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Ottawa IBM - PC Users Group

February, 1989 3 Thatcher Street, Ottawa, Ontario, K2G 1S6

BBS operations

Member seeks improved system

Imagine that there's a program or file on your favorite bulletin board that you want to download but you don't want to tie up the BBS for the 15 or 20 minutes needed to download the file. Additionally, you don't want to spend those same 20 minutes sitting in front of your computer during off-peak hours to download the file. Suppose you had a program that you could instruct at 8 p.m. to identify and call a specific BBS and then download the file you wanted. And imagine the computer could do all this without your presence in front of the screen. John Whelan offers some of his thoughts and hopes some OPCUG members may be able to write such a program to solve this problem.

This isn't really an article... it's more a sort of wish. I've looked at the Pub log-on script files and they don't seem to be exactly what I'm after. To use them as a model to log-on to the Pub to capture any new messages or perhaps download a file, I have to start thinking and working things out. Additionally, to be absolutely honest, Telix's script compiler invariably comes up with rude messages about my carefully worked-out script file. The other alternative of setting up a point or full BBS without callers is really a bit more complex than I'd like.

What I'd like is an easy to use interface that requires a minimum effort on my part to get exactly the results I want. It should be possible to run on a PC with only two floppy disk drives as well.

There is a technique that I first saw for accessing online databases for librarians. Librarians are only interested in obtaining the database information and have been known to get frustrated with syntax problems. Also the cost-per-minute (or second) means you want the search to be completed as quickly as possible. The basic technique is a '.bat' file that runs two programs. The first program, often written in Pascal but can be in Basic or 'C', outputs an ASCII text file based on questions asked by the program. The second program, the telecommunication program, is told to use the ASCII text file from the first as a script file.

My ideal would have a few more features but the basic technique remains. Bulletin boards have 'peak' times and 'quiet' times. So ideally if the computer was going to work entirely unattended, it should be possible to make it wait until a specific time of day or until a predetermined number of hours had elapsed before starting up. The Pub has a useful feature for prompting human callers if there are any personal messages waiting for them. For an automated system, any prompts that aren't exactly the same every time can cause problems.

The other point is if the computer can download a file from a BBS why not let the computer run Pkunpak or other software to unarchive any downloaded files?

The problem would appear to be: how do we write a program that is run by a '.bat' file that can tell the '.bat' file the name of the file to Pkunpak and other details?

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Club needs co-ordinator

While most of the positions on the Ottawa IBM-PC Users Group executive were filled during the club's elections in November, the position of Meeting Facilities co-ordinator is still open.

As the name implies, the co-ordinator looks after all the arrangements for booking the club's meeting hall and any related duties, such as arranging for refreshments during the coffee breaks.

For more information, interested persons should contact the OPCUG president, Stu Moxley at 592 4933 or the past president, Harry Gross at 733 7989.

Last installment of three-part series

Character sets and how they're made

by Alex Mommers
OPCUG

This month's article concludes a three-part series on the implementation and modification of computer character sets. In this article, I will discuss printers, their character sets and possible modifications.

How printers work

Printers are not unlike the video hardware discussed last month. They usually have a 'text' mode and a 'graphics' mode. Both modes work with an array of dots. In text mode, the printer is told what to print by sending the ASCII code of the character. There are a number of so called 'escape sequences' defined to tell the printer how to print the character (bold, underlined, italic, draft, near letter quality etc.). These commands are called escape sequences because they usually start with the Escape character (ASCII number 27).

In graphics mode, the printer will accept bytes whose bits correspond to firing the corresponding pin in the printhead. The printer will accept a vertical pattern like this for every horizontal position on the line. A printer is thus a line by line device and the matrix for a character on a 9-pin printer typically consists of around 11 dots horizontally by 9 dots vertically for draft and 23 dots horizontally by 18 dots vertically for Near Letter Quality. The resolution will increase with an increasing number of pins in the printhead. Changing the technique for producing dots from pins and ribbons to squirting ink onto the paper (HP Thinkjet) or writing with laserbeams onto the drum of a photocopier (Laser printers) does not change the principle of the 'dot matrix': since they are digital devices, they have to have a matrix, however large the resolution may be. The only printers that do not work with this scenario of formatting commands and ASCII input of the text to be printed are laser printers using a 'Page Description Language' to compose a page.

In this case, the printer receives information in the form of source code. This source code is interpreted by a computer inside the printer, and the resulting page is printed. The best known page description language is Postscript, and it can be found in high-priced laser printers such as the Apple Laserwriter and in professional typesetting machines.

Changing the character sets.

In view of the large variety in printers I will have to be rather vague on how to change character sets on them. The best I can do within the scope of this article is to discuss the topic in general terms, dividing the printers up into classes.

On the assumption that most people will be after international characters along the lines of IBM's code pages I will base the rest of this article on international and scientific characters.

As with the video cards, we will have to distinguish between applications driving the printer in text and in graphics mode. Desk top publishing packages will usually drive a dot matrix printer in graphics mode, because this is the only way they can get the different fonts and sizes to print. If the characters you need are not supported by the software, or are supported but not using the same ASCII mapping as an IBM code page, you have to fiddle with the font files that

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Calendar...

Meetings of the Ottawa IBM-PC Users Group are held on the last Wednesday of the month except in July and December. The meetings are held are available from 7:30 p.m. with the regular meeting beginning at 8 p.m. Free parking is available behind the Gothic Building.

The next regular meeting will be on:

March 29.

Beyond the call of duty

Member pleased with area dealer

by Doug Poulter
OPCUG

I'd like to take my hat off to Peter Rutenburg, the computer repairman at Mooney's Bay Electronics. My PC/AT was seriously ill Nov. 23, after some two years of intermittent problems of undetermined cause, the PC failed completely and would not boot.

Rutenburg spent 40 minutes on the phone walking me through various hardware tests that I could make while he continued his work at the store. Almost immediately, Rutenburg identified the PC/AT BIOS as the cause of my PC/AT regularly forgetting the date, time and system configuration information when it was powered up. At the end of the 40 minutes, Rutenburg and I had identified an extended memory board as the cause of the failure. As a result of removing the board, my PC was up and running and the intermittent floppy disk drive errors were gone.

Most important to me was that my PC was working again immediately, thus enabling me to continue the work I had in progress. I was truly thankful and offered my Mastercard number to Rutenburg so that he could charge me for his time. Rutenburg declined saying ''no charge''.

What to look for:

I am including the symptoms in the hope that the list might be useful to others. The main symptoms were misleading:

1) The PC regularly forgot the date, time and system configuration information when it was powered up.

2) The PC produced an unusual number of floppy disk drive errors.

3) Frequently the PC would halt without warning. Periods between halts varied from two minutes to two months.

4) PC software diagnostic programs I was able to borrow and run did

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Member seeks improved BBS system access

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It is possible to run a '.bat' file from within a '.bat' file. The syntax is:

Command /Cfred.bat

Therefore, if the first program wrote two files: the first the script file for Telix and the second a '.bat' file that was executed by the first '.bat' file that was running the system, we would have much more control. We would still have to supply such information as Name, Password, which Telephone number to dial, etc., but to make it easier to use, perhaps the program could pick up this information from a third file, prompting the user for the information if it wasn't in the file and storing the information for the next time the program was used.

The delay can be built-in by running two programs called 'nextmin.exe' and 'nexthr.exe'. The first waits until the minute has changed; the second till the hour has changed. These should now be available from the Pub with a bit of luck. This sounds like yet another file called 'nextime.bat' that is run as a second level '.bat' file. The second.bat contains the Pkunpak filename information.

The Pubdfile.bat file might look like:

```
@echo off
If exist pubinfo.txt goto 11
copy pub.bat pubinfo.txt
:11
pascal l
cs pubdfile.slt
command /cnextime.bat
Telix spubdfile cpub.cnf
command /csecond.bat
del pubdfile.sl*
```

If you decide to write the first program in Pascal, a couple of useful lines might be:

```
writeln(outfile,'cputs(''Goodbye'');');
writeln(outfile,'cputs(^M);');
```

Also to download a file from the Pub in TBBS Y-modem format use:

```
receive('1',''filename.arc'');
```

To handle the different messages that sometimes appear the 'Track' command in Telix's Salt language is useful. Also the delay command often helps when things don't seem to quite work as in:

```
waitfor();
delay(5);
cputs('6');
cputs(^M);
```

As you may have gathered I'm too lazy to put all this together but would be delighted if someone would like to try. The technique does work but if you have any difficulties, leave me a message on the Pub. And I'd really like an OPUS set that optionally sent an escape character before anything as well.

Special help session planned

The Ottawa IBM-PC Users Group is offering new members a special 'help session for new computer users'. This beginners' session will start at 7 p.m. on Feb. 22 before the regular meeting of the group.

The security guard will direct interested persons to the location where the session is being held when they sign in.

The year in review

Interest high as many topics covered

by Jackson Hibler
OPCUG

Last year ended as it began: my nose pushed into the modem manual. That pretty well sums up the kind of year it was for the OPCUG too!

January started with Sandy Black of Omzig pointing at a better future for telecommunications: software as the expensive 'appliance'...the modem as the ever cheaper motor inside. The idea was that we would just learn to use the appliance, and not have to worry about the theory of electric motor winding! It sounded good, and indeed, the cost of the motors (modems) has gone down as predicted, but I find I am still tangled up in the motor winding part nonetheless...

By March and April I was hard at the books trying to find out how and why viruses could come wiggling down my modem link and discovered to my relief that they could only come packaged in downloaded files... not during the active PC-to-PC link of the modems!

Relieved, I turned to other issues only to be brought back sharply to the telephone as the club surveyed its membership and ultimately established a new BBS... along with a new set of protocols and commands to learn: (''Let's see now, my Y-Modem is their 1K-X-Modem, I think'')... and a series of meetings to explain them... and a further series of telecommunications sessions to try things out. I must admit I like the new BBS user interface better than OPUS... but it still had to be learned.

I guess I'm beginning to wonder whether we haven't gone too far with all this re-inventing of these wonderful telecommunicating wheels! I can tell myself we are in the equivalent of the automotive 'Model-A' era... an historic time when automotive standards (like which pedal should be used as the brake) were beginning to gel. But living in an 'historic' period is starting to wear thin when it comes to telecommunications. No sooner did we get comfortable with Telix 2.12, after it had solidly established itself as an excellent modem communications program to gain access to our BBS then version 3 arrived... with some very uncomfortable bugs that are still being scratched out of version 3.11!

Ron Elliott arrived at the November meeting and in rapid-fire sequence took us through the whole telecom 'motor', from Baud to UART pinouts to X-Off/X-On to OSI Levels one to four, ISDN, ODA/ODIF, NAPLPS to EDI ('beyond ISDN' -- which itself hasn't arrived yet)... ye Gods! Here we are back at January again; still looking at those 'motor windings'; still trying to learn how to use our 'appliance'. Thanks for bringing us back to reality, Ron. Thanks a lot...

Maybe Intel has the answer: They and DCA have come out with a 'communications co-processor board' and software that allow any program that

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Member pleased with dealer...

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not identify any cause of these problems.

5) Just before its last failure, the system had failed with multiple memory parity errors. Upon repeatedly switching on its power, my PC would either not boot or if it did, it would report a parity error at one of a number of alternating addresses of the motherboard.

The Montreal dealer that sold me the system was clearly intent on selling me 'new, better, faster' hardware, to the tune of more than $500 once he learned of my problem. Only after some bullying did he reluctantly quote a $65-per-hour charge, with no maximum, to diagnose the cause of the problems.

What really happened?

With respect to the BIOS problem, apparently old AT BIOS programs do not allow the power supply to stabilize sufficiently before switching off battery power to the clock/setup circuit. The new PC/AT BIOS's on the market, AWARD v3.03 and Phoenix v3.10, are supposed to offer:

- better timing control, which together with an RF filter I installed in the power supply, should eliminate the system halts.

- user reprogramming of the additional keys of the extended keyboard.

- user keyboard setup via [Control]-[Alt]-[Escape] of the AT configuration including display of the hard disk head and cylinder count corresponding to the nebulous disk type number.

January issue was missed

The January edition of the Ottawa IBM-PC Users Group newsletter was cancelled due to incompatibility problems encountered during the production stage of publication.

We have taken steps to resolve these problems and we apologise for any inconvenience this may have caused.

A 'programmer's editor'

Multi-Edit is packed with features

by Chris Taylor
OPCUG

When I first heard the term "programmer's editor" a few years ago, I was intrigued. I wondered what was special about such an editor from a programmer's point of view. The first one I tried was The Norton Editor. It was small (about 30K), fast, could edit files of any size, handle line length of 64K characters and was easy to use. It could edit two files at once and had a condensed mode, which made moving around a large program very swift. And I came to the conclusion that a programmer's editor was a nice tool to have.

Then, last year, a member of the OPCUG gave me a demo disk of another programmer's editor; Multi-Edit, from American Cybernetics. This program promised the world! It could edit up to 25 files at a time, could undo the last 100 actions in every window, contained a pop-up ASCII table and programmer's calculator, and you could compile programs from within the editor. Commands in the editor could be executed from function keys or pull-down menus. Most importantly, this was an 'extensible' editor. This meant that if they left out any interesting features, I could possibly add them in myself.

My first surprise came when I found that American Cybernetics' idea of a demo is a fully working copy of the program. No crippled features! A 10 minute self-running demo, written entirely in Multi-Edit's macro language provides a good overview of the program. Tony Robinson, one of the developers, told me, (..we think that people respond favorably when we don't force honesty on them." I certainly did, as has at least one other member of the Group that I know of.

Since I first looked at the Multi-Edit demo, American Cybernetics has gone through several minor version numbers and one major one. I am now using version 3.01b. It was written in Turbo Pascal 4 with some assembly language where speed was critical. The speed has dramatically improved from version 2 which was written in Turbo Pascal 3. It is now at the point where I feel the speed is acceptable.

Multi-Edit can now handle up to 100 windows, each containing a file as large as 2 gigabytes. Windows may be sized and placed in any way and zoomed to full-screen in one keystroke.

You can now undo up to the last 64K editing operations in each window! This includes text entry, cursor movements, block changes, virtually everything.

fied. The commands assigned to the mouse buttons are easily re-defined.

One of the interesting features of Multi-Edit is its ability to save its status when exiting. Load Multi-Edit again without a file specification and you will find the files you were last working on all re-loaded, with the windows set up the same way. Of course, this is optional.

Every program that has multiple definitions of function keys could learn a lesson from Multi-Edit. The last line of the screen indicates the definition of keys F1 to F10. Press the Alt, Ctrl, or shift keys and the line will change to indicate the new definitions of the keys. F11 and F12 are also supported but keyboard templates are not supplied

1989 IBM-PC Club Executive

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Last installment of three-part series

Printer plays an important role

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the program uses.

Postscript printers have all international characters known to mankind internally defined. The way to access them is to change the 'postscript header' that your application sends to the printer to prepare it for the arrival of your document. This postscript header is a postscript program that informs the printer about the codes for font changes, font size, and what characters to print for which ASCII codes. For example, Wordperfect 4.2 uses the file called PSCRIPT.PS as the postscript header. if one reads this file (it's a regular text file) there's an area called NEWCODES, where the Postscript names for international characters are assigned to ASCII codes. Changing the character set is very straightforward. The postscript names for international characters can be found in the 'postscript reference manual' from Adobe. One important point about postscript headers is that you have to find a way to edit and save the header file WITHOUT ADDING AN END OF FILE CHARACTER. Unfortunately most wordprocessors tack on an end of file character when saving a document in 'DOS text' or 'nondocument' mode. The effect of an EOF character in the header is that the printer ignores the document following the header: no printing happens at all. One brute force remedy is to replace the EOF character with a CR character using a disk sector editor.

All printers that are being driven in text mode by the word processing software can be dealt with using the following approach. First one READS THE MANUAL. I know that this is usually left as a last resort, but the manual does (or should) tell you useful things about your printer's character set. If you have convinced yourself that the printer 'cannot print' the characters that you want, you will have to create them somehow. If we postpone the discussion on how to create characters for a moment, the next problem to be solved is how to access the newly created characters from your word processor or, if you insist, from DOS. Most half decent wordprocessors come with a tool to write or edit printer drivers. This is the tool you need to fix the driver so that the printer behaves the way you want it to, and prints the characters that you want.

To this end, there is usually a 'character table' incorporated in the printer driver. This table assigns strings of bytes to be sent to the printer when a certain ASCII code is encountered in the document. In the case of a 'normal' character set this string equals the ASCII code in the document, but it doesn't have to. You can, for example, assign your printer's commands to change to the downloaded set, print a character from that set and return to the built-in character set to a single ASCII code. This is the way you access non-standard characters. If you want

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A year in review

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supports the protocol (called DICAS) to address telecommunications in the same way that one addresses the printer: ''just send it to the co-processor and let it do the rest... FAX or 2400 Baud modem... all in the background!'' It sounds so good...

New phone for buying

Phone numbers for the Ottawa IBM-PC Users Group bulk purchasing service have changed. To reach Tim or Terry Mahoney you should call 225 2630.

To reach this service via a FAC machine (facsimile), you should call 226 2615.

Last installment of three-part series

Character sets can be customized

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a custom character set for programs that do not have a character set table in their printer driver, you can still implement it, but this time you need a memory resident utility to perform the translation function.

By taking over the BIOS and/or the DOS printer functions and passing them through the utility, the effect is the same for all programs that use the BIOS or DOS services for printing. (almost all software does). Club members can get information and/or help by calling me. It is now time to discuss the creation of 'new' characters. First of all, you should ask yourself the question wether you really need to. An accent can be put on top of any character by printing the character, performing a backspace, and printing the accent. If the character and the accent are both defined in the printer's character set, you don't have to download anything. If the character is a capital letter, you can move the paper down, print the accent, and move the paper back up.

In case you really have to design a downloadable character you can do it the hard way, with dots on a piece of paper representing the matrix, a lot of binary arithmetic, and endless trials with little BASIC programs, or you can call Ron Droste for a copy of his Character Design and Download (CCD) program. Droste's program will allow you to edit a character on your screen, and print it immediately. You can then make changes and do it again. After you are done editing all your characters, their definitions are stored in a file, which the program can send to your printer from AUTOEXEC.BAT if you like. Droste's program presently supports a large number of 9 and 24 pin dot matrix printers in draft and NLQ mode. Needless to say, the number of supported printers keeps growing all the time. Droste can be reached at the University of Ottawa at 564-3348.

Those of you who were hoping for detailed instructions on how to implement code page 863 on their particular systems did not really get an answer, but I do hope that these articles have made clear what is involved. I know that many computer users do not want to be programmers... they just want to get their work done. Others, like myself, get their work done but also like to tinker with hardware and the software that interacts with it. I think I can answer your questions in a way that makes sense to you, and provide the information you need to see and print your characters. For club members, my services (new chips, custom resident software, etc) are available at cost. My home number is 744-1417.

New disk prices announced

New Ottawa IBM-PC User Group prices on high quality 360K DSDD generic discs by Kao-Didak. Boxes of 10, complete with labels and write protect tabs for $6.

Others:	Kao brand 5 1/4"	$14.
	Generic high density (AT) 5 1/4"	$15.
	Generic 720K 3 1/2"	$20.
	Kao brand 720K 3 1/2"	$28.
	Kao brand 1.44 meg 3 1/2"	$69.

Diskaroos: a water-resistant, anti-static nylon wallet with 10 rainbow-colored 3 1/2" 720K discs $28. All disc prices include Provincial Sales Tax.

For more information on available computers, software, hardware and accessories: call 225 2630 and ask for Terry, Tim or Suzanne, your OPCUG bulk purchasers. FAX 226 2615.

Ottawa IBM-PC Users Group

3 Thatcher Street, Ottawa, Ontario, K2G 1S6

Membership Renewal

Name: _____

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(Please include your complete mailing address, Apt. number, street, road, etc.)

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Memberships in the Ottawa PC Users Group (OPCUG) are $20 per person per year and are valid until March 31, 1990. Members may also subscribe to the OPCUG's Disk of the Month (DOM) service which entitles the subscriber to 10 consecutive DOMs. The DOM service is offered at $25 plus the membership fee of $20 for a total of $45. Please make your cheque payable to the OPCUG and mail it to the address at the top of this form.

Check one:

New :

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1989 Membership Fees:

Membership:	$20.00
Membership & DOM:	$45.00