one-way transfer from the business graphics charts to the text chart for additional annotation.

With the text chart, you can create overheads, meeting outlines, etc. The organisation chart routine can be used for block diagrams for organisation charts, process charts and flow charts. Gantt charts are used for project management.

Throughout, ChartStar provides a consistent data input style (via menus).

A significant feature is input of data prepared by another system. ChartStar allows transfer of data from MultiPlan, VisiCalc, Lotus 1-2-3, and SuperCalc. In addition, with the "comma-delimited format", you can input data from dBase III or from other computer systems. For example, the transfer of a data file from the HP3000 and the output of a SPSS program on the IBM mainframe to ChartStar was achieved.

Another noteworthy feature is the ability to save graphics in a series of files and to display them in a specified order, much like a slide show.

We are currently investigating site licencing for other software packages at BCIT and should there be enough interest, we would investigate acquiring a site licence for ChartStar. In doing this, we would be able to adhere to BCIT's copyright policy and offer the software at a substantially reduced price.

For further information on ChartStar, see Dan Low (8268).

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Ashton-Tate Chart-Master

Chart-Master is a PC Graphics program which allows for the creation of various types of graphs. Chart-Master was developed by Decision Resources which was recently acquired by Ashton-Tate. In current trade periodicals, you will see it advertised as "Ashton-Tate Chart-Master".

Chart-Master is accompanied by a five minute "get-acquainted" lesson in which you are led through the steps to create a simple clustered bar-graph.

The package displays clear-prompts and well defined menus. Chart-Master is also capable of retrieving rows or columns from other spreadsheets such as Lotus 1-2-3, Visicalc or Multiplan.

The manual is easy to read and understand, with samples of the various graphs Chart-Master can produce. Chart-Master supports eight professional type styles as well as 80 plotters and printers.

To view and evaluate the above package for your particular needs, Chart-Master is available for loan through the User Help Centre.

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Microcomputer Draw and Paint Programs

A class of microcomputer software for creating graphic images, paint and draw programs, are available for most popular microcomputers including the IBM PC, Apple MacIntosh, Commodore Amiga and Atari ST series. This article will examine the functions, applications and limitations of this software, as well as some hardware considerations.

Paint and draw programs are useful to instructors who wish to produce handouts or overheads that combine simple graphics and text. Their use is largely influenced by the "icon and windows" approach developed by Xerox and popularized by Apple with the MacIntosh and "MacPaint". As a result, these programs are generally easy to learn.

Both types allow you to produce, print, save and retrieve graphics. You can draw geometric shapes and lines, add text, move objects around and more. However, each have their unique capabilities.

Paint programs are particularly useful for detailed colour graphics. They are well suited for illustrations from the natural world (e.g. a leaf) or graphics such as a logo. An interesting feature of paint programs is the ability to edit pictures at the "pixel" level (pixels are the small dots which make up screen images). You can enlarge a portion of your picture to fill the screen and then shade individual pixels, resulting in fine detail.

Draw programs can be used for simple layout and design work. With these packages you could draw data flow diagrams, flow charts, 2-D molecular structures, organizational charts, etc.

Draw programs are more limited than microcomputer CAD programs (e.g. AutoCad) and may not support multiple layers, automatic dimensioning, automatic isometric view creation or links to a text database.

The major difference between draw and paint programs is that draw programs are more "object oriented". This allows easy editing of individual graphic objects (e.g. circles) as an entity. For example, if you draw a line through a circle with a paint program, it is not easy to edit the line separate from the circle whereas it is is very easy with a draw program.

If you want to create a picture with many simple graphic objects then consider a draw program. If the picture involves images of considerable detail, use a paint program.

To use these programs you will need a "mouse" -- a pointing device to select commands and move the cursor. All of the above mentioned microcomputers come with a mouse as standard equipment, except for the IBM PC. For IBM PCs, the most widely-supported mouse (by these programs) is the MicroSoft Mouse.

If you have an IBM PC (or compatible) and you purchase a draw or paint program, be sure that it supports the graphics resolution of your system. For example, some programs require the enhanced graphics adaptor (EGA) card for display while most PC's have only a colour graphics adaptor (CGA) or monochrome card.

Both paint and draw programs support the major dot-matrix and

laser printers but support for plotters or colour printers is rare.

Popular packages on the IBM PC and MacIntosh include:

Paint Programs:
IBM PC - PCPaint,
Windows Paint,
GEM Paint
MacIntosh - MacPaint, SuperPaint

Draw Programs:
IBM PC - Windows Draw,
GEM Draw
MacIntosh - MacDraw, SuperPaint

For more information on the above programs, contact Craig Larman (8628).

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Released Faculty Reports
Ron Venne

Kodak Datashow System: At a regular monthly meeting of the Professional Marketing Research Society held at the Pan Pacific Hotel in Vancouver, Dr. John Claxton (UBC Faculty of Commerce) presented some results from a survey he conducted on behalf on a major beer company regarding the feasibilty of bringing a professional baseball team to Vancouver. The research had been conducted in shopping malls utilizing micros for direct data entry.

Presentations of research findings are common at marketing research meetings but the point of interest was in the way which this one was presented.

Dr. Claxton arrived with a Toshiba micro and a new projection unit called a Kodak Datashow System.

The data which had been stored on diskettes, along with the graphics, was then projected to a large screen through the DataShow unit. In addition to the research findings, he also had a case study on the diskette and conducted a very interesting interactive discussion with the audience whereby he invited input from the audience and projected the changes through the micro.

How does the Kodak Datashow work? It's a simple device that sits on top of any overhead projector and electronically links any IBM PC or compatible to the overhead projector for an instant display of computer-generated images. The electronic overheads are just like conventional transparencies except they are stored on your diskette. The system also comes with a remote control unit as well as the "Showmaker" software.

I sat through the presentation fascinated about the potential of the device as a teaching tool at BCIT. I had a discussion with Dr. Claxton after his presentation and he told me that he uses the Datashow unit in all his classes at UBC and has had very positive feedback from his students.

Computer Resources had the unit in for a demo and some initial heating problems with the lead crystal of the overhead projector have been resolved with a new cooling device. Budgets allowing, the plan is to get the unit in the User Help Centre and a loan system might be set up. Should you be interested in acquiring a unit for your department the price is quite reasonable -- approximately $1,700. More details on the unit can be found in Computer Resources from Ron Venne (8538).

Newsletter Feedback: The Newsletter currently enjoys a substantial audience on campus. We were pleasantly surprised to find an external reader as far away as Chicago. The Academic Product Manager for SPSS INC. read about the projects we were working on and is interested in our evaluations of various micro statistics software packages. Since we are investigating the feasibility of getting a site licence at BCIT for a micro statistics package, we were pleased that we found a supplier that might have a mutual interest in our endeavours. <>

The Released Faculty Experience

For five of the past six years, Computer Resources (CR) has supported the Released Faculty position where a faculty member joins CR to work on computer-related projects. We recently interviewed the current and past released faculty persons to provide a historical perspective for potential applicants.

Several common opinions about the experience were expressed, such as:

* It was good to be able to concentrate full time on computer-related projects without disrupting teaching.

* A better appreciation of CR services and improved interdepartmental relationship with CR was gained.

* A better appreciation of mainframe uses (e.g. electronic mail) was acquired.

* It is a good way to get faculty to upgrade and employ modern techniques in their discipline.

* An increased computer literacy and confidence was acquired.

* The instructor became a more valuable source of computer knowledge to their students and technology.

* Conforming to regular working hours was a significant adjustment from teaching.

* The position is very worthwhile and should be continued.

Some individual comments were:

* The major objective should be to become more computer literate when you return to the classroom and, at the same time, becoming an asset to both your department and CR.

-- *Ron Venne, Marketing Management, 86:08 - 87:06*

* Although there is more microcomputer usage, I understand better the use of mainframes for some applications.

* I am better able to evaluate hardware and software needs for teaching

-- *John Fairley, Mining, 85:08 - 86:06*

* It was an opportunity to influence the policy and decisions of CR.

* It is now easier to tailor computers to our (Surveying - Ed.) needs. We are more confident about a greater diversity of computer usage.

* The experience is recommended.

-- *Bill Tupper, Survey, 84:09 - 85:06*

* Excellent opportunity to see the workings of another department. Stimulating to be the rock bottom greenhorn!

* I absorbed a fair amount of "professionalism" in my approach to data management and the utilization of computer resources. I was able to study the latest in microcomputer technology (circa 1983 - Ed.)

-- *Norm Alexander, Forest Resources, 83:01 - 83:06*

* I am now aware of the implications of requests for software for teaching.

-- *Don Mallory, Operations Management, 81:09 - 82:06*

All of the released faculty members had projects both from their own technology and from CR. Here are a sample:

* Preparing documentation for faculty and students:
  - Computing Services at BCIT, (Norm Alexander, Bill Tupper, Ron Venne)
  - BCIT SPSSx User's Guide (Ron Venne)
  - BCIT FORTRAN User's Guide (John Fairley)

* Acquiring new software for teaching:
  - SPSS PC+, the micro version of SPSS (Ron Venne)
  - GEOLOG and GEOEDIT, data logging and data entry programs, from International Geosystems Corporation (John Fairley)
  - Surveying program for drawing perspective wire nets of terrain surfaces (Bill Tupper)
  - Simulation programs for forcasting the spread of root rot and the parasitic dwarf mistletoe growth (Norm Alexander)

* Training other faculty:
  - use of SPSS in mmarketing research (Ron Venne))
  - introduction to SPSS (Don Mallory)
  - how to use microcomputers (Norm Alexander).

* Setting up or upgradinng micro-comuter labs:
  - Marketing Management "Genesis" PC Lab (Ron Venne)
  - Applied Industrial Computing Lab (John Fairley)
  - Operations Management Apple Lab (Don Mallory)

For future participants, here are some points to ponder:

* Consider applying if you are planning on upgrading your course to implement more mainframe or micro applications.

-- *Ron Venne*

* Have a definite reason or project. It is not a holiday.

-- *John Fairley*

* Is the exposure going to enhance your performance on return to your technology?

* Is it applicable to your teaching?

* Do you have something to offer CR?

-- *Norm Alexander*

* Are you willing to give up some freedom -- less flexible hours? (regular 0830-1630 35-hour work week - Ed.)

-- *Don Mallory*

We hope this discussion has indicated some benefits of the program and has stimulated your interest in the position.

<>

PC-Outline: New Shareware for the PC

An outline processor may be thought of as a word-processing package for text which has some hierarchical structure. For example, you could start writing an article (or course outline) by listing all the points you would like to cover, then expanding on those points, arranging them in different order, deleting some or making them subordinate to others. With a word processor you would use block moves and deletes to do this. Block operations are even easier with an outline processor because the "block" is already defined. When you move or delete an outline entry, all subordinate entries go with it.

Another advantage is that the outline processor can selectively hide lower level entries, removing distracting detail from the screen. This also lets us print both a detailed outline and a one-page summary from the same outline file. Or if the file contains an exam complete with answers to each question, the answers can be hidden before printing the exam.

Other features of PC-Outline:

a) Windowing
   - Scale, move or zoom any window.
   - Copy from one window to another.
   - Up to 9 windows can occupy the screen at one tiime.

b) Sort outline entries into alphabetical order.

c) Redefine any key to contain an often-used word or phrase.

d) Insert current date or time into the outline.

e) PC-Outline can be loaded as a memory-resident program, sharing memory with other applications and pop up when needed. When memory-resident, it can "import" a screen from another PC application.

Shareware is not necessarily public domain. While everyone is encouraged to try it out, a payment of $54.95 US (app. $77 Cdn.) is requested from anyone who uses PC-Outline regularly. It could not legally be distributed to students without a site licence.

For an evaluation copy of PC-Outline, bring a blank diskette to Dave Thomson (8560) in Academic Systems.

<>

DUTY ANALYST'S CORNER

Q: Is spoolback limited only to Computer Systems Technology students? I'm in another technology and my students tell me that they can not get computer output spooled back to their terminals. They have the CLASS=V on the * $$ LST statement. What is wrong?

A: The answer to your first question is that spoolback is available to all technologies.

While CLASS=V is necessary on the * $$ LST statement, it is not sufficient for spoolback. The CLASS=V merely indicates the output class -- that the output is to be sent back to a CMS ID, but not which one! That information is given by the jobname specification on the * $$ JOB JNM=jobname statement. The jobname has to be the same as the CMS ID for spoolback.

Just to summarize, if you had the CMS ID $FACJ123, then the job control statements for spoolback should be:

```
* $$ JOB JNM=$FACJ123
* $$ LST CLASS=V
```

Another common error is that if you use the JSEP=0 to remove the separator pages on spoolback, you must not leave a blank between it and the comma following CLASS=V; i.e.

```
* $$ LST CLASS =V,JSEP=0
```

not

```
* $$ LST CLASS=V, JSEP=0
```

Do not forget to set JSEP=3 when you change to CLASS=A for printer output. Otherwise, your print file will have no separator pages; making it impossible to separate your output from someone else's! Don't forget:

```
* $$ LST CLASS=A,JSEP=3
```

We hope that this solves your problem.

DOCUMENTATION UPDATE

Revised:

BCIT Academic Software Support, (87:02:09)

New:

BCIT Pascal User's Guide, (86:12:10)

Soon to be available:

BCIT Powerhouse User's Guide
BCIT WATFOR-77 User's Guide

These user guides are available free to faculty and staff from the User Help Centre.

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HOURS OF OPERATION

I. ACADEMIC SYSTEMS

Regular Hours -- Academic Systems

System	Hours	Days
IBM 3083	0800 - 2300	Monday - Friday
	0900 - 2100	Saturday
	0900 - 1700	Sunday
HP 3000	0700 - 2400	Monday - Thursday, Saturday & Sunday
	0700 - 2130	Friday
Micros	0700 - 2300	Monday - Sunday

On weekends, the HP 3000 runs in UNATTENDED mode from 1700-2400 during the school year.

Easter Weekend Hours:

Good Friday	87:04:17 (0900-2300)
Saturday	87:04:18 (0900-2100)
Easter Sunday	87:04:19 (0900-1700)
Easter Monday	87:04:20 (0900-2300)

II. ADMINISTRATIVE SYSTEMS

Regular Hours -- Administrative Systems

System	Hours	Days
GLOBAL/CHRIS	0800 - 1800	Monday - Friday
	unavailable	Saturday,Sunday
DOBIS	0800 - 2230	Monday
	0700 - 2230	Tues - Friday
	0900 - 1700	Saturday
	0945 - 1700	Sunday
ISIS	0800 - 2030	Monday-Thursday
	0800 - 1630	Friday
	0830 - 1230	Saturday
	unavailable	Sunday
PROFS	0730 - 2300	Monday-Sunday

Hours of Operation for all systems (academic and administrative) and exceptions to posted hours are noted on the CMS Logon message.

The CMS Logon message display is in two parts. The first will be displayed every time you log on. Temporary changes to scheduled hours, system downtimes, or new releases of system software packages will be noted on this part.

The second part of the CMS Logon Message will only be displayed when Q LOGMSG is entered. This will display all regular system scheduled hours and any long term information about scheduled holiday hours, system downtimes for maintenance, planned system software or hardware upgrades, etc.

MAINTENANCE

Computer Resources maintains equipment in the table below. In case of problems, call 432-8407.

Micro/Terminal Labs	Locations
IBM PC / Zenith	2N318
IBM 3083 system	2N419, 2N420 2N319, 2N327, 2N329
HP 3000 system	2N322, 2N325

Moving of Terminals (CRT's) and/or Printers

Relocation of terminals/printers used on the IBM mainframe should only be performed by Computer Operations. For assistance, contact Lee Korman (432-8351) or Computer Operations (432-8407).

There are three reasons for this request:

1. These terminals have been set up to access the different systems (PROFS, DOBIS, etc.). If the device is moved without FIRST notifying Computer Operations, there is no guarantee that it will work. The BCIT logo may be present but the systems previously accessed could now be unavailable.

2. Terminals and printers are cross-charged. If a device is relocated without FIRST notifying Computer Operations, the last known department or individual who had the terminal would continue to be charged.

3. Maintenance calls for problem terminals/printers are recorded by serial number (which is cross-referenced with the device's location). If the device is moved without notifying Computer Operations, considerable delay could occur in servicing the problem device.

<>

IBM Terminal (CRT) Trouble Shooting

The following procedure applies to IBM 317x, 327x and Memorex terminals. If the terminal is not working, please follow the steps outlined below to correct the problem. If after checking these items and the terminal fails to display the BCIT logo, contact Computer Operations (432-8407).

1. Shut the terminal off.
2. Check that the power cord is plugged in at the electrical outlet and at the terminal.
3. Check that the COAXIAL CABLE connection at the back of the IBM 3178/3179 (or front of the IBM 3278) terminal is secure. The connector is a PUSH-TWIST type.
4. Turn the terminal on.
5. Check that the BRIGHTNESS control knob is turned on. It is marked by the o symbol. On IBM 3278/3178 terminals, it is on the lower right hand side of the screen bezel. On IBM 3179 terminals, it is a thumbwheel below the screen.
6. If the screen is blank with only the CURSOR at the top RIGHT HAND CORNER and a line at the bottom going straight across the screen, this could indicate a communication problem. Call Computer Operations (432-8407).

LAB BOOKING

The IBM terminal labs and the HP terminal lab 2N322 are for scramble use only.

The HP 125 CRT terminals in Room 2N325 may be reserved by instructors of courses which use packages requiring the use of the HP 125 terminals.

Room 2N325 and the microcomputer lab (Room 2N318) may be booked through Timetabling (Room 107, Trailer 2V, local 5386).

SUPPLIES

Computer Resources stocks supplies for the student labs -- 2N318, 2N322, 2N325 and 2N329. (Other labs are maintained by other departments.) Report supply shortages to Computer Operations (432-8407).

CMS VERSION OF NEWSLETTER

If you have a faculty or staff CMS ID, you can access a copy of the Newsletter via a terminal connected to the IBM mainframe. This file is updated with each issue of the Newsletter.

The procedure is as follows:

1. Logon to CMS.
2. Type 'NEWS' and the current version will be displayed at your terminal.
3. Press <Enter> to scan through the Newsletter or press <PF1> for instructions.
4. Press <PF3> or type "QUIT" when you have finished.

PUBLISHING INFORMATION

The Computer Resources Newsletter is published by the Computer Resources Department of BCIT and is mailed to faculty and staff users at BCIT. If you have address changes, please complete the form on the last page and return to Computer Resources, or send a PROFS note to the Editor (EDITOR) or use the CMS SUGGEST facility to send a note to the Editor.

Contributions to the Newsletter and comments from our readers are welcome. Address correspondence to:

Editor,
Computer Resources Newsletter,
BCIT Computer Resources Dept.,
3700 Willingdon Avenue,
Burnaby, B.C. V5G 3H2

The next issue is planned for 87:05:04.

SERVICES

Computer Resources Department staff are located at the south end of the second floor (ground level) of the 2N building. Entrance is on the east side, in the breezeway between the 2N building and the Library.

To call from outside BCIT, dial (604) 432-<local>; e.g. (604) 432-8818.

ENQUIRIES	CONTACT	LOCAL
Administration:		
Reception	Shirley Smith	8818
Secretary	Jean Macdonald	8818
ID Codes		8561,8628
Academic Consultation:		
Released Faculty:	Ron Venne	8538
Systems Analysts:	Craig Larman	8629
	Dan Low	8268
	David Thomson	8560
Computer Operators		8246
Computing Languages	Academic System Analysts	
Course Evaluations	Karen Tong	8618
Data Communications	David Thomson	8560
Data Control	Valma Reeves	8456
Data Entry	Karen Tong	8618
Documentation	User Help Centre	8561,8628
Equipment Loans	User Help Centre	8561,8628
Exam Generation and Scoring	Karen Tong	8618
Hardware Facilities	Lee Korman	8351
Hardware Problems		8407
Numerical Analysis	Dan Low	8268
Online Administrative Systems (CHRIS,DOBIS, ISIS,GLOBAL)	Rita Richardson	8456
Optical Scanning	Karen Tong	8618
PROFS	Michele Becket	8561
Program Library Information:		
(HP)	David Thomson	8560
(IBM)	Dan Low	8268
(IBM PC)	User Help Centre	8561,8628
Programming Services		8680
Questionnaire Design and Analysis	Dan Low	8268
Remote Access	Zdenek Prochazka	8578
Software Evaluation		8680
Statistical Analysis	Dan Low	8268
Tape Mounts	Jing Vance	8671
Tours	Lee Korman	8351
Training	Carol Berg	8628

DIAL-UP PORTS:

off campus	(300 bps)	430-3371
	(1200 bps)	435-1443
on campus	(300 bps)	5448/5449

MANAGEMENT:

DIRECTOR	Morven Wilson	8624
Systems Development	Neil Mclagan	8680
- Academic Systems		
- Administrative Systems		
- User Help Centre		
Processing Services	Ron Sproule	8245
- Computer Operations	Lee Korman	8351
- Facilities & Networks	Zdenek Prochazka	8578
- User Liaison	Rita Richardson	8456
Data Administration	Jim Coss	8482
Technical Support	Ted Parten	8453

FACILITIES

IBM 3083-JX2 mainframe:
- 24 megabyte main memory
- seven IBM 3380 disk drives with 2.5 gigabytes each
- three IBM 3880 disk drive controllers
- four 1600/6250 BPI tape drives
- 500 terminals
- VM/CMS and VSE operating systems
- batch and online processing
- academic and administrative processing

Hewlett-Packard (HP) 3000/64 minicomputer:
- 2 megabyte main memory
- 64 terminals
- one 404 megabyte disk drive
- one 64 megabyte disk drive
- one 1600 BPI tape drive
- MPE-V operating system
- introductory programming and application package training

DEC VAX 11/780:
- 4 megabye main memory
- 13 DEC VT220 terminals
- one TekTronix 4113A graphics Terminal
- two RA81 disk drives, 455 megabytes each
- one TU80 tape drive
- one DSI paper tape punch
- one HP 7475A pen plotter
- one DEC LA210 LQ printer
- VMS 4.1 operating system
- computer numerical control programming using Applicon EQINOX software

Microcomputers:
- seven (7) IBM PC
- twelve (12) Zenith Z-150
- student instructional use

LOCATIONS:

IBM 3083:
Student Terminal Labs:

IBM 3161 ASCII terminals	2N420
IBM 3178 and IBM 3279	2N327
IBM 3278	2N329
Memorex 2078	2N419

HP 3000:
Student Terminal Labs 2N322,2N325

Microcomputers:
IBM PC/Zenith Student Lab 2N318

VAX 11/780:
Machine Shop Terminal Lab ..... Bldg 19 North Campus

Faculty Area (Computer Resources Foyer):
one HP 125 terminal
one IBM 3278 terminal
one Televideo 950 terminal
one IBM 3262 line printer

BCIT Computer Resources Department MAILING LIST UPDATE

NEWSLETTER SUBSCRIPTION

____ ADD my name to your MAILING LIST

____ CHANGE my mailing label information
(I have attached my mailing label and indicated the changes below.)

____ REMOVE MY NAME (I have attached my mailing label.)

MAILING LABEL INFORMATION (Please print.)

NAME/TITLE: _____
last first

MAILING ADDRESS: _____

_____

_____

_____

Postal/ZIP Code _____

Business Phone: _____

Date: _____ Signature: _____

FEEDBACK

If you have a comment or a suggestion about any of our services, we would like to hear from you. Please take the time to jot it down and return this form to us.

_____

_____

_____

_____

TO: Editor, Newsletter
BCIT Computer Resources Department
3700 Willingdon Avenue
Burnaby, B.C. Canada V5G 3H2

Please fold