

mathNEWS

CSC Flash!

Members, PLEASE

On Thursday, May 14th, the CSC held its first meeting of the term along with executive elections. Professor Dave Taylor, of the University of Waterloo, presented a fascinating talk on robust data structures. If one has a data structure, such as a linked list, that can be corrupted (say, by randomly altering certain memory locations) yet can still be reconstructed, then it is "robust". Of course, there are degrees of robustness. Elsewhere in this issue, you'll find a description of the talk, written by John Plaice.

The following Thursday, May 21st, the CSC held its tenth anniversary meeting, with Professor Lee Dickey, also of UW, talking about the portability of APL workspaces. On May 21st, 1971, in Atlantic City, New Jersey, the president of the ACM signed the UW Student Chapter of the ACM into existence. Our meeting concluded with birthday cake provided by Guy Middleton's mother in Thunder Bay and by Joanne West in Waterloo.

The elections of May 14th did not quite follow the rules printed on the posters announcing the elections, so after the May 21st meeting all the people elected and defeated met to discuss what to do. We've decided to have six executive members: Peter Rowley, Guy Middleton, Joanne West, John Plaice, Peter Bain, and Ashok Patel. All will run the CSC, with the specific duties of president, vice-president, treasurer, and secretary going to the first four, respectively, though the titles are president, vice-president, treasurer, secretary, treasurer, and executive-at-large, respectively.

Not willing to let such mistakes happen again, we've formed a constitutional committee to revise the CSC constitution to make the operation of elections precisely prescribed. Posters will announce details of the committee, along with our next meeting which will be held on June 4: Professor Kelly Booth will discuss high resolution colour graphics systems.

Finally, I again urge you to join the CSC. We've been told that MathSoc has a very limited budget this term, as I'm sure you've read elsewhere, so we may not be able to get the funding we need from them alone. Doughnuts cost money and so do phone calls to prospective speakers. In addition, we'd like to bring some speakers from the University of Toronto in July, for which we will have to pay travel expenses. If you join the CSC, your \$1.00 fee will go to pay for all of the above, and your membership will allow you use of the CSC library, including access to current subscriptions to Dr. Dobb's Journal, BYTE, Creative Computing, Computerworld, and Infoworld. So, please come to MC3037 and join the CSC.

peter rowley

Volume 26, Number 2

Friday, May 29, 1981

THE C&D IS OPEN FOR BUSINESS YOUR BUSINESS

Your Coffee & Doughnut stand is open for you. Although there were some difficulties at the beginning of the term, the C & D is going full tilt now, and we think you'll like the changes.

Yes, prices are a little higher than they were, but where aren't they? And the variety of items is going to increase. For instance, salads and fruit are going on sale. We're not talking about dehydrated veggies here, or dead orange rinds, we mean real lettuce and tomatoes and stuff (wee elves stay up all night making them just for you). By the way, if you've ever been ripped of by the milk machines, fret no more. In the near future, we'll have our own product, and, depending on demand (how much you want it), we'll be getting other neat things like yogurt, juice, etc.

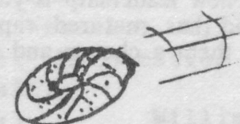
In the meantime, we still have all the wild and wonderful doughnuts, coffee, tea, hot chocolate, bagels (if you're there early, you'll see that they're still hot), pop, soup, subs, etc. We'll try to keep our prices from rising again, but that will, in part, depend on you. After all, you're the reason we do it...(I hope McDonald's doesn't sue). The staff is there to help you any time between 8:20 AM and 3:30 PM, Monday to Friday. There's also a stand in MC5136 (for the lazy Profs who can't make it down 2 flights of stairs) at 9:30 and 2:30 every day. And if you have a suggestion (certain four letter, monosyllabic words do **not** count as suggestions), please feel free to drop a line. If nobody's in the C & D office (MC3039), slide it under the door or leave it in the MathSoc office. If you're interested in working next term, we'd love to see you. Very shortly (within the next 2 weeks), we hope to get the C & D mail box working (i.e. "mail to c.and.d").

CONTEST!

Reproducing Pascal Programs!

Too much Pascal around already? This contest is to discover whether anyone can write a program which will reproduce ALL BY ITSELF. That is, when run, your program should print itself out exactly. No more, and no less. Obviously no data files are allowed. The first person to deliver such a program to the mathNEWS box on the third floor receives a FREE CSC membership, LOTS and LOTS of glory, and (gasp) a mathSoc t-shirt.

Secondary contest (suggested by Kevin Conlin): How many bagels can dance on the head of a pin? The answer is the prize.



BAGELS
FROM
SPACE!

EDITORIAL

The news from the math-Soc front is both encouraging and discouraging. Encouraging is the fact that Mr. Welch and company have, in a very short time, revived the corpse of mathSoc and made it once more a going concern. Discouraging is the fact that some major problems that plague all student societies and mathSoc in particular are not being dealt with. Dangerous precedents are being set which may well lead to major problems in the future.

So as not to give a false impression by this editorial let me first say that I am impressed with the time and energy the present executive is devoting to their duties. Long hours have been spent and are being spent clearing up the mess left by last year's executive and making new plans for the summer. In particular, Social Director Tracey Allen and Vice-President Mark D'Gabriel have been working hard at taking ideas from the 'Wouldn't it be nice' stage to the true planning stage. Certainly the mathsoc office is more active than it has been for many a month.

The new executive is faced with several problems. Some are external. What was at best the incompetence (and at worst the malice) of last year's executive had built up a deficit of about \$3,000. This leaves the present

council with about \$1,000 for the summer, hardly an extravagant sum. However, this lack of funds can be, and is being dealt with.

The major problems faced are internal. There is an ever present danger in any student society of forming a clique. The problem is not when an executive becomes a close knit group, this is an advantage. But, if the group begins to be such as to discourage, either actively or passively, the involvement of those who are not members of the group then the chances for a really effective student society are lost. I will not go so far as to say that the present executive forms a clique, but there are signs that they are moving in the wrong direction. Already some active and talented people have been alienated from mathsoc. It is not my place to ascribe blame for this situation, but I point out that no student society, and least of all mathSoc in its present condition, can long afford to lose the support of those few people who both have talent and are willing to work.

Another major problem is that of mathSoc council. The recent meeting bordered on being a fiasco. It was presided over by two speakers, one a martinet, and the other a clown, neither of whom showed any sign of ability to control the meeting, or indeed any passing acquaintance with the rules of

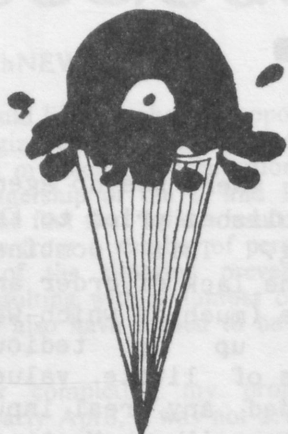
order. There was no agenda published prior to the meeting. This combined with the lack of order and of time (much of which was taken up by tedious reports of little value) precluded any real input from council. Meetings set up in this manner tend to become either elaborate yes machines for the executive or painful shouting matches. The recent meeting had elements of both. Until much more effort is put into the organization and running of council it will remain an essentially useless body.

Finally I still see, both at the council meeting and elsewhere, a distressing lack of formality. The present executive must learn the difference between needless red tape and important rules. The larger an organization becomes the more important formality is. Mathsoc cannot become a really effective organization until proper formalities are observed.

Despite previous criticisms I will end this on a note of congratulations and encouragement. I feel that our current executive have done a good job in the short time they have been working. I also feel that they can overcome their current problems. We may even hope that in a few months the University of Waterloo will have a real Mathematics Society again.

William Hughes

Platter Spatter



Face Value
Phil Collins

Although he was the most visible member of Genesis during the last five years, drummer/vocalist Phil Collins was one of the only musicians associated with the band who had not released a solo album; Mike Rutherford, Tony Banks, Peter Gabriel, Steve Hackett and Anthony Phillips have, between them, produced about a dozen. Except for Gabriel's albums, these solo works have been as ornate and delicate as the recent Genesis releases; however, Phil Collins' new album is an entirely different sort of thing altogether.

The songs on *Face Value* can be divided roughly into three groups. The first group consists of songs featuring the Earth, Wind and Fire horn section—these songs have the same jazz/funk sound as those of EWF do. (Examples: 'Behind The Lines', the only Genesis song on this album; 'I Missed Again', which you have probably heard with or without realizing it; 'Hand In Hand'.) The second group are the ballads, which feature Collins' high, plaintive vocalizing. (Examples of this group are: 'In The Air Tonight', a song which, by itself, makes the album a worthwhile purchase; 'This Must Be Love'; 'If Leaving Me Is Easy'.) The third group contains one member: an excellently done version of the old Lennon/McCartney classic 'Tomorrow Never Knows'. Although I still prefer the version performed by 801 (a band featuring Phil Manzanera on guitar and Brian Eno on keyboards and vocals) on their live album, this version is almost as good.

To conclude: This album gives Phil Collins an opportunity to show off talents not displayed on Genesis albums—i.e., his keyboard playing and his songwriting (all but two are his own). Well worth buying or at least listening to.

The League Of Gentlemen Robert Fripp

The League Of Gentlemen was a band formed by former King Crimson guitarist/leader Robert Fripp in March, 1980, which existed for the remainder of that year. It consisted of Fripp, former XTC member Barry Andrews (organ), Sara Lee (bass) and Jonny Toobad (later replaced by Kevin Wilkinson) (drums). This album, the third released by Fripp since his self-proclaimed 'Drive to 1981' began on September 11, 1978, is a collection of songs recorded by the band plus some odds and ends; like all of Fripp's solo albums, it is an attempt to create music which is both physical and cerebral. Also, Fripp desires that the listener place himself in a position of equal responsibility with the performer by listening actively. A passage from the inner sleeve of his *God Save The Queen/Under Heavy Manners* album states his philosophy of music clearly:

"In 1974, I left King Crimson for a number of reasons; on a professional level this was largely a result of the decreasing possibility for any real contact between audience and performers. This seemed to me to be caused by three main factors: firstly, the escalation in the size of rock events; secondly, the general acceptance of rock music as spectator sport; thirdly, the vampiric relationship between audience and performer."

The album itself partially succeeds in achieving the goals Fripp sets for his music. The best songs, 'Inductive Resonance', 'Dislocated', 'Trap' and 'Heptaparaparshinokh' (*whew!*), combine complex guitar and keyboard flights of fancy with a rock-steady rhythm section to produce both listenable and danceable music. Fripp himself is superb technically, and he has the ability to summon forth odd distorted sound effects from his guitar at will (check out the solos on David Bowie's *Scary Monsters* album). On the other hand, some of Fripp's experiments are not successful—for instance, 'Pareto Optimum', which is divided into two parts and consists of what sounds like 1001 music boxes playing at random; this is not particularly interesting. Also, why are we, near the end of side one, given the aural treat of a woman repeating the phrase "Ding, dong and Fripp" over and over again?

But enough carping—the album as a whole is quite good and I still think I got my money's worth; I recommend it to anyone interested in something a little different.

David Till

FASDRR

YABA-DABA-DOO! The FASDRR Flinstones made their debut last Monday night. In their first outing of the season, the Flinstones battled to a 17 all tie with the Wormer Surplus.

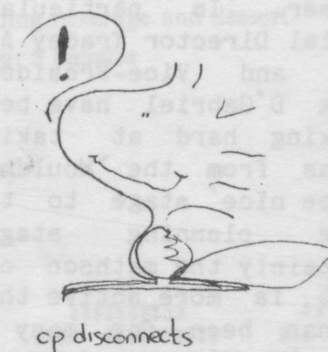
The Flinstones recieved a strong performance from everyone and showed great team spirit. The supporting cast includes: Line 'Pebbles' Ouellette, Kim 'Delima' Ehret, Beth 'Betty' Martin, Sharon 'Wilma' Person, Joel 'Dino' Smith, Armand 'Bam Bam' Chiasson, Trent 'Hoppy' Krauel, Pierre 'Caillou' Coupal, and Dave 'Barney' Agnew.

The game began quickly with the Flinstones taking a one run lead, 11 to 10, after just two innings. After a scoreless third, the Flinstones managed to take a four run lead, with clutch hitting from Dino, Delima and Bam Bam. However, the Wormer Surplus (surplus of guys!), scored four runs in the bottom half, to even the sides at 15. In the top of the fifth, Wilma and Dino scored to give the Flinstones a slim two run lead. In the bottom of the inning, the Flinstones held the opposition to two runs, with solid defensive plays from Hoppy and Pebbles.

The Flinstones' next game is against the 2B Geocrunchers, Monday June 1st, 4:00 p.m. at Columbia 5C. The following week, the Flinstones will do battle against the Stray Cats, Monday June 8th, 5:20 p.m. at Columbia 5C.

In the continuing lecture series, FASDRR welcomes Dr. S. Morton (scientist), author of the book: 'Half-Schnapped'. Dr. Morton will discuss his theory that eating vegetables causes cancer.

M. Adman



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14pt HELVETICA

CSC's 10th Anniversary!

On Thursday, May 21st, the Computer Science Club celebrated its 10th Anniversary as the Student Chapter of the University of Waterloo. The guest speaker was Dr. L.J. Dickey of our Department of Pure Mathematics, who gave a talk on the developing APL Information Interchange Standard.

Dr. Dickey first gave a brief synopsis of the APL (A Programming Language) language. APL is a language which was designed to be simple. Rather than attempt to overload symbols, the designer created a large character set so that a large variety of operators could be implemented. Dr. Dickey gave a few examples of APL operators and functions.

APL, though quite widespread, suffers from the problem that it is almost always impossible to move one workspace (set of programs and routines) from one APL to another without retyping everything. Because of this problem, an Information Interchange Standard is being developed in Canada, the United States and France. Though right now the three countries are going in different directions it is expected that since there is so much communication between the three groups and since three standards would be ridiculous, in the end there will be one standard agreed upon by all three.

In APL, there are two main types of object: arrays and functions. To write functions, we use what is known as the canonical representation of a function. Each function is represented by a

two-dimensional array, one dimension being the number of lines, the second dimension being the length of the longest line. Arrays are written in the same manner as they are in standard APL. With these arrangements, it is quite simple to write arrays and functions as character strings without using any of the ASCII control characters. by using Canonical Representation Vectors (CRV's). These vectors commence with a description of the rest of the vector and terminate with the appropriate function or array.

Although we now have a method of describing everything in APL, we still do not have a way of sending a workspace. This problem has been worked out by creating a special of type of object (a Pseudo-variable). There are five types of pseudo-variables:

- 1: Convention identifier (describes the interchange standard used).
- 2: Translate table (describes how the various characters are sent).
- 3: Note (comments).
- 4: Workspace identifier (gives the title of the appropriate workspace).
- 5: End of Stream (signifies that nothing follows this line).

After describing the Standard, Dr. Dickey talked about the standardizing of APL. Although much talked about, no-one is working at any great speed towards creating a standard APL. It is likely though, that when a standard is created, there will be no existing APL which will fully meet the requirements of a standard APL.

Warriors Band

During the fall and winter terms, the campus of this university is graced by the melodious sounds of those master musicians, the one and only Warriors Band. Little do the spring term students realize that even as they lie on the grass drinking beer, the members of the Warriors Band are scheming and planning and organizing and ... who knows what music lurks in the hearts of these creative cacophonists?

The big event this term is Convocation. The leader of the band for the past 25 years (would you believe 3?) is graduating, dispelling the theory that all he could do was tell bad jokes at halftime shows. The Band are cleaning and polishing their instruments in preparation for this once in a lifetime gala. The event takes place around 11:30 on Saturday May 30. If the weather is nice, then the Band will play on the steps leading to the CC near Red South, else it will be inside the CC. Come and listen to all your favourite tunes (sorry, no AC/DC). Admission is free. Remember what A. Kuerti once said ...

'The Warriors Band makes the New York Philharmonic sound like an orchestra'

Kevin Tureski

03:00 the end of a long long long night. The photon ran out of paper and hence the half diabolical issue. Contributing to tonight's disaster were our inimitable gourmand JCWinterton, the ever popular Andrew welch (last page), His sidekick M D'Gabriel (c n d), K Tureski (warriors band), The snoopy fellow M Gore, JJLong (letter), J Puttick (photoning before it ran out of paper), K Conlin (help? with contest), John Plaiice (CSC tenth, Mad cyclist), Madman, D'Arcy Emery (lots of help), Dave Till (right hand man, layout, plat/splat), Special thanks to the long suffering Peter Rowley who suffered a bit more tonight (also CSC flash). A curse on G Middleton who failed to come up with a promised article for the second week in a row. J West was not here as she was at home doing work ??? hope this fits TTWIAHA your ed w hughes.

ps, get well soon Tracey! — apw

MATH T-SHIRT? WHAT DO YOU THINK ?!?



The rough designs pictured here are just that, rough ideas. Your math society needs a design to send off to the printers SOON! We want to hear what you think of these...or maybe you have some of your own. Send them in! And remember that we still need colour suggestions (maybe a black pi or 'e' shirt with white lettering to go with the buttons - more of which are on their way...YEH!)

The shirt is yours...
not ours.....

CENSUS PUB
JUNE 3
mc 5136 8:00

"Count Yourself In"

NOTE

Well, the new Math Society held its first meeting on May 20th and many changes have and will come about in the society as a result of that meeting. To begin with, the council ratified the following new members:

President - Andrew Welch
Vice President - Mark D'Gabriel
Treasurer - Bruce Glassford
Administrator - James Puttick
Internal Affairs - Robert Byrd
Social Director - Tracey Allen
Speaker - Tim Hill

Class Reps.
Nancy Sit Beverly Leung
Dani Roloson David Maier
Al Bechamp Wei Ying Lam

Faced with bills from the last term's council in the thousands of dollars, students cannot expect to see much in the way of heavy spending coming from the society this term. This is not to say that there won't be any entertainment....far from it. There will be a PUB on June 3rd (see below), and the plans on the drawing board for Math Week (June

PREZ SEZ

29-July 4) point to a very extensive week of enjoyment for the entire faculty of Math.

Much has been said in the past about 'student apathy'. Personally, I don't think that that is the problem. The source of the trouble is the lack of information made available to the students. It is (so I've heard) the general belief that MathSoc is a special select group of students that spend a lot of time playing cards in the office and partying. Nothing could be further from the truth. The Society will no longer allow games of any kind in the office, (which now has hours of 9:30 to 5:00). The MathSoc council has not had a party of any kind in at least the last 3 years. The point is that the image was there and the attitude of many previous council members did much to strengthen it. Actually, the Math Society

works very hard at planning events, putting out mathNEWS, keeping your C & D stand in operation, keeping the office open and staffed so that students can use the stapler, 3-hole punch, publications, phone, lost & found, etc., managing and financing the mathLETICS teams, giving you T-shirts and buttons, and representing you and other mathies to many of the universities boards and committees. Unfortunately it is a much harder job than it has to be; the number of students who pitch in and help has dropped so low that very soon the academic marks of the faithful will suffer. This does not and should not be the case. So show a little interest in what the society does for you and what you can do for them. It's a pretty thankless job and the MathSoc students need all the help that you can offer.

Andrew P. Welch
President of MathSoc